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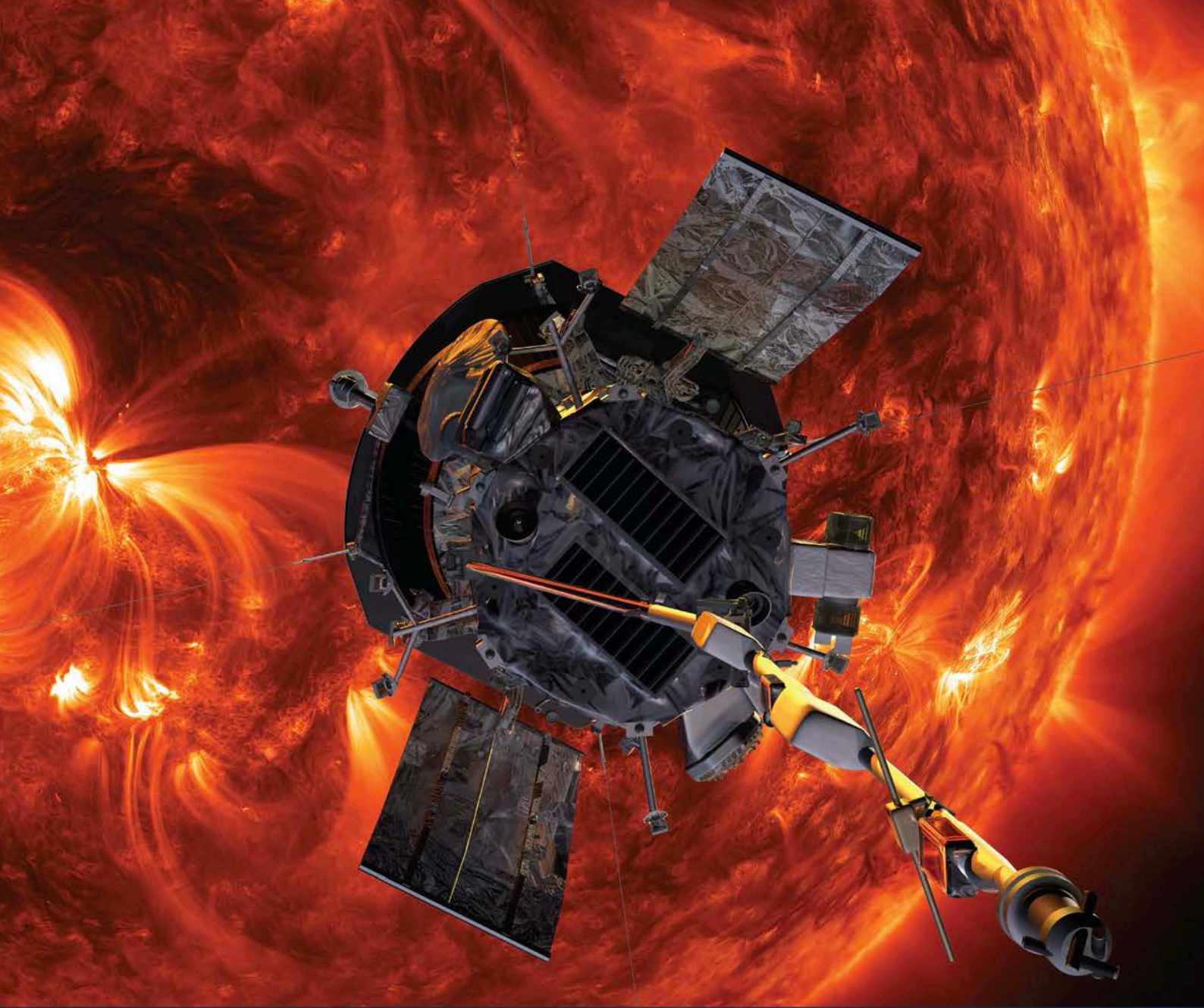
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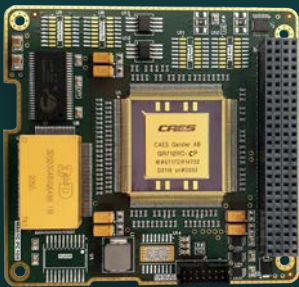
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The **Multipurpose Adapter Generic Interface Connector (MA61C)** is an **intelligent system** that can scan connections, detect incoming data, route and convert data between interfaces.

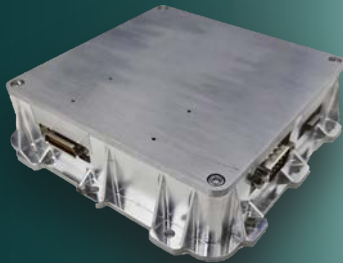
MA61C adapts between the communication interface and protocol of different suppliers to the unique standard of the onboard computer, without driver installation or user configuration.

Designed for satellites of various sizes, from CubeSats to larger spacecraft, MA61C facilitates seamless integration of off-the-shelf components.

MA61C for CubeSat



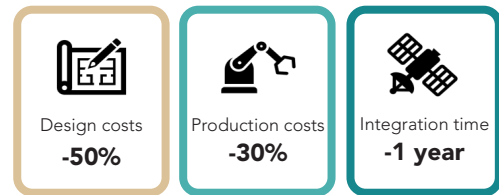
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1 Information

1.1 Information for Authors

All authors are asked to upload their manuscripts and multimedia presentations prior to the Congress to make them available to all participants on the online Proceedings of the 75th International Astronautical Congress.

You can still update your manuscripts through the IAF platform: <https://iafastro.directory/iaf/account/login/>. Multimedia presentations can be uploaded in the Speaker Preparation Room. Your presentation will be automatically preloaded on the computer in the Technical Session Room. Please note that speakers are not allowed to insert USB memory sticks into the computers in the Technical Session rooms. Therefore, all updates need to be uploaded before the Technical Session takes place. Our help desk team will assist you in uploading presentations during operating hours. Speakers are requested to report to their allocated Technical Session room at least 10 minutes prior to the start of their session to meet with their Session Chair and to check their presentation. Do not forget to bring two printed courtesy copies of your manuscript. Some Session Chairs might also ask you for a short biography to introduce you at the session.

1.2 Congress Proceedings and Virtual Technical Gallery

The IAC 2024 Proceedings are available on a password protected site. The Congress participants will be provided with a link and online password to login and access the Congress Proceedings. If you did not receive the password, please contact: digital.library@iafastro.org. IAC papers will be indexed in the largest cited reference enhanced multidisciplinary databases: Elsevier's SCOPUS and Compendex. Each manuscript presented at IAC 2024 will be registered with a unique DOI.

The materials published as part of the Technical Programme (Lightning Talks, Video Lectures and Papers) will be made available to the Congress Delegates through the IAC 2024 Virtual Technical Gallery.

1.3 Speaker Preparation Room

Authors who missed the deadline for presentation submission or who wish to update/review their presentation can do so in the Speaker Preparation Room. Authors are required to bring a back-up copy of their presentation on a USB Memory Stick. Video content should be saved as separate files.

Location: Foyer 1 / 2 (Level 1, North Wing)

Opening hours:

Sunday 13 October, 14:00-18:00

Monday 14 October - Thursday 17 October, 08:30-18:00

Friday 18 October, 08:30-16:30

1.4 IAF App

The full Technical Programme is also incorporated within the IAF App, which will make it easier to follow the entire content and enable you to best plan your participation and choose the events from the Technical Programme to attend.

iOS

Android



1.5 Certificates of Attendance and Presentation

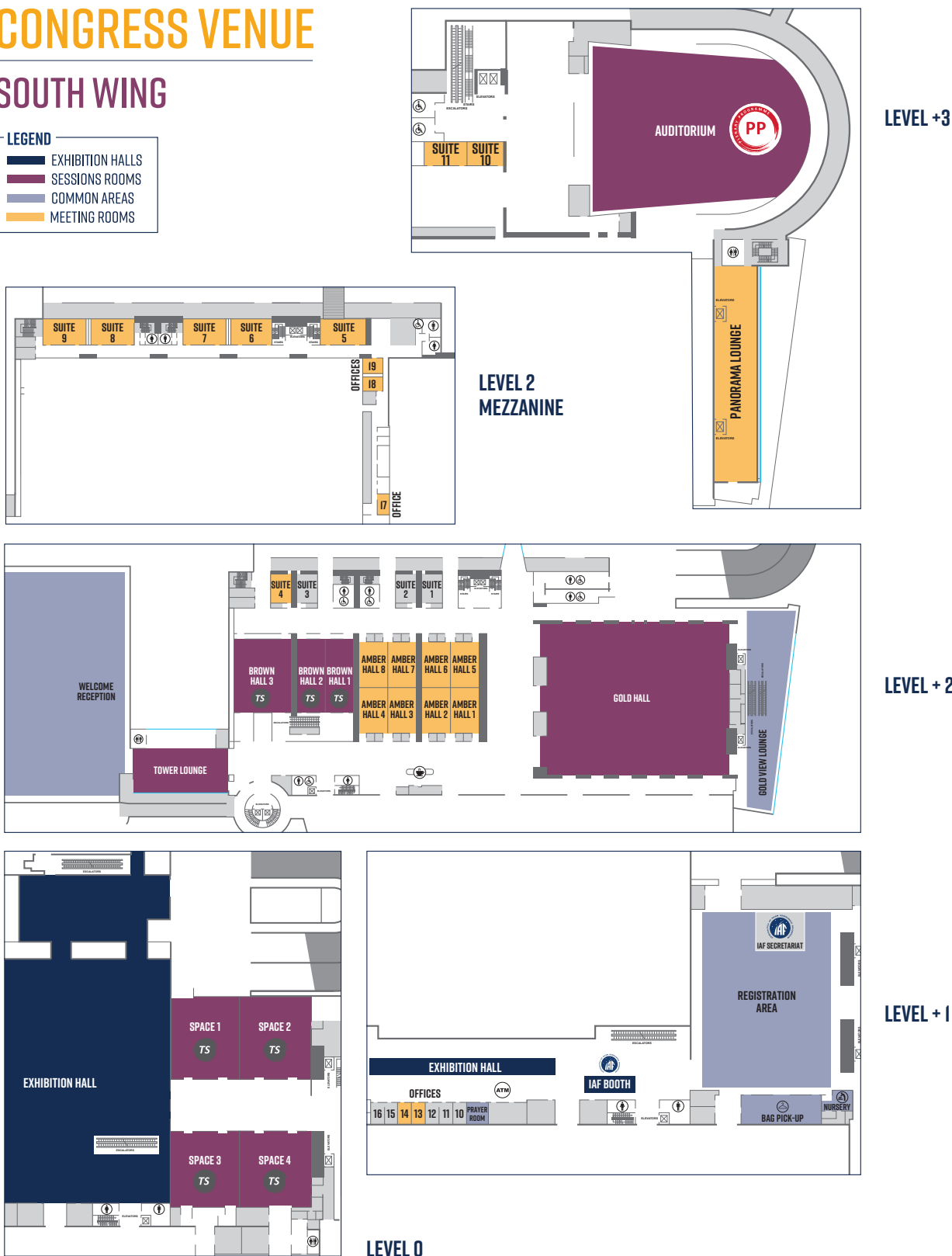
Certificates of Attendance and Presentation are available on request at the IAF Secretariat Office. Claims of hours of applicability toward professional education requirements are the responsibility of the participant.

1.6 Floor Plans

CONGRESS VENUE

SOUTH WING

LEGEND	
	EXHIBITION HALLS
	SESSIONS ROOMS
	COMMON AREAS
	MEETING ROOMS



INTRODUCTION

TECHNICAL SESSIONS

KEYNOTE SPEAKERS

SPECIAL SESSIONS

INTERACTIVE PRESENTATIONS

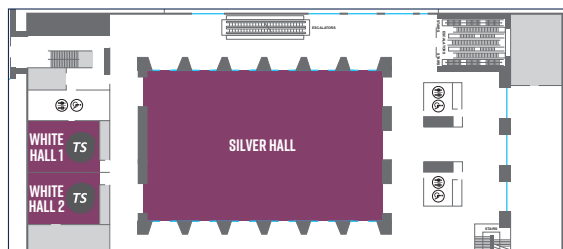
TECHNICAL SESSIONS BY SYMPOSIUM

CONGRESS VENUE

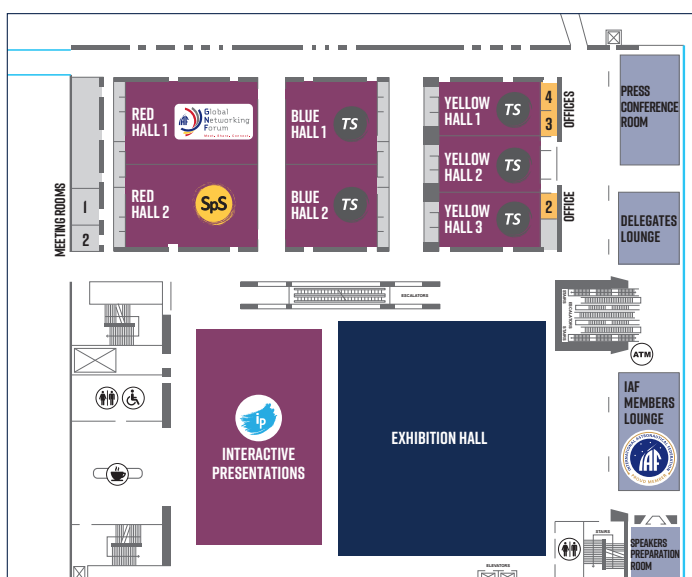
NORTH WING

LEGEND

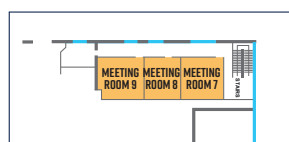
- EXHIBITION HALLS
- SESSIONS ROOMS
- COMMON AREAS
- MEETING ROOMS



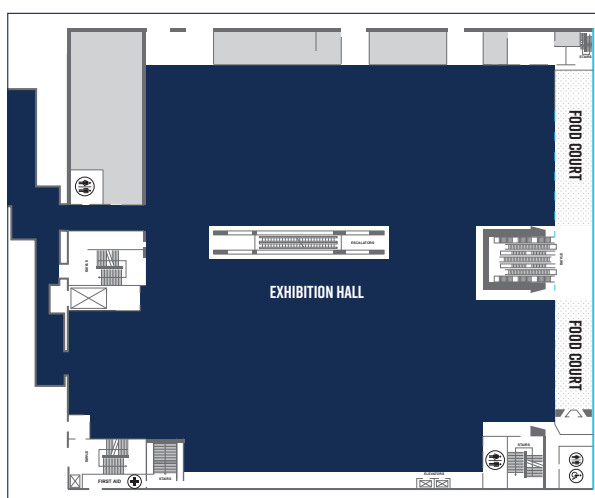
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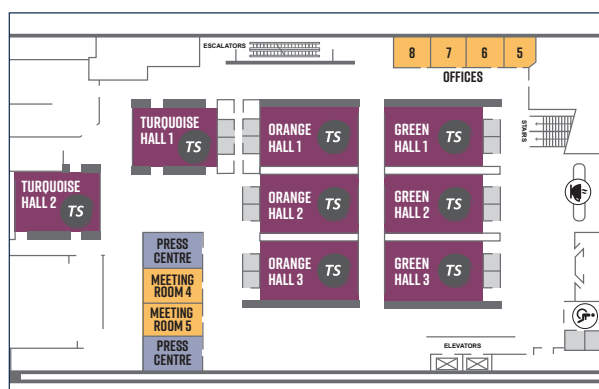
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LEVEL 0
MEZZANINE



LEVEL 0



LEVEL -1

2 Technical Sessions

2.1 Technical Sessions at a Glance



Date	14/10/2024	15/10/2024	15/10/2024	16/10/2024	16/10/2024	17/10/2024	17/10/2024	18/10/2024	18/10/2024
Time / Room Number	15:30-18:00	10:15-12:45	15:00-17:30	10:15-12:45	15:00-17:30	10:15-12:45	15:00-17:30	10:15-12:45	13:45-16:15
Space Hall 1	A3.1	A3.2A	A3.2B	A3.3A	A3.3B	A3.4A	A3.5	A3.4B	A3.2C
White Hall 2	D2.1	D2.3	D2.2	D2.4	D2.5	D2.6	D2.7	D2.8	D2.9/D6.2
Blue Hall 2	C1.6	C1.7	C1.8	C1.9	C1.1	C1.2	C1.3	C1.4	C1.5
Brown Hall 3	A6.8/E9.1	A6.1	A6.7	A6.9	A6.4	A6.3	A6.2	A6.5	A6.6
Space Hall 4	B3.1	B3.2	B3.3	B3.4/B6.4	B3.5	B3.7	B3.6/A5.3	B3.8	E10.2
Space Hall 2	B4.2	B4.1	B4.3	B4.4	B4.5	B4.6B	B4.7	B4.8	B4.6A
Green Hall 3	E7.1	E7.2	E7.3	E7.4	E7.5	E7.6/E3.5	E10.1	E7.7	C2.10
Blue Hall 1	C4.1	C4.3	C4.5	C4.2	C4.6	C4.7	C4.8/B4.5A	C4.9	C4.10/C3.5
Orange Hall 1	C2.1	C2.2	C2.3	C2.4	C2.5	C2.6	C2.7	C2.8	C2.9
Yellow Hall 2	A1.1	A1.2	A1.3	C4.4	A1.4	A1.5	A1.6	A1.7	A1.8
White Hall 1	A2.1	A4.1	A4.2	A2.2	A2.3	A2.4	A2.5	A2.6	A2.7
Orange Hall 3	D1.1	D1.2	D1.3	A5.1	A5.2	D1.4	D1.5	D1.6	D1.7
Space Hall 3	B1.1	C3.1	B1.7	B1.8	B1.4	B1.5	B1.6	C3.3	C3.4
Brown Hall 2	E9.2	E3.1	E3.2	E3.3	E3.4	A5.4	E3.6	D1.8	B1.3
Turquoise Hall 2	E5.1	D5.2	E5.2	D5.1	E5.3	D5.3	E5.4	E5.5	E5.6
Orange Hall 2	C3.2	B2.7	B2.1	B2.2	B2.3	B2.4	B2.5	B2.6	E8.1
Green Hall 1	E1.1	E1.2	E1.3	E1.4	E1.5	E1.6	E1.7	B1.2	E1.9
Turquoise Hall 1	D4.1	D4.2	D4.3	D3.1	D3.2A	D4.4	D4.5	D3.2B	D3.3
Green Hall 2	E2.1	E2.2	B6.2	E2.4	B5.2	B5.3	B6.5	B6.1	B6.3
Yellow Hall 1	B2.8/GTS.3	D6.1	E2.3/GTS.4	B5.1	E6.5/GTS.1	D6.3	B4.9/GTS.5	D5.4	B3.9/GTS.2
Brown Hall 1	A6.11	E6.4	E6.3	E6.2	E4.1	E4.2	E6.1	E4.3	A6.10/E9.4
Yellow Hall 3	A7.1	A7.2	A2.8	E11.1	A7.3	E9.3	E1.10/E11.2	E1.8	

Category E:
Space
& Society

Category C:
Technology

Category A:
Science
& Exploration

Category B:
Applications
& Operations

Category D:
Infrastructure

2.2 Technical Sessions by Day

Monday, 14 October 2024

15:30 Technical Sessions		
No.	Title	Room
A1.1	Behaviour, Performance and Psychosocial Issues in Space	Yellow Hall 2
A2.1	Gravity and Fundamental Physics	White Hall 1
A3.1	Space Exploration Overview	Space Hall 1
A6.8-E9.1	Policy, Legal, Institutional, Economic and Security Aspects of Debris Mitigation, Debris Remediation and STM	Brown Hall 3
A6.11	Space Debris Detection, Tracking and Characterization II	Brown Hall 1
A7.1	Space Astronomy missions, strategies and plans	Yellow Hall 3
B1.1	International Cooperation and Business Ventures in Earth Observations	Space Hall 3
B2.8-GTS.3	Space Communications and Navigation Global Technical Session	Yellow Hall 1
B3.1	Governmental Human Spaceflight Programmes (Overview)	Space Hall 4
B4.2	Small Space Science Missions	Space Hall 2
C1.6	Mission Design, Operations & Optimization (1)	Blue Hall 2
C2.1	Space Structures I Design, Development and Verification (Launch Vehicles and Space Vehicles, including their Mechanical/Thermal/ Fluidic Systems)	Orange Hall 1
C3.2	Wireless Power Transmission Technologies and Application	Orange Hall 2
C4.1	Liquid Propulsion (1)	Blue Hall 1
D1.1	Innovative Systems toward Future Architectures	Orange Hall 3
D2.1	Launch Vehicles in Service or in Development	White Hall 2
D4.1	Innovative Concepts and Technologies	Turquoise Hall 1
E1.1	Lift Off: Primary and Secondary Education	Green Hall 1
E2.1	Student Conference - Part 1	Green Hall 2
E5.1	Space Architecture: Habitats, Habitability, and Bases	Turquoise Hall 2
E7.1	Young Scholars Session with Keynote Lecture	Green Hall 3
E9.2	Cyber-based security threats to space missions: establishing the legal, institutional and collaborative framework to counteract them	Brown Hall 2

Tuesday, 15 October 2024

10:15 Technical Sessions		
No.	Title	Room
A1.2	Human Physiology in Space	Yellow Hall 2
A3.2A	Moon Exploration – Part 1	Space Hall 1
A4.1	SETI 1: SETI Science and Technology	White Hall 1
A6.1	Space Debris Detection, Tracking and Characterization - SST	Brown Hall 3
A7.2	Science Goals and Drivers for Future Exoplanet, Space Astronomy and Space Physics	Yellow Hall 3
B2.7	Advances in Space-based Network and Communication Technologies	Orange Hall 2
B3.2	Commercial Human Spaceflight Programmes	Space Hall 4
B4.1	25th Workshop on Small Satellite Programmes at the Service of Developing Countries	Space Hall 2
C1.7	Mission Design, Operations & Optimization (2)	Blue Hall 2

No.	Title	Room
C2.2	Space Structures II Development and Verification (Orbital deployable and dimensionally stable structures, including mechanical and robotic systems and subsystems)	Orange Hall 1
C3.1	Solar Power Satellite	Space Hall 3
C4.3	Solid and Hybrid Propulsion (1)	Blue Hall 1
D1.2	Technologies that Enable Space Systems	Orange Hall 3
D2.3	Upper Stages, Space Transfer, Entry & Landing Systems	White Hall 2
D4.2	Contribution of Moon Village to Solving Global Societal Issues	Turquoise Hall 1
D5.2	Emerging trends of knowledge management in organizations	Turquoise Hall 2
D6.1	Commercial Spaceflight Safety and Emerging Issues	Yellow Hall 1
E1.2	Space for All: Decolonial Practices in Space	Green Hall 1
E2.2	Student Conference - Part 2	Green Hall 2
E3.1	International cooperation in using space for sustainable development: The "Space2030" agenda	Brown Hall 2
E6.4	Strategic Risk Management for Successful Space & Defence Programmes	Brown Hall 1
E7.2	Near Space: Legal Aspects of Aerospace Activities	Green Hall 3

15:00 Technical Sessions

No.	Title	Room
A1.3	Medical Care for Humans in Space	Yellow Hall 2
A2.8	In-Space Manufacturing and Production Applications	Yellow Hall 3
A3.2B	Moon Exploration – Part 2	Space Hall 1
A4.2	SETI 2: SETI and Society	White Hall 1
A6.7	Operations in Space Debris Environment, Situational Awareness - SSA	Brown Hall 3
B1.7	Earth Observations to address Earth's Environment and Climate Challenges	Space Hall 3
B2.1	Space-based PNT (Position, Navigation, Timing) Architectures, Applications, and Services	Orange Hall 2
B3.3	Utilization & Exploitation of Human Spaceflight Systems	Space Hall 4
B4.3	Small Satellite Operations	Space Hall 2
B6.2	Innovative Space Operations Concepts and Advanced Systems	Green Hall 2
C1.8	Orbital Dynamics (1)	Blue Hall 2
C2.3	Space Structures III Design, Development and Verification (Orbital infrastructure for in orbit service & manufacturing, Robotic and Mechatronic systems, including their Mechanical/ Thermal/ Fluidic Systems)	Orange Hall 1
C4.5	Electric Propulsion (1)	Blue Hall 1
D1.3	Emergent Space Systems	Orange Hall 3
D2.2	Launch Services, Missions, Operations, and Facilities	White Hall 2
D4.3	Modern Day Space Elevator Transformational Strengths and their Applications	Turquoise Hall 1
E1.3	On Track: Undergraduate Space Education	Green Hall 1
E2.3-GTS.4	Student Team Competition	Yellow Hall 1
E3.2	The future of space exploration and innovation	Brown Hall 2
E5.2	Is Space R&D Truly Fostering A Better World For Our Future?	Turquoise Hall 2
E6.3	Innovation: The Academics' Perspectives	Brown Hall 1
E7.3	Artificial Intelligence and Safe Space Communication	Green Hall 3

Wednesday, 16 October 2024

10:15 Technical Sessions

No.	Title	Room
A2.2	Fluid and Materials Sciences	White Hall 1
A3.3A	Mars Exploration – missions current and future	Space Hall 1
A5.1	Human Exploration of the Moon and Cislunar Space	Orange Hall 3
A6.9	Orbit Determination and Propagation - SST	Brown Hall 3
B1.8	IAF EARTH OBSERVATION SYMPOSIUM - Extra Session	Space Hall 3
B2.2	Space-based PNT (Position, Navigation, Timing) Sensors and Systems	Orange Hall 2
B3.4-B6.4	Flight & Ground Operations aspects of Human Spaceflight - Joint Session of the IAF Human Spaceflight and IAF Space Operations Symposia	Space Hall 4
B4.4	Small Earth Observation Missions	Space Hall 2
B5.1	Tools and Technology in Support of Integrated Applications	Yellow Hall 1
C1.9	Orbital Dynamics (2)	Blue Hall 2
C2.4	Space Structures Control, Dynamics and Microdynamics	Orange Hall 1
C4.2	Liquid Propulsion (2)	Blue Hall 1
C4.4	Solid and Hybrid Propulsion (2)	Yellow Hall 2
D2.4	Future Space Transportation Systems	White Hall 2
D3.1	Strategies & Architectures as the Framework for Future Building Blocks in Space Exploration and Development	Turquoise Hall 1
D5.1	For a successful space program: Quality and Safety!	Turquoise Hall 2
E1.4	In Orbit: Postgraduate Space Education	Green Hall 1
E2.4	Educational Pico and Nano Satellites	Green Hall 2
E3.3	Space Economy Session – A focus on space sustainable operations and the role of governments I to stimulate sustainable economic development for both in space and on earth.	Brown Hall 2
E6.2	Public-Private Partnerships: Traditional and New Space Applications	Brown Hall 1
E7.4	Launching into Outer Space	Green Hall 3
E11.1	Connecting Emerging Space ecoSystems	Yellow Hall 3

15:00 Technical Sessions

No.	Title	Room
A1.4	Medicine in Space and Extreme Environments	Yellow Hall 2
A2.3	Microgravity Experiments from Sub-Orbital to Orbital Platforms	White Hall 1
A3.3B	Mars Exploration – Science, Instruments and Technologies	Space Hall 1
A5.2	Human Exploration of Mars	Orange Hall 3
A6.4	Mitigation - Tools, Techniques and Challenges - SEM	Brown Hall 3
A7.3	Technology Needs for Future Missions, Systems, and Instruments	Yellow Hall 3
B1.4	Earth Observation Data Systems and Technology	Space Hall 3
B2.3	Advance Higher Throughput Communications for GEO and LEO satellites	Orange Hall 2
B3.5	Astronaut Training, Accommodation, and Operations in Space	Space Hall 4
B4.5	Access to Space for Small Satellite Missions	Space Hall 2
B5.2	Integrated Applications End-to-End Solutions	Green Hall 2
C1.1	Attitude Dynamics (1)	Blue Hall 2
C2.5	Space Structures and Materials for Extreme Environment (High-temperature and cryogenic-temperature applications including thermal insulation concepts)	Orange Hall 1

No.	Title	Room
C4.6	Electric Propulsion (2)	Blue Hall 1
D2.5	Technologies for Future Space Transportation Systems	White Hall 2
D3.2A	Systems and Infrastructures to Implement Sustainable Space Development and Settlement - Systems	Turquoise Hall 1
E1.5	Enabling the Future: Developing the Space Workforce	Green Hall 1
E3.4	Assuring a Safe, Secure and Sustainable Environment for Space Activities	Brown Hall 2
E4.1	Memoirs & Organisational Histories	Brown Hall 1
E5.3	Contemporary Arts Practice and Outer Space: A Multi-Disciplinary Approach	Turquoise Hall 2
E6.5-GTS.1	Entrepreneurship Around the World	Yellow Hall 1
E7.5	Alternative Space Rules Setting	Green Hall 3

Thursday, 17 October 2024

10:15 Technical Sessions		
No.	Title	Room
A1.5	Radiation Fields, Effects and Risks in Human Space Missions	Yellow Hall 2
A2.4	Science Results from Ground Based Research	White Hall 1
A3.4A	Small Bodies Missions and Technologies (Part 1)	Space Hall 1
A5.4	Deep Space Habitats and Resources	Brown Hall 2
A6.3	Impact-Induced Mission Effects and Risk Assessments	Brown Hall 3
B1.5	Earth Observation Societal and Economic Applications, Challenges and Benefits	Space Hall 3
B2.4	Space-based Optical and Quantum Communications	Orange Hall 2
B3.7	Advanced Systems, Technologies, and Innovations for Human Spaceflight	Space Hall 4
B4.6B	Generic Technologies for Nano/Pico Platforms	Space Hall 2
B5.3	Satellite Applications for Sustainability and Climate	Green Hall 2
C1.2	Attitude Dynamics (2)	Blue Hall 2
C2.6	Space Environmental Effects and Spacecraft Protection	Orange Hall 1
C4.7	Hypersonic Air-breathing and Combined Cycle Propulsion, and Hypersonic Vehicle	Blue Hall 1
D1.4	Cooperative Systems	Orange Hall 3
D2.6	Future Space Transportation Systems Verification and In-Flight Experimentation	White Hall 2
D4.4	Strategies for Rapid Implementation of Interstellar Missions: Precursors and Beyond	Turquoise Hall 1
D5.3	Prediction, Testing, Measurement and Effects of space environment on space missions	Turquoise Hall 2
D6.3	Enabling safe commercial spaceflight: vehicles and spaceports	Yellow Hall 1
E1.6	Calling Planet Earth: Large Engagement and Communications Initiatives	Green Hall 1
E4.2	Organizational, Scientific and Technical Histories	Brown Hall 1
E9.3	Norms and Standards for Safe and Responsible Behaviour in Space	Yellow Hall 3

15:00 Technical Sessions

No.	Title	Room
A1.6	Advancements in Astrobiology and Space Exploration	Yellow Hall 2
A2.5	Facilities and Operations of Microgravity Experiments	White Hall 1
A3.5	Solar System Exploration including Ocean Worlds	Space Hall 1
A6.2	Modeling and Risk Analysis	Brown Hall 3
B1.6	Assessing and Mitigating the Global Freshwater Crisis	Space Hall 3
B2.5	Extra-Terrestrial and Interplanetary Communications, and Regulations	Orange Hall 2
B3.6-A5.3	Human and Robotic Partnerships in Exploration - Joint session of the IAF Human Spaceflight and IAF Exploration Symposia	Space Hall 4
B4.7	Constellations and Distributed Systems	Space Hall 2
B4.9-GTS.5	Small Satellite Missions Global Technical Session	Yellow Hall 1
B6.5	Large Constellations & Fleet Operations	Green Hall 2
C1.3	Guidance, Navigation and Control (1)	Blue Hall 2
C2.7	Manufacturing and industrialization for Launch Vehicle and Space Vehicle Structures and components (High volume production, industrialization, automatization and digitalization)	Orange Hall 1
C4.8-B4.5A	Joint Session between IAA and IAF for Small Satellite Propulsion Systems	Blue Hall 1
D1.5	Systems Engineering Modeling and Analysis	Orange Hall 3
D2.7	Suborbital Rockets and Small Launchers: Concepts and Operations including Student Rocketry	White Hall 2
D4.5	Space Resources, the Enabler of the Earth-Moon Ecosphere	Turquoise Hall 1
E1.7	Sending out a Signal: Innovative Outreach and Communications Initiatives	Green Hall 1
E1.10-E11.2	Space Education Outreach and Workforce Development for Emerging Communities	Yellow Hall 3
E3.6	Space Sector's Commercial Transformation: Procurement Opportunities and Financial Transparency	Brown Hall 2
E5.4	Space Assets and Disaster Management	Turquoise Hall 2
E6.1	Space Entrepreneurship and Investment: The Practitioners' Perspectives	Brown Hall 1
E10.1	Planetary Defense from Asteroids and Comets	Green Hall 3

Friday, 18 October 2024

10:15 Technical Sessions

No.	Title	Room
A1.7	Life Support, habitats and EVA Systems	Yellow Hall 2
A2.6	Microgravity Sciences on board of Space stations	White Hall 1
A3.4B	Small Bodies Missions and Technologies (Part 2)	Space Hall 1
A6.5	Post Mission Disposal and Space Debris Removal 1 - SEM	Brown Hall 3
B1.2	Earth Observation Systems	Green Hall 1
B2.6	Cubesat, Internet of Things, and Mobile Direct Communications	Orange Hall 2
B3.8	Human Space & Exploration	Space Hall 4
B4.8	Small Spacecraft for Deep-Space Exploration	Space Hall 2
B6.1	Ground Operations - Systems and Solutions	Green Hall 2
C1.4	Guidance, Navigation and Control (2)	Blue Hall 2
C2.8	Advancements in Materials Applications, Additive Manufacturing, and Rapid Prototyping Manufacturing and Rapid Prototyping	Orange Hall 1

No.	Title	Room
C3.3	Advanced Space Power Technologies	Space Hall 3
C4.9	Disruptive Propulsion Concepts for Enabling New Missions	Blue Hall 1
D1.6	Systems Engineering Approaches, Processes and Methods	Orange Hall 3
D1.8	D CATEGORY "INFRASTRUCTURE" - Extra Session	Brown Hall 2
D2.8	In-Space Transportation Solutions and Space Logistics	White Hall 2
D3.2B	Systems and Infrastructures to Implement Sustainable Space Development and Settlement - Technologies	Turquoise Hall 1
D5.4	Cybersecurity in space systems, risks and countermeasures	Yellow Hall 1
E1.8	Show Us Space: Demonstration of Hands On Education and Outreach	Yellow Hall 3
E4.3	History of Italian Contribution to Astronautics	Brown Hall 1
E5.5	Sharing Space Achievements and Heritage: Space Museums and Societies	Turquoise Hall 2
E7.7	Regional Space Legislation	Green Hall 3

13:45 Technical Sessions		
No.	Title	Room
A1.8	Biology in Space	Yellow Hall 2
A2.7	Life and Physical Sciences under reduced Gravity	White Hall 1
A3.2C	Moon Exploration – Part 3	Space Hall 1
A6.6	Post Mission Disposal and Space Debris Removal 2 - SEM	Brown Hall 3
A6.10-E9.4	Space carrying capacity assessment and allocation	Brown Hall 1
B1.3	Earth Observation Sensors and Technology	Brown Hall 2
B3.9-GTS.2	Human Spaceflight Global Technical Session	Yellow Hall 1
B4.6A	Generic Technologies for Small/Micro Platforms	Space Hall 2
B6.3	Mission Operations, Validation, Simulation and Training	Green Hall 2
C1.5	Guidance, Navigation & Control (3)	Blue Hall 2
C2.9	Smart Materials and Adaptive Structures & Specialized Technologies, Including Nanotechnology	Orange Hall 1
C2.10	CATEGORY C "TECHNOLOGY" - Extra Session	Green Hall 3
C3.4	Space Power Systems for Ambitious Missions	Space Hall 3
C4.10-C3.5	Joint Session on Nuclear Power and Propulsion Systems, and Propellantless Propulsion	Blue Hall 1
D1.7	Lessons Learned in Space Systems	Orange Hall 3
D2.9-D6.2	Sustainable Approaches and Impact of Space Transportation Solutions on Earth + Space Environment and on General Safety	White Hall 2
D3.3	Space Technology and System Management Practices and Tools	Turquoise Hall 1
D6.2-D2.9	Sustainable Approaches and Impact of Space Transportation Solutions on Earth + Space Environment and on General Safety	White Hall 2
E1.9	Space Culture: New Processes of Public Engagement in Space through Culture and Art	Green Hall 1
E5.6	Simulating Space Habitation: Habitats, Design and Simulation Missions	Turquoise Hall 2
E8.1	Multilingual Astronautical Terminology	Orange Hall 2
E10.2	Informing Planetary Defense	Space Hall 4

3 Keynote Speakers

Monday 14 October

Keynotes

A7.	IAF SYMPOSIUM ON ONGOING AND NEAR FUTURE SPACE ASTRONOMY AND SOLAR-SYSTEM SCIENCE MISSIONS	Date	Time	Room
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Session: 1. Space Astronomy Missions, Strategies and Plans

14.10.2024

15:30

Yellow Hall 3

Roberto BATTISTON

Professor,

University of Trento, Department of Physics, National PhD in Space Science and Technology
Italy

KEYNOTE: A7.1 Earth orbiting small satellites constellations: towards using the Earth surrounding layers as giant detectors for astro and geo sciences from space

Abstract

Remote sensing using large constellation of small satellites is developing at fast space: the advantages of a fast revisiting time and of coherent multiple observations are outpacing, in a growing number of cases the services provided by individual large satellites equipped by most advanced detectors. Ground-space cooperation among networks of detectors and payloads adds even more potential for monitoring and discovery. We will review a few examples extending from geophysics, to solar physics, to cosmic ray physics, to astrophysics, some already ongoing, some planned as well as future concepts and ideas.

B1.	IAF EARTH OBSERVATION SYMPOSIUM	Date	Time	Room
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Session: 1. International Cooperation and Business Ventures in Earth Observations

14.10.2024

15:30

Space Hall 3

Hironori MAEJIMA

Director,

Satellite Applications and Operations Center (SAOC), Space Technology Directorate, Japan Aerospace Exploration Agency (JAXA)
Japan

KEYNOTE: B1.1 Committee on Earth Observation Satellites in 2024: Climate and Biodiversity in Focus

Abstract

CEOS ensures international coordination of civil space-based Earth observation programmes and promotes exchange of data to optimize societal benefit and inform decision-making for a prosperous and sustainable future for humankind. Commemorating its 40th year in 2024, CEOS today consists of 34 Members and 30 Associates and substantively advances space-based Earth observation efforts that no one country can do alone. As the challenges affecting the planet become more pronounced, more frequent, and more acute, this international cooperation continues to elevate societal benefits at multiple scales. The CEOS Strategic Implementation Chair from the Japan Aerospace Exploration (JAXA) will highlight the key initiatives undertaken in 2024 around two main priorities Climate and Biodiversity.

D2.	IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM	Date	Time	Room
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Session: 1. Launch Vehicles in Service or in Development

14.10.2024

15:30

White Hall 2

Tory BRUNO

President & CEO, United Launch Alliance LLC
United States

KEYNOTE: D2.1 Development of the Vulcan Launch System

Abstract

United Launch Alliance's next generation Vulcan rocket successfully entered into service with its inaugural launch on Jan. 8, 2024. Vulcan was developed to address a diverse set of missions in support of national security, civil exploration, and the commercial marketplace. It builds upon ULA's decades of experience operating the Atlas and Delta families of launch vehicles. Vulcan offers medium to heavy lift performance to destinations ranging from low earth orbit (LEO), direct inject to geostationary orbit (GSO), and interplanetary trajectories. A key challenge in developing Vulcan was selecting a system architecture and leveraging the latest technologies to support this wide range of missions with a single basic launch vehicle configuration. The detailed design in support of this architecture was refined over multiple iterations to maximize system performance and streamline operations, thereby maximizing the value provided with the launch service. The resultant vehicle relies upon a common single core, two stage architecture for all missions. Booster performance is adjusted to meet mission requirements with the addition of solid rocket boosters as needed, and a modular payload fairing design accommodates a range of volumetric requirements driven by the payloads. A cryogenic (LO2/LH2) upper stage is key to Vulcan's high energy architecture, providing the efficiency and endurance necessary to reach the most challenging orbits beyond LEO.

D4.	22nd IAA SYMPOSIUM ON VISIONS AND STRATEGIES FOR THE FUTURE	Date	Time	Room
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Session: 1. Innovative Concepts and Technologies

14.10.2024

15:30

Turquoise Hall 1

David HOMFRAY
CTO, Space Solar UK
United Kingdom

KEYNOTE: D4.1 Advancing In-Orbit Robotic Assembly and Disassembly of High-Value Infrastructures using End-Over-End Walking Manipulators

Abstract

Despite the ongoing efforts to achieve a carbon-neutral economy by 2050, the global dependency on conventional fossil fuels is growing. Further innovations in clean energy technologies, including hydro, solar, wind, fission, biofuel, and emerging fusion technology, will help address the energy transition. However, variable wind and solar renewables will dominate and need sources of storage or dispatchable energy generation that do not currently exist at scale. Space-based power generation and transmission are economically and technically feasible, offering weather-independent energy to enhance reliability and decrease costs in our future energy systems.

There is a growing interest in testing and commercializing continent-scale Space-Based Solar Power (SBSP) generation and transmission. However, setting up complex orbital infrastructure and associated logistics of the orbital power station is still immature technology. Advancements in Robotics, Automation, and AI are key to making the SBSP station a worldwide endeavor to address growing energy demands on Earth and mitigate the risks of climate change. Likewise, robotics innovation is key to allowing in-orbit assembly of the modular Large Aperture Space Telescope (LAST), significantly larger than the Hubble Space Telescope and the James Webb Telescope, for astronomical observations.

This paper focuses on orbital green energy, sustainability, and space exploration through robotic intervention. It presents the next generation of innovative dexterous walking robotic manipulators - the End-Over-End Walking Manipulator (E-Walker) - suitable for various orbital infrastructure assembly and disassembly missions. The Mission Concept of Operations (ConOps) demonstrates the assembly of a 25m SBSP satellite and a 25m aperture primary mirror of a LAST using multiple E-Walkers. The E-Walker technology showcases the potential of collaborative robotic systems for in-space construction, utilizing innovative assembly algorithms within a microgravity simulation environment using ROS2/Isaac Sim. Furthermore, the disassembly algorithms showcase an innovative methodology to efficiently replace defective modules onboard the SBSP satellite and LAST.

The mission ConOps presented can be further extended for future maintenance and decommissioning of orbital infrastructures, minimizing the need for several extravehicular activities. This pioneering research advances space assembly technologies and paves the way for sustainable maintenance practices in future in-orbit robotic missions supporting a range of in-space servicing, manufacturing, and decommissioning operations. The E-Walker technology is also applicable for constructing space-based polar shields to slow the melt rate of the polar ice caps, thereby offering mitigation effects to save wildlife and help safeguard coastal cities, communities, and low-lying islands.

E7.	IISL COLLOQUIUM ON THE LAW OF OUTER SPACE	Date	Time	Room
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Session: 1. Young Scholars Session with Keynote Lecture

14.10.2024

15:30

Green Hall 3

Diane HOWARD
United States

KEYNOTE: E7.1 The Complexity of Change: Some Legal and Policy Implications

Abstract

The Nandasiri Jasentuliyana Keynote is an opportunity to take stock of where we were, where we are, and whether that last is where we want to be. Continuing this tradition, this year's talk will examine some of the overlapping equities and interests associated with issues confronting our space law community today.

Tuesday 15 October

A3.	IAF SPACE EXPLORATION SYMPOSIUM	Date	Time	Room
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Session: 2A. Moon Exploration – Part 1

15.10.2024

10:15

Space Hall 1

D. GOWRISANKAR

Director,

Office International & Interagency Cooperation (OIIC), Indian Space Research Organisation (ISRO)
India

KEYNOTE: A3.2A Science Findings from Chandrayaan-3 In-Situ Observations

Abstract

The historic soft-landing of Chandrayaan-3 in the southern high latitudes on the Moon marked the beginning of in-situ investigations for the science payloads onboard the Vikram Lander and Pragyaan Rover. Salient results from the science payloads, which are deployed and operated in the unexplored terrain are as follows.

- Instrument for Lunar Seismic Activity (ILSA) recorded around 50 uncorrelated events, lasting for few seconds, and containing high frequency components in the order of few tens of Hz. The source could be micrometeorites impacts near to the lander or thermal effects on the terrain. Continuous measurements over one lunar day indicates that polar latitudes are not seismically quiet and hence provides crucial input for building lunar habitats in the polar region.
- Chandra's Surface Thermophysical Experiment (ChaSTE) probe was inserted in the lunar regolith to the depth of 141mm for studying the temperature profile. Active heating experiments were done at ~80mm depth and the thermal conductivity is estimated. The numerical modelling and estimation of thermal conductivity using empirical model on ground, corroborate the in-situ measurements.
- The electron density & electron temperature and their temporal evolution are derived from the RAMBHA- Langmuir Probe observations. The temporal variation of electron density is modelled using the Space Physics Laboratory's Lunar Ionospheric model (LIM). The findings unravel the role of solar/magnetospheric wind charge exchange process in the relation to the photo ionization process in modulating the temporal evolution of lunar ionosphere.
- The Alpha Particle X-ray Spectrometer (APXS) measured the elemental abundances at total 23 locations along the ~100 m traverse of the Pragyaan rover. The measured APXS data do not show any statistically significant variation, which indicates a chemically uniform local lunar terrain composed primarily of ferroan anorthosite (FAN). Similar composition was derived from Apollo 16 and Luna 20, thus supporting the Lunar Magma Ocean hypothesis.
- Laser Induced Breakdown Spectroscopy (LIBS) measurements indicate that the lunar polar terrain is dominated by the oxides of Fe, Ti, Al, Ca, Si followed by Cr, Mn. Hence the presence of minerals such as Ilmenite, Anorthosite and Triolite are anticipated.
- Spectro-polarimetry of HABitable Planet Earth (SHAPE) observed the Earth from the lunar orbital platform, for two months. The spectra show the presence of Oxygen, water vapour and Carbon-di-oxide, indicating a planet which is habitable for the life as we know it.

These observations provide new insights for future polar exploration missions in addition to ground truth to the remote sensing measurements done so far, by Chandrayaan-1, Chandrayaan-2 and other international missions. The scientific relevance, observations, results, and its significance for lunar polar exploration will be presented in this paper.

A4.	53rd IAA SYMPOSIUM ON THE SEARCH FOR EXTRATERRESTRIAL INTELLIGENCE (SETI) – The Next Steps	Date	Time	Room
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Session: 1. SETI 1: SETI Science and Technology

15.10.2024

10:15

White Hall 1

Daniel CZECH

Senior Researcher,
University of Oxford
United Kingdom

KEYNOTE: A4.1 “Pesek Lecture” - Early Results from Breakthrough Listen’s Automated Commensal Technosignature Survey at MeerKAT

Abstract

Radio telescope arrays are increasingly built to offer commensal access, via Ethernet, to the data they produce. The MeerKAT radio telescope in South Africa provides access to a wide range of components, from each antenna’s digitiser to the main F-engine. It supports a number of commensal User Supplied Equipment (USE) systems in a colocated RFI-shielded datacenter. Breakthrough Listen has built a powerful USE system (BLUSE) to conduct an automated commensal SETI survey at MeerKAT, processing the full available bandwidth for all antennas. Its primary mode of operation is to upchannelise the incoming F-engine data to ~ 1 Hz resolution, synthesize coherent beams on objects of interest, and search the resultant data for evidence of technosignatures. Over the past two years, BLUSE has processed data from coherent beams synthesized on approximately half a million individual pointings.

In this talk, we present scientific results and analysis of two years of automated commensal observing. We discuss the technical evolution of BLUSE over this time period, examining challenges faced and addressed early on. We also describe ancillary projects and alternative SETI survey approaches conducted alongside the primary mode of operation. Finally, we discuss areas of ongoing research and development.

A1.	IAF/IAA SPACE LIFE SCIENCES SYMPOSIUM	Date	Time	Room
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Session: 3. Medical Care for Humans in Space

15.10.2024

15:00

Yellow Hall 2

Jack LIM

Head of New Portfolio Investment (NPI) Group,
Boryung
Republic of Korea

KEYNOTE: A1.3 Humans In Space - Multi-planetary Life Enabler

Abstract

Humans In Space (HIS) is a global initiative led by Boryung to identify and solve Space Healthcare challenges by bringing together researchers, entrepreneurs, institutions, and corporations to address critical healthcare challenges for extended human presence in space and to improve healthcare on Earth through space-based innovations. This presentation aims to introduce the HIS Ecosystem and the benefits and opportunities it can provide to the Researchers attending the IAF/IAA Space Life Science Symposium, by highlighting ways to utilize HIS platform to facilitate not only on-ground, but also in-space research opportunities.

HIS categorizes space healthcare into two domains: 1) Critical Problems in Space and 2) Critical Problems on Earth. The first domain focuses on identifying and addressing health risks faced by astronauts, such as neurological, dermatological, respiratory, cardiovascular, immunological, renal, and musculoskeletal issues caused by prolonged microgravity or radiation exposure. The second domain explores how the space environment can be leveraged to address critical health challenges on Earth through research on molecular processes, radiation exposure, microbial systems, disease modeling, and manufacturing techniques like crystallization and tissue engineering. Each year, HIS identifies specific healthcare challenges with input from leading space agencies, including NASA HRP, ISSNL, and ESA.

Humans In Space Ecosystem presents a comprehensive value chain that strategically invests in and supports the development of space healthcare solutions, from the ideation process to actual implementation and commercialization. Through our annual Humans In Space Challenge, a global space healthcare challenge, Boryung invests in startups and researchers that develop critical technologies related to space healthcare. In our 1st and 2nd year, HIS has invested in 13 Startups, across different topics such as Bio R&D Platform, Human Health Journey and Molecular & Therapeutics and has awarded grants to five Researchers, focused in areas such as Cognitive, Immune, and Musculoskeletal problems related to space exploration. To name a few, HIS portfolio includes a Space Balance Impairment Treatment Company (Neursantys) and In-Space Artificial Retina Manufacturing Company (LambdaVision).

Through its investment, HIS aims to facilitate and enable on-orbit experiment of the Awardee’s research, and to circulate data and lesson-learned within its platform to foster greater collaboration in the Space Healthcare sector. HIS offers a Two Track Funding Model – the first track is our Equity Investment model and our second track is called the Orbital Launch Funding R&D Investment model that partially funds preparation and launch of research, through our extensive platform and implementation partners.

A4.	53rd IAA SYMPOSIUM ON THE SEARCH FOR EXTRATERRESTRIAL INTELLIGENCE (SETI) – The Next Steps	Date	Time	Room
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Session: SETI 2: SETI and Society

15.10.2024

15:00

White Hall 1

Daniela DE PAULIS

Artist,
SETI Institute
United States

KEYNOTE: A4.2 “Billingham Cutting-Edge Lecture” - Global outreach and cultural impact of A Sign in Space, an interdisciplinary simulation of a First Contact scenario

Abstract

On 24 May 2023, a simulated extraterrestrial message was transmitted towards Earth by the Trace Gas Orbiter, a Mars orbiter of the European Space Agency. The signal was received by the Green Bank Telescope and the Allen Telescope Array in the USA and by the Medicina Radio Antenna in Italy. The event was part of the interdisciplinary project A Sign in Space and was streamed live by the SETI Institute, with thousands of people watching in real time. A Sign in Space started in late 2018 and was developed in collaboration with researchers at the Green Bank Observatory, the Italian National Institute for Astrophysics (INAF), the SETI Institute, and the European Space Agency over a period of four years. The project simulates one of the possible scenarios following the reception of a confirmed radio signal from an extraterrestrial civilization. In the scenario envisioned in the project, scientists release the data of the signal in the public domain, asking people from around the world to decode and interpret its content. A Sign in Space stages one of the possibly most radical events, in which humankind attempts to create meanings around a message crafted by an extraterrestrial intelligence. Since the release of the signal data in the public domain on 25 May 2023, an international community of enthusiasts has been attempting to decode and assign meanings to the message designed for the project. Over the past months, hundreds of interpretations have been proposed and thousands of social media posts have been created in the ongoing decoding effort. The global outreach of the project has been supported by workshops facilitated by the SETI Institute, and featuring various perspectives on SETI research from around the world, including those from aboriginal communities, from the Arab countries, from China and South America. A Sign in Space reached millions of people from 175 countries, through a global media coverage and various social media channels. After one year since its public launch, Daniela de Paulis, the project's founder and director, is assessing the preliminary media and cultural impact of the work and its potential benefits for SETI research.

C4.	IAF SPACE PROPULSION SYMPOSIUM	Date	Time	Room
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Session: 5. Electric Propulsion (1)

15.10.2024

15:00

Blue Hall 1

Giorgio SACCOCCIA

Senior Advisor to Director General
European Space Agency (ESA)
France



Angelo CERVONE

Associate Professor
Aerospace Engineering Faculty, Delft University of Technology
Italy

KEYNOTE: C4.5 A LIFETIME WORTH OF SPACE: IN MEMORY OF PROF. MARIANO ANDRENUCCI

Abstract

In March 2024, we all received the sad news that Prof. Mariano Andreucci passed away. Prof. Andreucci has always been very active within the IAF community. He has been member of the Space Propulsion Technical Committee for many years and, in this role, has given invaluable contributions to the propulsion sessions for many editions of the IAC. He was a true pillar of the electric propulsion community, and one of the early initiators of the research and development activities in Europe in the field. And even more important, he has represented an inspirational figure for many generations of propulsion engineers.

This keynote will honour the memory of Prof. Andreucci by highlighting his immense heritage, both personal and professional, and his crucial role in the last 50 years of space propulsion research. Several speakers will contribute to the keynote, who all had the privilege of working with Prof. Andreucci, as a colleague and as a mentor. After an introduction from Angelo Cervone (current chair of the Space Propulsion Technical Committee), presentations will be given by Giorgio Saccoccia (European Space Agency, former chair of the Committee) and by Prof. Luca d'Agostino and/or Prof. Fabrizio Paganucci, who worked with Prof. Andreucci at the University of Pisa and founded with him the company Alta S.p.A., one of the first successful electric propulsion startups in Italy and Europe.

D2.	IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM	Date	Time	Room
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Session: 2. Launch Services, Missions, Operations, and Facilities

15.10.2024

15:00

White Hall 2

Andrea JAIME ALBALAT

Business Developer

Isar Aerospace Technologies GmbH
Germany

KEYNOTE: D2.2 How ISAR scales rocket production

Abstract

Isar Aerospace SE (ISAR) offers a new flexible and cost-efficient launch service using “Spectrum,” its in-house developed launch vehicle. It was founded in 2018 in Germany, as one of the first fully commercial European launch service providers. Today, with more than 400 employees and being the most capitalized independent New Space company in Europe with a total of more than 400M€ from private investments, is getting ready to its imminent maiden test launch.

Since its foundation, ISAR has built from scratch all the necessary infrastructure and business to offer such service: from engineering design and manufacturing of the entire launch vehicle, including its engines, in Germany, up to building and operating its own testing facilities in Sweden, as well as building its own launch pad in Norway. ISAR follows a vertically integrated approach, enabling them full control of production and cost, with clear vision on scaling up rocket production.

In this keynote, ISAR will present their production philosophy and how setting up its business and in particular its automated manufacturing production processes is enabling them to offer a very competitive service in the international market, a pioneering way of building rockets in Europe.

D4.	22nd IAA SYMPOSIUM ON VISIONS AND STRATEGIES FOR THE FUTURE	Date	Time	Room
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Session: 3. Modern Day Space Elevator Transformational Strengths and their Applications

15.10.2024

15:00

Turquoise
Hall 1

Peter SWAN

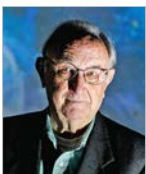
President, International Space Elevator Consortium
United States

KEYNOTE: D4.3 “Jerome Pearson Memorial Lecture” - Space Elevator Apex Anchor Initial Research

Abstract

Apex Anchors are the highest location on space elevators. They provide stability as the “sea anchor” and a location for so much more (100,000 km altitude). The International Space Elevator Consortium (ISEC) kicked off a research study to assess the characteristics and capabilities of this space station “extraordinaire,” circa 2042. This location and the ability to raise mass to it by electricity [a green road to space] enables unique missions and the ability to release spacecraft at extremely high velocities going to Cislunar and beyond. The initial definition of the Apex Anchor focused upon the 7.76 km/sec release velocities with the ability to reach the Moon in 14 hours and Mars as quickly as 61 days. Current concepts are leading towards unique characteristics and potential missions resulting from further analyses such as storage, assembly, and refueling. These capabilities lead to mission enabling capabilities for planetary defense, observation, navigation, communication, and as a “truck stop in space.” These concepts for the Modern-Day Space Elevator are being refined and explained so that, as Space Elevators mature, customers can plan on unique and powerful operational capabilities in the 2038+ time period.

E1.	IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM	Date	Time	Room
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Session: 3. On Track: Undergraduate Space Education

15.10.2024

15:00

Green Hall 1

Robert TWIGGS

Emeritus Professor, Astronautics, Morehead State University
United States

KEYNOTE: E1.3 Four Decades of Educational Satellites: How to Run Student Space Programs

Abstract

As someone who has continually worked on academic small satellites since 1982, Prof. Twiggs has been known as the “Father of the CubeSat” as the co-developer, alongside Prof. Jordi Puig-Suari, of the CubeSat reference design and P-Pod Deployer for miniaturized satellites which has become the de-facto Industry Standard for smallsats with over 2,200 launched since 1998. Alongside the CubeSat, he was responsible for co-developing and promoting other original concepts such as the CricketSat, CanSat, ThinSat and the PocketQub for educational applications in space. Prof. Twiggs will provide a historical perspective of the development of the CubeSat concept and how it has found its place in the satellite community.

Wednesday 16 October

B1.	IAF EARTH OBSERVATION SYMPOSIUM	Date	Time	Room
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Session: 8. IAF EARTH OBSERVATION SYMPOSIUM - Extra Session

16.10.2024

10:15

Space Hall 3

Maria Fabrizia BUONGIORNO

Director of Technological Research,
National Institute of Geophysics and Volcanology (INGV)
Italy

KEYNOTE: B1.8 INGV center for space observations of earth (COS): the peos ict-platform to manage integrated space products to monitor and mitigate natural hazards

Abstract

INGV has actively contributed in the last 30 years to the development of space technologies both in the Earth Observation sector (including all available Optical and SAR imaging systems) and in the Global Navigation Satellite Systems (GNSS) sector allowing the INGV to play a role of excellence both for the study of satellite missions and for the development and supply of operational products for end-users. INGV has also laboratories with specific competences in developing instruments for the control and telemetry of stratospheric balloons, acquiring airborne data using UAVs both for local monitoring purposes and to test new sensors which could be selected for future space missions and provide Calibration/validation data for Space observations. In 2020 INGV established the Center for Space Observations of Earth (COS) with the aim to coordinate the INGV activities in the Space and Aerospace sector. The COS contributes to the strategy of INGV Departments, namely Environment, Earthquakes and Volcanoes, and the INGV Sections / Observatories by adding specific products and services based on space observations to assist monitoring, surveillance, research and services for the society regarding Earth processes. The COS, represents INGV in working groups which in the last years have defined the National Space Policy, in particular those represented in the COMINT (Interministerial Committee for policies relating to space and aerospace) and in the National User Forum, it also represents INGV in National and International Committees with Space Agencies and United Nations. In 2021 COS started the implementation of a suitable infrastructure to development specific processing chains for EO and Space Weather product to support scientific activities and services in Earth Science. In 2022 the National Recovery and Resilience Plan (PNRR) offered specific funding for the Space Sector which will permit to build, in the next 3 years, both the COS infrastructures (ICT platform) and new research activities to further develop the COS modules, as well as reinforce the cooperation with industrial partners by to provide a series of complementary activities which could improve the national expertise and technological transfer in with a consequent advantage for all the space sector chain.

C1.	IAF ASTRODYNAMICS SYMPOSIUM	Date	Time	Room
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Session: 9. Orbital Dynamics (2)

16.10.2024

10:15

Blue Hall 2

Amalia ERCOLI-FINZI

Honorary Professor,
Politecnico di Milano
Italy

KEYNOTE: C1.9 Breakwell Lecture - Unique Orbits for Unique Space Missions

Abstract

Orbits described by satellites and space probes serve the task that the latter are called upon to carry out. In many cases those orbits' design is simple, but sometimes it requires tackling extraordinary challenges. This is the case of the orbits described by the probes intended for the solar system exploration, in particular for planetary exploration, which, in the absence of adequate launch thrust, sufficient to get to those celestial bodies far from the Sun, are forced to perform a series of planets' flybys, like cosmic marbles. This turns into long transfers and enormous distances, which entail survivability issues for on board equipment and difficulties in communications, problems which we contribute overcoming by exploiting Astrodynamics in its broadest sense.

C4.	IAF SPACE PROPULSION SYMPOSIUM	Date	Time	Room
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Session: 4. Solid and Hybrid Propulsion (2)

16.10.2024

10:15

Yellow Hall 2

Ozan KARA

Senior Researcher

Propulsion and Space, Technology Innovation Institute
United Arab Emirates

KEYNOTE: C4.4 Hybrid Propulsion System Practices and Safety Considerations both for Launch Vehicles and In-Space Missions

Abstract

Advances in rocket technologies using new manufacturing techniques and cost effective/safe propulsion systems unlock the potential of hybrid rockets to be used in both launch vehicles and in-space missions. In addition, safety aspects and functionality of the hybrid rocket motors are also designed for the Moon or Mars Ascent Vehicle concepts using in-situ resources by practitioners in the field. Therefore, the objective of this keynote is to summarize engineering practices of hybrid rocket motor combustion, manufacturing and applications such as launch vehicle systems, Mars Ascent Vehicle concept using carbon dioxide as the oxidizer and the in-space missions for deep space exploration. Furthermore, this keynote will provide insight of safety considerations of the propellant manufacturing, handling and launch operations. Engineering practices of the hybrid motors include following topics, (i) oxidizer handling and safety issues, (ii) internal ballistics improvements using mixing devices, (iii) propellant manufacturing and additives and (iv) nozzle erosion for high burn time applications. Oxidizer handling will focus on liquid oxygen (cryogenic) and nitrous oxide. Mixing devices using silico phenolic material will be emphasized. Metal powder addition to the paraffin-based fuels are the topic of the propellant manufacturing. Nozzle materials and prevention of erosion rate is another topic of this keynote for burn times over 100 seconds. Mission practices will be explained using current literature for the Mars/Moon exploration using in-situ resources such as Metal/CO₂ combustion results. Also, mission practices will cover how to develop an effective sounding rocket using hybrid propulsion system to reduce the cost. Defense applications for super-sonic drone is another topic that will be mentioned. This keynote will also summarize 'global projects with hybrid rockets' to create better understanding of existing and future missions by various of countries, governments and the private sectors.

E3.	37th IAA SYMPOSIUM ON SPACE POLICY, REGULATIONS AND ECONOMICS	Date	Time	Room
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Session: 3. Space Economy Session – A Focus on Space Sustainable Operations and the Role of Governments I To Stimulate Sustainable Economic Development for Both In Space and On Earth.

16.10.2024

10:15

Brown Hall 2

Pawan GOENKA

Chairman

Indian National Space Promotion and Authorization Centre (IN-SPACe), Department of Space, Government of India
India

KEYNOTE: E3.3 Expanding the Horizons of Indian Commercial Space Sector through Policy, Regulation and Collaboration

Abstract

This keynote will discuss the Indian Space Sector reforms and its impact in enhancing India's space ambitions. India's space sector is undergoing an exciting transformation. The operationalization of the Indian National Space Promotion and Authorization Centre (IN-SPACe) as a Regulator and Promoter of Space activities in 2022 opened the doors for an inclusive participation of private sector in the national Space Sector. This was followed by a comprehensive Indian space policy and most recently, a liberalized Foreign Direct Investment (FDI) policy offering automatic approval for investments up to 49% in launch vehicles, 74% in Satellites and 100% in subsystem manufacturing. The relaxed FDI norms provide a clear and flexible investment framework, making India an attractive destination for global investors. A National Space Act is also being worked out with an aim to bring in a wholistic legislative framework to the Indian space sector. Such robust policy certainty measures and follow-up efforts like the release of a Norms, Guidelines and Policy Documentation for the Authorization of Space Sector activities, Transfer of Commercial ready ISRO Technologies to the Private Sector including Small Satellite Launch Vehicle built by Indian Space Research Organization, initiating the setting up of a new launch port for Small Launch Vehicles, announcing the setting up of an US \$125 Million, VC fund for Space Start-ups by Government and an Earth Observation Satellite Constellation with Ground segment exclusively set by the Private sector in a Public-Private Partnership Model etc have undoubtedly setup a very spring board for the Indian Space economy to expand and grow. IN-SPACe has released a Decadal Vision and Strategy for the Indian Space Sector, where an aspirational economic value of US \$44 Billion in the next 10 years has been estimated.

These reform exercises have been very enthusiastically received by the Private Sector. IN-SPACe has received over 500 proposals and over 700 Space Organizations registered with it, in the last couple of years.

ISRO over the years, while leading exemplary programs like the Chandrayaan-3, Mangalyaan etc, has also established a very robust private vendor ecosystem consisting of thousands of suppliers who have been playing a very significant role in all such national programs. The knowledge and adherence to space process standards coupled with IN-SPACe led policy reforms are expected to enhance the opportunities for this vendor ecosystem in India and help position the country as a Manufacturing hub for Space Activities.

International cooperation is a cornerstone of India's space program. This keynote will outline strategies for forging sustainable alliances with global space players.

E6.	IAF BUSINESSES AND INNOVATION SYMPOSIUM	Date	Time	Room
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Session: 2. Public-Private Partnerships: Traditional and New Space Applications

16.10.2024

10:15

Brown Hall 1

Angel ABBUD-MADRID

Director

Space Resources Program, Colorado School of Mines
United States



Nancy WOLFSON

American Institute of Aeronautics and Astronautics (AIAA)
United States

KEYNOTE: E6.2 From Space Rocks and Asteroids to Fuel: The Potential of Space Resources to Enable Future Exploration and the New Space Economy

Abstract

Join our Keynote Speakers at the IAC Milan, Italy, 2024, for a session on space resource utilization! Space resources refer to natural physical materials and substances found in space and on celestial bodies such as asteroids, comets, the Moon, and other planets. The session will also explore solutions regarding artificial resources from space debris. Dr. Angel Abbud-Madrid, Director of the Center for Space Resources at the Colorado School of Mines, will discuss the potential of space resources to provide necessary raw materials, fuel, and resources for space operations and how these resources could facilitate new commercial activities that can help sustain space ventures in the long term. Nancy C. Wolfson, Chair of the IAF-SEIC, will discuss the new IAF-SEIC research project on designing an entity model after the UN-ITU for Space Resources. She will also explore concepts of asteroid mining and will include concepts on orbital debris problems and potential solutions. The session will conclude with an interactive Q&A/Poll.

C2.	IAF MATERIALS AND STRUCTURES SYMPOSIUM	Date	Time	Room
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Session: 5. Space Structures and Materials for Extreme Environment (High-temperature and cryogenic-temperature applications including thermal insulation concepts)

16.10.2024

15:00

Orange Hall 1

Raymond G. CLINTON JR.

Associate Director,

Science and Technology Office, National Aeronautics and Space Administration (NASA)
United States

KEYNOTE: C2.5 PAOLO SANTINI MEMORIAL LECTURE - In Space Manufacturing and Extraterrestrial Construction - How Did We Get Here? - Where Are We? - Where Should We Be Going? - THE CHALLENGE: Will We Be Ready?

Abstract

NASA has held multiple workshops and sought inputs from a broad spectrum of sources, including international partners, other space agencies, industry, large and small businesses, academia, and private citizens to develop its Moon to Mars Strategy and Objectives. The goals and objectives set forth in the resulting documents are "designed to achieve the vision to create a blueprint for sustained human presence and exploration throughout the solar system." The objectives were categorized into four distinct tracks: Operations, Infrastructure, Transportation and Habitation, and Science. In addition, common themes across the objectives were captured under Recurring Tenets. Within the Infrastructure category, several objectives directly address the need for manufacturing and construction on the lunar surface to support continuous human lunar presence and a robust lunar economy. In exploring the vision for creation of on-demand infrastructure on the lunar surface and beyond, this presentation will examine the development of these capabilities, starting in the late 1990's and early 2000's, up to the current state, and offer a perspective on the challenges facing operational implementation of these technologies. In the early 2000's, the destination was the Moon. The International Space Station (ISS) was to be the test bed for demonstration of in space manufacturing technologies. Additive construction was in its infancy. These pioneering initiatives, having begun primarily under NASA's Office of Biological and Physical Research In Situ Fabrication and Repair (ISFAR) Project, were short-lived. It was not until the early 2010's that in space manufacturing and later extraterrestrial construction experienced renewed interest and support. At this time, the destination was Mars. This period saw the initial in space additive manufacturing experiments on the ISS, creation of a roadmap for development of in space manufacturing technologies, and development of additive construction systems for terrestrial use at scale. The period also included NASA's 3D Printed Mars Habitat Centennial Challenge, which catalyzed interest in extraterrestrial construction. With NASA's announcement of the intention to return to the Moon, and the subsequent release of the Artemis Accords in 2020, and the commensurate Moon to Mars Strategy, NASA's Space Technology Mission Directorate initiated the Lunar Surface Innovation Initiative (LSII). The LSII has spurred technology development and maturation efforts across a spectrum of capabilities that would be needed to live on the lunar surface. The presentation will provide an overview of current technology developments in the areas of in space manufacturing and extraterrestrial construction. Looking forward from the current state, a perspective will be offered on capabilities that are still needed to "institutionalize" in space manufacturing and extraterrestrial construction to achieve the vision of NASA's Moon to Mars Strategy. Finally, a challenge will be posed to the community to accelerate the development of these capabilities. When the explorers of the future need these enabling capabilities, will they be ready?

Thursday 17 October

E1.	IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM	Date	Time	Room
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Session: 6. Calling Planet Earth: Large Engagement and Communications Initiatives

17.10.2024

10:15

Green Hall 1

Christina KORP

Founder, SPACE for a Better World
United States

KEYNOTE: E1.6 Connecting Space Curious to the Space Serious

Abstract

Space exploration isn't just about discovering new planets and galaxies, it's also about improving life on Earth. That's why Space for a Better World was formed - to show people how space benefits us in ways we might not even realize. But how do we get people interested in space exploration? By creating experiences and activations that highlight the awe and wonder of space, while also guiding people to real things that are happening in space. And who better to guide us than real NASA and ESA astronaut ambassadors, interacting with kids of all ages? These large-scale events and activations are making big waves outside the space ecosystem and inspiring people to pursue rewarding careers in space. Because it's not just about the scientists and engineers - we need people from all skill sets and backgrounds to help us achieve successful space missions in the future. We'll share how we connect the space curious to the space serious and inspire them to explore the wonders of space and unlock its potential for a better world.

B1.	IAF EARTH OBSERVATION SYMPOSIUM	Date	Time	Room
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Session: 6. Assessing and Mitigating the Global Freshwater Crisis

17.10.2024

15:00

Space Hall 3

Paul BATES

Professor,
University of Bristol
United Kingdom

KEYNOTE: B1.6 Coping with major societal hazards such as flooding due to a changing climate

Abstract

Climate change over the coming decades will be far reaching and will affect almost every aspect of our lives from food production, health, the economy to the environment. At the same time a growing global population that is increasingly urbanized and interconnected is making society more vulnerable and less resilient. There is also good evidence that climate-related hazards hit those living in poverty the hardest. Reducing our exposure to current climate threats is a critical first step towards mitigating or adapting to future climate change. Current climate and its variability already pose very significant risks, of which flooding is a clear and impactful example.

Changes in global hydrological cycle has been linked to climate change based on observations collected over the past few decades. Intensifying climate changes affecting river systems lead to an increased risk for flooding and droughts and creates overall stress to the global water resources. Significant advancement has been made to better understand, forecast, and mitigate threats have been made. The sophistication of hydrological analysis and models has developed rapidly with new data and increased computational power but there many gaps remain to be pursued to fully employ this knowledge for improved planning and decision making for mitigating this crisis. Promoting and enabling international cooperation is key towards tackling this global problem.

B2.	IAF SPACE COMMUNICATIONS AND NAVIGATION SYMPOSIUM	Date	Time	Room
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Session: 5. Extra-Terrestrial and Interplanetary Communications, and Regulations

17.10.2024

15:00

Orange Hall 2

Sami ASMAR

NASA DSN Network Manager,
NASA Jet Propulsion Laboratory (JPL)
United States

KEYNOTE: B2.5 International Collaborative Ground Stations Support in the Moon-to-Mars Era

Abstract

The global lunar exploration will ramp up to include numerous flight assets that require simultaneous Direct-With-Earth communications, as outlined in several proposed system architectures. NASA's ground networks will not be sufficient to meet the demand for support especially when crewed missions also require redundancy for human safety. NASA has been exploring collaboration with many partner space agencies with current or planned ground stations towards providing a global network to achieve the common exploration and scientific objectives in the Moon-to-Mars era.

C2.	IAF MATERIALS AND STRUCTURES SYMPOSIUM	Date	Time	Room
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Session: 7. Manufacturing and industrialization for Launch Vehicle and Space Vehicle Structures and components (High volume production, industrialization, automatization and digitalization)

17.10.2024

15:00

Orange Hall 1

Jean Mathieu GUIMARD

Head,

"Prepare the Future" Department, Industrial Directorate, ArianeGroup SAS
France

KEYNOTE: C2.7 Automation and digitalization for Advanced manufacturing and launchers industrialization

Abstract

This presentation explores the new challenges and solutions of industrialization within the launcher industry, where the seamless integration of digitalization, automation versatility, and artificial intelligence (AI) is propelling a new era of efficiency, reliability, and innovation. The convergence of these technologies is reshaping the design, manufacturing, and operation of launch vehicles, promising to redefine the capabilities and economics of accessing space in a harsh competition. Key focal points of the presentation include:

- (1) Digital Twin Technology for Launcher Design: Examining how digital twin technologies are reshaping the design, prototyping phases and manufacturing of launch vehicles, enabling real-time simulations, optimization, and rapid iterations for enhanced performance and reliability.
- (2) Automated Manufacturing Processes: Investigating the versatility of automation in launcher manufacturing, from precision machining and additive manufacturing to assembly and quality control, showcasing how automation is streamlining production processes and ensuring consistency in component fabrication.
- (3) Predictive Maintenance and Fault Diagnosis: Exploring how AI-driven predictive maintenance models are minimizing downtime, extending launcher lifespans, and improving overall reliability by anticipating and addressing potential issues before they impact launch schedules.
- (4) Supply Chain Optimization through Digitalization: Discussing how digitalization is optimizing supply chains by enhancing communication, tracking, and coordination among suppliers, reducing lead times, and improving overall supply chain resilience. The presentation aims to provide the evolution of the industrialization of launcher production with valuable insights into the transformative potential of digitalization, automation versatility, and artificial intelligence.

E10.	IAF SYMPOSIUM ON PLANETARY DEFENSE AND NEAR-EARTH OBJECTS	Date	Time	Room
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Session: 1. Planetary Defense from Asteroids and Comets

17.10.2024

15:00

Green Hall 3

Nancy CHABOT

Scientist

The Johns Hopkins University Applied Physics Laboratory
United States

KEYNOTE: E10.1 A Mission to Demonstrate Rapid-Response Flyby Reconnaissance for Planetary Defense

Abstract

The 2023 U.S. Decadal Survey for Planetary Science and Astrobiology recommended that “the highest priority planetary defense demonstration mission to follow DART and NEO Surveyor should be a rapid-response, flyby reconnaissance mission targeted to a challenging NEO, representative of the population (~50-to-100 m in diameter) of objects posing the highest probability of a destructive Earth impact.” This recommendation followed a 2017 recommendation from the United-Nations-endorsed Space Mission Planning Advisory Group that identified a 50-m-diameter object as the smallest for which a reconnaissance mission is recommended, and in 2021, the same guidance was adopted in the United States Report on Near-Earth Object Impact Threat Emergency Protocols. A 50-m object impacts the Earth roughly every thousand years, more frequently than larger objects, and is capable of local devastation with the potential for regional effects. Even following the successful completion of NEO Surveyor operations, roughly half of the 50-m NEO population will be left undiscovered. As a result, 50-m impactors may not be found with long warning times, and a rapid-response flyby mission may be the only reconnaissance possible.

We have begun to use the high-level Decadal Survey recommendation to define the requirements for a planetary defense rapid-response flyby reconnaissance demonstration mission. As commonly noted in the community, in planetary defense, you don’t pick the asteroid – the asteroid picks you. Thus, a planetary defense flyby reconnaissance demonstration mission is not about just flying by an asteroid, but rather it is about developing a robust capability for the objects that are most likely to require a short-warning-time, space-based response to provide critical information to decision makers. We use this overarching motivation to define four major requirements:

1. Enable a flyby of >90% of the potential asteroid threat population.
2. Demonstrate the flyby reconnaissance for a ~50–100 m NEO.
3. Obtain the information needed to determine if and where the object would impact the Earth.
4. Determine key properties of the asteroid to inform decision makers.

Here we will share the driving requirements for the mission design, payload, and operations that are derived from these four overarching objectives. From this work, we anticipate that navigation may be one of the largest technical challenges for this concept, given the fast flyby speed, high approach solar phase angle, and small, potentially low-albedo, object. However, we don’t have the luxury of choosing the asteroid, so addressing this challenge is necessary to advance our planetary defense preparedness capabilities.

Friday 18 October

B6.	IAF SPACE OPERATIONS SYMPOSIUM	Date	Time	Room
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Session: 3. Mission Operations, Validation, Simulation and Training

18.10.2024

13:45

Green Hall 2

Massimiliano SAPONARA

Head, Guidance, Navigation and Control Section,
Thales Alenia Space Italia
Italy

KEYNOTE: B6.3 Euclid satellite on orbit commissioning

Abstract

Euclid is a space-based optical/near-infrared survey mission of the European Space Agency (ESA) designed to investigate the nature of dark energy, dark matter and gravity by observing their signatures on the geometry of the Universe and on the formation of large structures over cosmological timescales. It has been launched On July 1, 2023 on board Falcon 9 rocket and it is designed for 6 years of nominal survey operations to cover about one third of the entire sky. The Euclid Spacecraft is composed of a Service Module and a Payload Module. The Service Module hosts all sub systems and it was in particular designed to provide the extremely accurate pointing and thermal stability required by the scientific observations. The Payload Module adopted a 1.2 m three-mirror anastigmatic Korsch type telescope, with very high optical quality on a wide field-of-view, and it hosts the sensors of two scientific instruments, the visible imager and the near-infrared spectro-photometer. During a period of about 5 months after launch, all spacecraft functionalities were systematically tested by a joint team composed by ESA and Industry, in order to prove the on-orbit performance of all subsystems and to allow the start of routine operations. The largest part of the activities was devoted to the Attitude and Orbit Control Subsystem (AOCS), which embeds a Fine Guidance Sensor (FGS) and a cold-gas Micro Propulsion subsystem (MPS) necessary to achieve the stringent pointing requirements. Commissioning of the High Gain Antenna (HGA) and its control logic was also crucial to maximise the data-volume to be transferred to Ground, as well as the verification of the expected performance of the CCSDS File Delivery Protocol (CFDP), which allows to directly download the data files from the Mass Memory Unit (MMU). The decontamination, the cool down to operating temperature and the calibration of the telescope completed the preparation for the scientific operations. The paper will describe the commissioning approach and the measured results, which allowed to declare the satellite ready for scientific calibrations and later for nominal survey.

C4. & C3.	IAF SPACE PROPULSION SYMPOSIUM / IAF SPACE POWER SYMPOSIUM	Date	Time	Room
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Session: C4.10-C3.5. Joint Session on Nuclear Power and Propulsion Systems, and Propellantless Propulsion

18.10.2024

13:45

Blue Hall 1

Jason CASSIBRY

Professor
Department of Mechanical and Aerospace Engineering, University of Alabama in Huntsville
United States

KEYNOTE: C4.10-C3.5 Dielectrophoresis as a Means for Recycling Entrained Uranium for Improved Specific Impulse in Liquid Core Nuclear Rockets

Abstract

Nuclear Thermal Propulsion (NTP) systems offer increases in performance compared with chemical propulsion for in-space missions. The so-called bubble-through nuclear reactor design features a reactor fuel which is rotated at high speed to maintain a layer of molten fuel around the hydrogen-permeable inner cylindrical surface, and this concept is referred to as the Centrifugal Nuclear Thermal Propulsion (CNTTP) system. CNTTP systems may reach Isp values from 1100 to 1800 seconds, a marked improvement over solid core NTP systems with 850 to 900 s. One of the concerns with CNTTP is vaporization of the uranium and entrainment into the hydrogen propellant stream. Just a 1% entrainment by mole fraction of Uranium can reduce the specific impulse in CNTTP system by 382 seconds. Motivated by potentially significant reduction in CNTTP rocket performance due to molten uranium vaporization, we propose electrostatics for recycling the uranium, preventing both reactor fuel loss and reduction in specific impulse. Specifically, we will investigate dielectrophoresis for selectively removing the evaporated uranium from the hydrogen propellant. Dielectrophoresis (DEP) is a force exerted on any material when subject to a non-uniform electric field. Compared with electrostatic forces, materials (solid, liquid, gas, particles) do not need to be charged. Because of material-based frequency dependence, DEP can manipulate material with great selectivity, including metal droplets. In this paper, we will present a notional concept for dielectrophoresis recovery of uranium vapor, including electrode geometry, voltage requirements, modeling, and power requirements. The power requirements per CFE fuel element will be characterized as a function of geometry, and it is shown that theoretically, only ~100 W is required per centrifugal fuel element (CFE). A 3D method of moments simulation will provide the electric field, and the volumetric force will be used to model the uranium vapor 'current' and trajectory against the CFE hydrogen flow. A design of subscale experiments will be given to provide early feasibility of the concept.

D2. & D6.	IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM / IAF SYMPOSIUM ON COMMERCIAL SPACEFLIGHT SAFETY ISSUES	Date	Time	Room
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Session: D2.9-D6.2. Sustainable Approaches and Impact of Space Transportation Solutions on Earth + Space Environment and on General Safety

18.10.2024

13:45

White Hall 2

Andrea VENA

Chief Climate and Sustainability Officer
European Space Agency (ESA)
France

KEYNOTE: D2.9-D6.2 Toward Sustainable Space Exploration: ESA's Commitment to Eco-Design and Environmental Responsibility

Abstract

As space exploration advances, it is imperative to consider the environmental and social impacts of our activities. This paper discusses the European Space Agency's (ESA) proactive stance in fostering sustainability and social responsibility in the space sector, including space transportation solutions. ESA's Strategy 2040 emphasises its dedication to supporting global sustainability frameworks such as the Paris Agreement and the European Green Deal.

A cornerstone of ESA's sustainability efforts is the ESA Green Agenda (EGA), which includes key actions and projects along two overarching objectives to guide environmentally responsible practices across the organisation:

- Setting concrete greenhouse gas emissions reduction targets, integrating eco-design principles and life cycle thinking to ensure a responsible management of its activities;
- Increasing the contribution of its projects to the sustainable development of society, with tangible measures to assess space programs societal benefits.

In this presentation, which could be the keynote of the technical session, Andrea Vena, ESA Chief Climate and Sustainability Officer, delves into ESA's ambition to position the European space sector as a global leader in space sustainability. A key area is the development of a framework focussing on eco-design, aiming at:

- Identifying critical environmental impacts along the space system's life cycle;
- Minimising impacts with the implementation of mitigation solutions at an early stage of the project.

By sharing ESA's experiences and initiatives, this presentation aims to provide an overview of the European context, opening the floor to other more technical presentations showcasing tangible strategies and solutions towards responsible space exploration. This aligns with ESA's objective to foster collaboration and innovation within the global space ecosystem towards space sustainability.

E5.	35th IAA SYMPOSIUM ON SPACE AND SOCIETY	Date	Time	Room
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Session: 6. Simulating Space Habitation: Habitats, Design and Simulation Missions

18.10.2024

13:45

Turquoise Hall 2

Aaron KEMMER

Co-Founder and CEO, Max Space
United States

KEYNOTE: E5.6 Redefining Space Habitation: Max Space's Transformative Approach with Space Expandable Habitats

Abstract

The future of space exploration hinges on our ability to create living environments that are not only efficient and adaptable but also capable of supporting long-term missions far beyond Earth's orbit. Max Space is at the forefront of this transformative shift, developing expandable habitats that address the unique challenges posed by space exploration—where every cubic inch matters and every resource must be optimized.

In this session, Max Space CEO Aaron Kemmer provides an in-depth look at how Max Space is revolutionizing the concept of living and working in space through expandable habitats that are engineered to maximize habitable volume without compromising structural integrity or crew safety. These habitats feature innovative designs that are both lightweight and robust, enabling transportation and rapid deployment in space, all while reducing the financial investment required. Max Space modules redefine the human experience in space by integrating modular interiors that enhance comfort and usability. Space expandables can provide massive amounts of real estate for a fraction of the cost of traditional space architecture (e.g. the International Space Station). For instance, just one large Max Space habitat launched by a Starship rocket could deliver over 20,000 m³ of usable interior—the equivalent of more than 20 combined space stations. The flexibility of these habitats allows them to be tailored to specific mission requirements, whether for lunar bases, Martian outposts, or deep-space exploration.

This session will also explore the collaborative efforts between Max Space and key stakeholders, including NASA and other governmental agencies, to push the boundaries of what is possible. Further, the session will include insights from recent customer conversations and ongoing projects that demonstrate the viability and impact of our expandable habitats. Attendees will gain a comprehensive understanding of how Max Space is not only meeting the current demands of space exploration but is also laying the groundwork for humanity's future in space—and beyond.

Join us to discover how Max Space's vision is expanding the possibilities of space habitation.

E10.	IAF SYMPOSIUM ON PLANETARY DEFENSE AND NEAR-EARTH OBJECTS	Date	Time	Room
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Session: 2. Informing Planetary Defense

18.10.2024

13:45

Space Hall 4

Ronald TERIK DALY

Senior Professional Staff,

The Johns Hopkins University Applied Physics Laboratory

United States

E10.2 Key Takeaways from the 5th Planetary Defense Interagency Tabletop Exercise

Abstract

The 5th U.S.-based Interagency Planetary Defense Tabletop Exercise (PD TTX5) took place in April 2024. The exercise informed preparedness and response capabilities, including international coordination and involvement, for an asteroid impact threat. Sponsored by the NASA Planetary Defense Coordination Office, in partnership with the Federal Emergency Management Agency and U.S. Department of State Office of Space Affairs, PD TTX5 included officials from across the globe. The exercise took place at the Johns Hopkins Applied Physics Laboratory.

The hypothetical scenario was that an asteroid has been discovered with a significant chance of Earth impact in about fourteen years. The scenario included many realistic uncertainties, but data indicated that the asteroid could be large enough to devastate a regional- to country-scale area if it should impact. Part of the exercise examined how to proceed effectively given the many large uncertainties in order to gain better information and reduce the risks in the final outcomes of the scenario.

The objectives of the exercise included (1) Raise awareness of the nature of asteroid threats and challenges related to preparing an effective international response, (2) Explore potential in-space responses to an asteroid threat with >10 years of warning time, including international collaboration and contributions, (3) Assess the challenges of and readiness for international emergency preparedness and response to an asteroid impact that would be large enough to devastate entire regions, and (4) Identify current mechanisms for and barriers to international asteroid threat-related information sharing and communications, including public messaging strategies. The exercise was designed and implemented based on FEMA's Homeland Security Exercise Evaluation Program doctrine.

This presentation will discuss the key takeaways from the exercise with the objective of improving capabilities for response to a potential real-world asteroid impact threat.

4 Special Sessions

4.1 Special Sessions at a Glance



IAC 2024 SPECIAL SESSIONS (SpS)		10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00	18.00
Monday 14 October	<div>Plant Cultivation in Space for Food Production and Resource Regeneration: Opportunities, Constraints, and Advances in Technology</div> <div>Sustainable Cities and Communities: which role for CubeSats?</div> <div>Space Supporting a World of 8 Billion People</div> <div>Excuse Me, Can You Direct Me to Shackleton Crater? [Applying Novel Solutions to the Challenges of Lunar Position, Navigation, and Timing]</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>
Tuesday 15 October	<div>Orbital Debris Remediation – Accelerating Active Debris Removal (ADR)</div> <div>AI-enabled Self-Reliant Design, Construction, and Operations of Adaptable Deep Space Habitats</div> <div>Empowering Tomorrow's Space Visionaries: Exploring Multidisciplinary Pathways to Space Exploration</div> <div>Future Solar Power Satellites: Space Sustainability for Clean and Secure Energy from Space for Earth</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>
Wednesday 16 October	<div>The Next Technology Breakthrough to Drive Transformational Space Science Discovery</div> <div>Responsible and Sustainable Advances in SAR Mission and Technology</div> <div>It's Full of Stars: Storytelling for Space Outreach</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>
Thursday 17 October	<div>GeoInformation Technologies for Sustainable Development (GIFSD): Promoting Responsible Space Data Analysis in Emergency Response</div> <div>A Hard Working Sol on Mars: a Governance Role-Play</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>
Friday 18 October	<div>In-Space Servicing Assembly & Manufacturing (ISAM) – Shaping a Future Safe, Secure and Sustainable Space Ecosystem</div> <div>ESA Moonlights: Lunar Communication and Navigation Services for the Lunar Economy</div> <div>Space It Up! Collaborative Innovation in Space Science & Technology</div> <div>Interactive Workshop on Space Sustainability: Defining Space Sustainability Together</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>
	<div>Very Low Earth Orbits (VLEO) – Development and Engagement of the Growing Community of Interest towards Sustainable Lower Altitude Operations</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>	<div>B R E A K</div>

INTRODUCTION

TECHNICAL SESSIONS

KEYNOTE SPEAKERS

SPECIAL SESSIONS

INTERACTIVE PRESENTATIONS

TECHNICAL SESSIONS BY SYMPOSIUM

4.2 Special Sessions per Day

Monday 14 October

15:30 - 16:40 In-Space Servicing Assembly & Manufacturing (ISAM) – Shaping a Future Safe, Secure and Sustainable Space Ecosystem

Room: Red Hall 2

Format: Campfire

Organizers and Facilitators:



Stephanie BEHAR-LAFETRET

*Project Manager,
EROSS-IOD, Thales
Alenia Space France
France*



Thomas WOLF

*Head,
Automation and
Robotics, Deutsches
Zentrum für Luft- und
Raumfahrt e.V. (DLR)
Germany*



Bernd SOMMER

*Deputy Head,
Space Automation and
Robotics, Deutsches
Zentrum für Luft- und
Raumfahrt e.V. (DLR)
Germany*



Maximo ROA

*Project Manager,
EROSS-IOD, Deutsches
Zentrum für Luft- und
Raumfahrt e.V. (DLR)
Germany*



Rahul RUGHANI

*Chief Systems Engineer,
Arkisys
United States*

Pave the way towards future orbital eco-system and related infrastructure. Translate the increasing needs of society into technological, regulatory, legal, economical and security requirements for the next satellite generations, define services, operations concepts and related servicing infrastructure elements on orbit and on ground. Create sustainability through “cooperative” spacecraft design to meet major demands like: adjustability to customers desires and mission needs, rapid development and production on demand, easy maintainability, debris avoidance, increased responsiveness and cost-efficiency.

Speakers - Panel 1 (Institutional Demands):



Chiaki ICHIKAWA

*Producer Business
Development and
Industrial Relations
Department,
Japan Aerospace
Exploration Agency (JAXA)
Japan*



Bo NAASZ

*Systems Capability
Leader-Rendezvous
& Capture,
National Aeronautics and
Space Administration
(NASA)
United States*



Daniel NÖLKE

*Unit Innovation and New
Space – Space Defence,
European Commission
DG Defence & Industry
Germany*



Holger KRAG

*Manager,
Space Safety Programme,
European Space
Agency (ESA)
Germany*



Joerg KREISEL

*CEO,
JKIC
Germany*

Speakers - Panel 2 (Industrial Potential):



Nobu OKADA
Founder & CEO,
Astroscale
Japan



Ryan TINTNER
Vice President,
Civil Space Systems,
Northrop Grumman
Corporation
United States



Maria Antonietta PERINO
Director for Space
Economy Exploration and
International Network,
Thales Alenia Space Italia
Italy



David BARNHART
Founder & CEO,
Arkisys
United States



Luca ROSSETTINI
Founder & CEO,
D-Orbit SpA
Italy



Thomas SCHERVAN
CEO,
iBOSS gmbH
Germany

16:50 - 18:00 Very Low Earth Orbits (VLEO) – Development and Engagement of the Growing Community of Interest towards Sustainable Lower Altitude Operations

Room: Red Hall 2

Format: Workshop

Organizers:



Nicholas H. CRISP
Lecturer,
Aerospace Systems,
The University of
Manchester
United Kingdom



Georg HERDRICH
Head,
Plasma Wind Tunnels
and Electric Propulsion,
Institute of Space
Systems, University
of Stuttgart
Germany

Speakers:



Peter C.E ROBERTS
Lecturer,
Spacecraft Technology,
The University of
Manchester
United Kingdom



Tommaso ANDREUSSI
Professor,
Aerospace Engineering,
Institute of Mechanical
Intelligence,
Sant'Anna School of
Advanced Studies
Italy



Constantin TRAUB
Postdoctoral Researcher,
CRC 1667 ATLAS, Institute
of Space Systems,
University of Stuttgart
Germany



Anatolii PAPULOV
CEO and Founder,
NewOrbit Space
United Kingdom



Russell HILLS
Senior Spacecraft
Systems Engineer,
Thales Alenia Space
United Kingdom



Frank PREUD'HOMME
Business Development,
Redwire Space
Belgium

Very low Earth orbit (VLEO) is an orbital regime of growing interest, particularly for Earth observation and communications applications. This workshop will explore the current state-of-the-art in enabling research and technology development for VLEO and will identify the key challenges to the realisation of sustained and commercially viable missions. Participants explore ongoing work in this area, share contributions and insights on the current challenges, and collaborate on pathways forward towards implementation and exploitation.

Tuesday 15 October

10:15 - 11:25 Plant Cultivation in Space for Food Production and Resource Regeneration: Opportunities, Constraints, and Advances in Technology

Room: Red Hall 2

Format: Workshop

Facilitator:



Franco MALERBA

Founder,
Space V s.r.l.
Italy

Organizers and Speakers:



Patrizia BAGNERINI

Associate Professor,
Numerical Analysis,
Department of
Mechanical Engineering,
University of Genoa
Italy



Maria Elena DE MAESTRI

Assistant Professor,
International Law,
Department of Law,
University of Genoa
Italy



Stefania DE PASCALE

Full Professor,
Vegetable and
Ornamental Crops,
Department of
Agricultural Sciences,
University of Naples
"Federico II"
Italy



Mauro GAGGERO

Senior Researcher,
National Research
Council of Italy
Italy



Roberta PARADISO

Associate Professor,
Vegetable and
Ornamental Crops,
Department of
Agricultural Sciences,
University of Naples
"Federico II"
Italy

Upcoming commercial and touristic space missions have made the need for efficient cultivation in space relevant. By attending this workshop, you will embark on a journey exploring the challenge of growing plants in space, and land on an innovative vertical farming technology, demonstrated with a prototype, that efficiently manages the few available resources. Together, we will identify new research directions for plant cultivation systems, with the goal of making this technology fully efficient and sustainable.

11:35 - 12:45 Orbital Debris Remediation – Accelerating Active Debris Removal (ADR)

Room: Red Hall 2

Format: Fishbowl

Organizer:



Darren MCKNIGHT
Senior Technical Fellow,
LeoLabs
United States

Moderators:



Darren MCKNIGHT
Senior Technical Fellow,
LeoLabs
United States



Erin DALE
Senior Business Analyst,
LeoLabs
United States



Vitali BRAUN
Space Debris Engineer,
IMS Space Consultancy,
Space Debris Office,
European Space
Agency (ESA)
Germany

We need your help to catalyze the discussion on moving orbital debris remediation forward so that future generations can enjoy a safe, secure environment for space operations to benefit all. The deposition of massive amounts of derelict hardware in low Earth orbit (LEO) threatens to create a deterrent for global leveraging of the space economy; please lend your voice in this multi-dimensional debate to “make remediation real” as soon as possible.

15:00 - 16:10 The Next Technology Breakthrough to Drive Transformational Space Science Discovery

Room: Red Hall 2

Format: Campfire

Organizer:



Charles NORTON

*Deputy Chief Technologist,
NASA Jet Propulsion
Laboratory (JPL)
United States*

Speakers:



Charles NORTON

*Deputy Chief Technologist,
NASA Jet Propulsion
Laboratory (JPL)
United States*



A. C. CHARANIA

*Agency Chief
Technologist,
National Aeronautics and
Space Administration
(NASA)
United States*



Agnès MESTREAU

*ESA-ESTEC Head
of the Systems
Engineering Division,
European Space
Agency (ESA)
Netherlands*



**Massimiliano
PASTENA**

*System Manager,
Scout Projects, European
Space Agency (ESA)
Netherlands*



Travis BROWN

*Chief Engineer and
Team Lead,
Ingenuity Mars
Helicopter Project,
NASA Jet Propulsion
Laboratory (JPL)
United States*

Join us for a campfire discussion on identifying the next technology breakthrough to enable transformative space science and discovery. NASA's Ingenuity helicopter proved multiple first-of-a-kind capabilities that will drive future exploration approaches. This session will open the range of thinking on how to explore new vistas, with the goal of expanding the range of flight missions international space agencies will pursue in the future.

16:20 - 17:30 ESA Moonlight: Lunar Communication and Navigation Services for the Lunar Economy

Room: Red Hall 2

Format: Campfire

Organizer:



Charles CRANSTOUN

Manager,
Moonlight Programme,
European Space
Agency (ESA)
United Kingdom



Christian WALTER

Applications Engineer,
Applications and Solutions
Department, European
Space Agency (ESA)
United Kingdom

Speakers:



Charles CRANSTOUN

Manager,
Moonlight Programme,
European Space
Agency (ESA)
United Kingdom



**Javier
VENTURA-TRAVERSE**

GNSS Senior Advisor,
European Space
Agency (ESA)
Spain



**Francisco-Javier
BENEDICTO RUIZ**

Director of Navigation,
European Space
Agency (ESA)
France



Laurent JAFFART

Director of Connectivity
and Secure
Communications,
Head of ECSAT,
European Space
Agency (ESA)
United Kingdom

Agencies and private organisations around the world are planning to return to the moon. ESA Moonlight aims to support such missions via lunar communication and navigation services.

Join our special session on 'ESA Moonlight: Lunar Communication and Navigation Services for the Lunar Economy' to explore the latest insights on Moonlight and discuss with both technical experts and creative entrepreneurs about the needs, challenges, and opportunities that will shape the future applications of the lunar economy.

Wednesday 16 October

10:15 - 11:25 Sustainable Cities and Communities: which role for CubeSats?

Room: Red Hall 2

Format: Campfire

Organizer:



Maria Antonia BROVELLI

Full Professor,
GIS and Earth
Observation,
Politecnico di Milano
Italy

Facilitators:



Maria Antonia BROVELLI

Full Professor,
GIS and Earth
Observation,
Politecnico di Milano
Italy



Michelle LAVAGNA

Full Professor,
Flight Mechanics,
Politecnico di Milano
Italy

Speakers:



Vasiliki CHARALAMPOPOULOU

President & CEO,
GEOSYSTEMS HELLAS S.A
Greece



Andrea TARAMELLI

Italian National Delegate,
Full Professor,
European Commission
Copernicus User Forum,
IUSS Pavia
Italy



Deodato TAPETE

Researcher,
Earth Observation, Italian
Space Agency (ASI)
Italy



Riccardo BENVENUTO

Vice President,
Satellite Technology
& Operations,
Constellr GmbH
Germany



Giuseppe TOMASICCHIO

Head,
RDI System Engineering &
Design Authority, Research,
Digital & Innovation (RDI),
Manager,
Space Exploration &
Space Station Services
Innovation Domain,
Telespazio S.p.A.
Italy



Luca SOLI

Aerospace Engineer,
Microsatellites and
Constellations Product
Line Architect, Thales
Alenia Space Italia



Silvia NATALUCCI

Head,
EO Mission Management,
Italian Space Agency (ASI)
Italy



Miriam GONZALEZ

Space Tech Partnerships,
Mapanauta Space
& Geochicas
Mexico



Giuseppe BORGHI

Head,
ESA Φ-lab Division,
European Space
Agency (ESA)
Italy



Cecilia SCIARRETTA
Head,
R&D Governance
and Sustainability
Technology Roadmap,
e-GEOS S.p.A.
Italy



Nathalie RICARD
Scientific Affairs Officer,
United Nations Office
for Outer Space
Affairs (UNOOSA)
Austria

We invite stakeholders from Earth Observation, SMallSats, Space Economy sectors, major satellite integrators/operators, institutional representatives, and academic experts to engage in a fruitful discussion. Let's explore diverse viewpoints on leveraging in situ, aerial, and already flying large assets space Earth observations with CubeSats to enhance flexibility, completeness, and timeliness. By integrating all these technologies, we aim to foster sustainability in urban areas and communities.

11:35 - 12:45 AI-enabled Self-Reliant Design, Construction, and Operations of Adaptable Deep Space Habitats

Room: Red Hall 2

Format: Campfire

Organizers:



Valentina SUMINI
Visiting Professor,
Research Affiliate,
Politecnico di Milano,
MIT Space Exploration
Initiative
Italy



Cody PAIGE
Director,
MIT Space Exploration
Initiative
United States



Annika ROLLOCK
Director,
Engineering,
Aurelia Institute
United States

Speakers:



Melodie YASHAR
Vice President,
Building Design &
Performance,
ICON
United States



Sandra HAEUPLIK-MEUSBURGER
Academic Director,
TU Wien
Austria



Gui TROTTI
Professor,
Co-founder and Chairman,
Arizona State University,
EarthDNA,
Trotti Studio



Roberto NABONI
Associate Professor,
Founder and Director,
University of Southern
Denmark,
SDU CREATE
Denmark



Dava NEWMAN
Director,
Apollo Professor
of Astronautics,
MIT Media Lab
United States

Generative AI tools such as ChatGPT and Autodesk Fusion have promised to revolutionize the way do everything, from writing reports to designing mechanical structures. In deep space, where astronauts must operate with increasing self-reliance, these models may enable the design and construction of everything from tools to habitats that adapt to their environments. We invite you to join us for a discussion of the challenges, risks, and ethics associated with utilizing generative AI in space.

15:00 - 16:10 Responsible and Sustainable Advances in SAR Mission and Technology

Room: Red Hall 2

Format: Workshop

Organizer:



Guy SEGUIN

CEO,
INSARSAT
Canada

Facilitators:



Dirk GEUDTNER

System Manager,
Copernicus Sentinel-1,
European Space
Agency (ESA)
Netherlands



Matteo EMANUELLI

Manager,
Future Radar
Programmes,
Airbus Defence and
Space GmbH
Italy



Annamaria NASSISI

Manager,
Space Economy,
Observation and
Navigation,
Thales Alenia Space Italia
Italy

Speakers:



Pier BARGELLINI

Manager,
Copernicus Space
Segment Programme,
European Space
Agency (ESA)
Italy



Francesco LONGO

Head,
Earth Observation
Division,
Italian Space Agency (ASI)
Italy



Paul A. ROSEN

Project Scientist,
NISAR,
NASA Jet Propulsion
Laboratory (JPL)
United States



Alexander KAPTEIN

Senior Manager,
Future Radar Programs,
Airbus Defence and
Space GmbH
Germany



Ornella BOMBACI

Director,
Bids Department,
Manager, Radar &
EO MW Systems
and Constellations
Product Line,
Thales Alenia Space Italia
Italy



Toshihiro OBATA

Board Director & Head,
Technology
Strategy Office,
Synspective Inc.
Japan

SAR is the only sensor that permits observations, in all weather and illumination conditions, of the physical characteristics of ice, ocean, and land surface, as well as enabling accurate change detections. It is critical for monitoring, surveillance and disaster response and provides key information on climate change impacts and adaptation. The SAR market quasi-exponential growth poses challenges to SAR development.

Attend this session to hear the main strategists on a Responsible and Sustainable SAR Development.

16:20 - 17:30 Space It Up! Collaborative Innovation in Space Science & Technology

Room: Red Hall 2

Format: Fishbowl

Organizer:



Erasmo CARRERA

President,
Associazione Italiana
di Aeronautica e
Astronautica (AIDAA)
Italy

Facilitator:



Barbara NEGRI

Head,
Human Flight and Science
Experimentation,
Italian Space Agency (ASI)
Italy

Speakers:



Francesco TOPPUTO

Full Professor,
Politecnico di Milano
Italy



Fabrizio PIERGENTILI

Full Professor,
Sapienza University
of Rome
Italy



Alfredo RENGÀ

University of Naples
"Federico II"
Italy



Luca LATRONICO

Research Director,
INFN
Italy



Roberto BATTISTON

Professor,
University of Trento,
Department of Physics,
National PhD in Space
Science and Technology
Italy



Silvano FINESCHI

Senior Researcher,
National Institute
for Astrophysics,
Astrophysical
Observatory of Torino
Italy



Domenico CIMINI

Research Manager,
CNR-IMAA
Italy



Erasmo CARRERA

President,
Associazione Italiana
di Aeronautica e
Astronautica (AIDAA)
Italy



Giovanni PRATESI

Professor,
University of Firenze
Italy

Dive into innovation at 'Space It Up! Collaborative Innovation in Space Science & Technology'—a unique fishbowl session at IAC 2024. Join top minds from academia, industry, and agencies to explore breakthroughs in satellite tech, Earth observation, and planetary protection. Experience dynamic, real-time discussions and contribute to shaping the future of space exploration. Don't miss this opportunity to be part of a collaborative ecosystem—be the catalyst for the next era in space science and technology!

Thursday 17 October

10:15 - 11:25 Space Supporting a World of 8 Billion People

Room: Red Hall 2

Format: Workshop

Organizer and Facilitator:



Vera PINTO

Policy Coordinator,
Directorate General
for Defence Industry
and Space,
European Commission
Belgium

Speakers:



Andrew PEEBLES

External Relations Officer,
UN Office for Outer
Space Affairs (UNOOSA)
Austria



Chiara SOLIMINI

Space Downstream
Market Officer,
European Union
Agency for the Space
Programme (EUSPA)
Czech Republic



Marco CHINI

Lead Research and
Technology Associate,
Luxembourg Institute
of Science and
Technology (LIST)
Luxembourg

Join us in exploring how the space technologies, data & services, are pivotal in shaping a sustainable future for a world of 8 billion people. Engage with experts, contribute to the dialogue, and be part of a collaborative effort to harness space technologies for global well-being.

11:35 - 12:45 Empowering Tomorrow's Space Visionaries: Exploring Multidisciplinary Pathways to Space Exploration

Room: Red Hall 2

Format: Roundtables Discussion

Organizer:



Giuseppe GOVERNALE

Postdoctoral
Research Fellow,
Politecnico di Torino
Italy

Facilitators:



Luca KIEWIET

PhD Candidate,
Deutsches Zentrum für
Luft- und Raumfahrt
e.V. (DLR)
Germany



Hannah SARGEANT

Research Fellow,
University of Leicester
United Kingdom



Ivano VERZOLA

Space Business
Unit Manager,
Lazero Tecnologie srl
Italy



Tania GRES

National Point of
Contact for France,
Space Generation
Advisory Council (SGAC)
France



Hannah DAWE

Space Mission
Intelligence Analyst,
HEO Space
United Kingdom

Speakers:



Alessandra BARCO

Aerospace Engineering
Fellow,
University of Leicester
United Kingdom



**Stéphanie
LIZY-DESTREZ**

Full Professor,
Institut Supérieur
de l'Aéronautique et
de l'Espace (ISAE)
France



**Maria Antonietta
PERINO**

Director for Space
Economy Exploration and
International Network,
Thales Alenia Space Italia
Italy



Giorgio SACCOCCIA

Senior Advisor to
Director General,
European Space
Agency (ESA)
France



Nicole VIOLA

Full Professor,
Politecnico di Torino
Italy



Marco DI CLEMENTE

Head,
Technology Developments
and Space Design,
Italian Space Agency (ASI)
Italy

Embark on a journey through the legacy of space exploration with SEEDS! Join our special session at IAC to explore mission concepts developed by the next generation of space professionals and help us define the best practices concerning sustainable mission design. Witness former students share their experiences. Engage in visionary dialogues. Let's work together for a more diverse, eco-responsible and sustainable space exploration! Ignite your passion for space missions with SEEDS!

15:00 - 16:10 It's Full of Stars: Storytelling for Space Outreach

Room: Red Hall 2

Format: Workshop

Organizers:



Julie Nekola NOVÁKOVÁ

*Researcher and Science Communicator,
Institute of Physics, Czech Academy of Sciences;
Faculty of Science, Charles University;
European Astrobiology Institute
Czech Republic*



Andrea BRUNELLO

*Director,
Science Communication Teacher, Arditodesio Company,
University of Trento
Italy*



Valentin D. IVANOV

*Astronomer and Science Communicator,
European Southern Observatory
Germany*

Speakers:



Daniela DE PAULIS

*Artist,
SETI Institute
United States*



Giovanni POGGIALI

*Astrobiologist and Planetary Scientist,
Astrophysical Observatory,
INAF
Italy*



Julie Nekola NOVÁKOVÁ

*Researcher and Science Communicator,
Institute of Physics, Czech Academy of Sciences;
Faculty of Science, Charles University;
European Astrobiology Institute
Czech Republic*



Andrea BRUNELLO

*Director,
Science Communication Teacher, Arditodesio Company,
University of Trento
Italy*



Valentin D. IVANOV

*Astronomer and Science Communicator,
European Southern Observatory
Germany*

This guided workshop will help you engage with storytelling for space outreach and education. Who doesn't love a good story? Narratives elicit interest and emotion, help us remember and contextualize facts, and assist us in imagining and building a better future. Whether you're a scientist, engineer, administrator, educator or artist, join in to brainstorm your ideas, identify key messages and efficient ways to carry them to your audience, and meet diverse potential collaborators across disciplines.

16:20 - 17:30 Interactive Workshop on Space Sustainability: Defining Space Sustainability, Together

Room: Red Hall 2

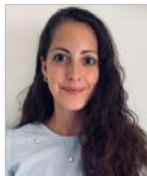
Format: Campfire

Organizers:



Mahhad NAYYER

Co-Lead,
Space Safety and
Sustainability
Project Group,
Space Generation
Advisory Council (SGAC)
Pakistan



Alessandra GARGIULO

CEO,
Uyolo s.r.l.
Italy

Facilitators:



Mahhad NAYYER

Co-Lead,
Space Safety and
Sustainability
Project Group,
Space Generation
Advisory Council (SGAC)
Pakistan



Alessandra GARGIULO

CEO,
Uyolo s.r.l.
Italy



Miles LIFSON

Research Engineer,
The Aerospace
Corporation
United States



Ksenia OZKOK

Founder,
Re.Brand Academy
Türkiye



Hamza HAMEED

Senior Practice Manager,
Space & Connectivity,
Access Partnership,
Space Generation
Advisory Council (SGAC)
Pakistan

Let's shape the future of Space Sustainability at IAC 2024! Please join our Special Session designed in the form of an interactive workshop that will unravel the complexities of Space Sustainability from legal, technical, communications (media), corporate perspectives. Engage in an interactive and collaborative effort with diverse space stakeholders to define together what space sustainability means. Let's chart together a responsible future of space exploration and activities. The session will also focus on creating a larger community of Space Sustainability enthusiasts from an diverse disciplines. Don't miss this opportunity to drive impactful initiatives, become part of collaborations, and contribute to the sustainable future of space!

Friday 18 October

10:15 - 11:25 **Excuse Me, Can You Direct Me to Shackleton Crater? Applying Novel Solutions to the Challenges of Lunar Position, Navigation, and Timing (PNT)**

Room: Red Hall 2

Format: Campfire

Organizer and Facilitator:



Cheryl GRAMLING

*Lunar PNT and Standards Lead,
National Aeronautics and Space Administration (NASA)
United States*

Speakers:



Javier VENTURA-TRAVERSE

*GNSS Senior Advisor,
European Space Agency (ESA)
Spain*



Floor MELMAN

*Radio Navigation Engineer,
European Space Agency (ESA)
Netherlands*



Masaya MURATA

*Lunar PNT Lead,
Lunar Navigation Satellite System (LNSS),
Japan Aerospace Exploration Agency (JAXA)
Japan*



Gregory HECKLER

*Director,
Commercial Communications Services Division (CCSD),
Space Communication and Navigation Program (SCaN),
National Aeronautics and Space Administration (NASA)
United States*

We're going to the Moon and need to know where we are. We'd like you to help us accurately locate ourselves while safely exploring, mining, performing science, traversing, or orbiting. So please join this dynamic session to engage and explore your ideas for performing safe navigation at the Moon. We'll be lost without you!

11:35 - 12:45 Future Solar Power Satellites: Space Sustainability for Clean and Secure Energy from Space for Earth

Room: Red Hall 2

Format: Campfire

Organizer:



Haroon B. OQAB

CEO,
Metasat
Canada

Speakers:



George B. DIETRICH

President,
SPACE Canada
Canada



Andrew WILSON

Managing Director,
Metasat
United Kingdom



Emmanuelle DAVID

Executive Director,
Ecole Polytechnique
Fédérale de
Lausanne (EPFL)
Switzerland



Massimiliano VASILE

Director,
Aerospace Centre
for Excellence,
University of Strathclyde
United Kingdom



Nobuyuki KAYA

President,
Wave Arrays
Japan

Imagine a world where clean and renewable energy is harvested directly from the Sun, beamed down to Earth, transforming the way we power our planet, and providing an alternative energy source for clean and secure sustainable energy. This special session brings together an interdisciplinary panel in a campfire format to discuss novel approaches to achieve greater resilience, reduce environmental impact, and increase economic value for designing and building future solar power satellites.

13:45 - 14:55 Geoinformation Technologies for Sustainable Development (GIT4SD): Promoting Responsible Space Data Analysis in Emergency Response

Room: Red Hall 2

Format: Workshop

Organizers:



Sona GULIYEVA
PhD Researcher,
Politecnico di Torino
Italy



Alina VIZIREANU
GIS Manager,
Milton Keynes
City Council,
UK Local Government
United Kingdom

Facilitator:



Fidan BEHBUDOVA
Head of PR and
Communication Unit,
Azercosmos Space
Agency of the Republic
of Azerbaijan
Azerbaijan

Speakers:



Piero BOCCARDO
Full Professor,
Politecnico di Torino
Italy



Ozan KARA
Senior Researcher,
Propulsion and Space,
Technology Innovation
Institute
United Arab Emirates

Amidst climate change's growing impact, disasters surge, threatening lives, property, and the environment. In this Special Session, we welcome participants eager to delve into insights and career paths centered on protecting lives and property while mitigating disasters. Join us to deepen your understanding of Earth's dynamics through lectures and hands-on GIS applications. Explore real-life emergency scenarios and collaborate within multidisciplinary teams to enhance your grasp of practical disaster management.

Restless Earth Workshop Synopsis

Overview The British Cartographic Society is proud to present the «Restless Earth» workshop, a disaster relief mapping session designed to highlight the crucial role of geospatial technologies and cartography in emergency response. This engaging and informative workshop will take place during the IAC24 in Milan, as part of the Special Session on «Promoting Responsible Space Data Analysis in Emergency Response.»

What to Expect: Participants in the Restless Earth workshop will explore the impactful world of disaster relief mapping through hands-on activities and group collaboration. Key elements of the workshop include:

- Learning about the devastating 2023 Türkiye & Syria earthquake and the 2011 Japan earthquake, tsunami, and nuclear disaster.
- Analyzing large wall maps that detail the catastrophic impacts and response strategies for these events.
- Gaining insights into the application of GIS and Earth Observation data for effective disaster mitigation and emergency response.
- Enhancing skills in geospatial technologies.

Benefits:

- Develop understanding of geospatial technologies and their application in real-world disaster scenarios.
- Develop practical skills in Earth Observation data analysis for emergency response.
- Collaborate with fellow participants to promote a shared learning experience.
- Contribute to encouraging responsible and effective use of space data in crisis situations.

About the British Cartographic Society: Founded in 1963, the British Cartographic Society is dedicated to the art and science of mapmaking. The society provides a platform for sharing knowledge, advancing cartographic techniques, and promoting innovation in map design. The Restless Earth workshop is one of the many initiatives by BCS to promote the importance and application of cartography in various fields.

15:05- 16:15 A Hard Working Sol on Mars: a Governance Role-Play

Room: Red Hall 2

Format: Fishbowl

Organizers:



Ignazio CASTELLUCCI

Associate Professor,
Private Comparative Law,
University of Teramo
Italy



Stefania PALADINI

Professor,
Business Analytics,
Queen Margaret
University of Edinburgh
United Kingdom



**Maria LUCAS
RHIMBASSEN**

Chair SIRIUS,
Research Associate,
PhD Candidate in Space
Law and Antitrust,
University Toulouse
France



Sirio ZOLEA

Researcher,
Private Comparative Law,
Roma Tre University
Italy



Marco JANSSEN

Director,
Center for Behavior,
Institutions,
and the Environment,
Arizona State University
United States



Eytan TEPPER

Research Coordinator
and Adjunct Professor,
Space Governance,
Graduate School of
International Studies,
Laval University
United States

Facilitator:



**Rafael MORO
AGUILAR**

Adjunct Professor,
International Law,
Florida International
University
United States

Speakers:



Ignazio CASTELLUCCI

Associate Professor,
Private Comparative Law,
University of Teramo
Italy



Ken DAVIDIAN

Vice President for North
American Operations,
International Space
University (ISU)
United States



Stefania PALADINI

Professor,
Business Analytics,
Queen Margaret
University of Edinburgh
United Kingdom



Erica Isabella SCUDERI

Visiting Assistant Professor,
Space Law and Space
Taxation, Levin College of
Law, University of Florida
United States








Sirio ZOLEA

Researcher,
Private Comparative Law,
Roma Tre University
Italy

Martian Stakeholders Wanted! Are you a state? A company? A human rights NGO? Come to the IAC 2075 Conference to decide the economic, legal, and political future of the Red Planet! Vote which actor to support, during their debate on the most suitable model of development for human communities on Mars! The winner can determine the future of humankind. But don't forget to invest in sustainability: if not, game over!

5 Interactive Presentations Sessions

5.1 Category Coordinators and Members of the IP Award Committee

Category A	SCIENCE AND EXPLORATION
	<p>Maria-Antonietta Perino <i>Thales Alenia Space, Italy</i></p>
Category B	APPLICATIONS AND OPERATIONS
	<p>Igor V. Sorokin <i>S.P. Korolev Rocket and Space Corporation Energia Russian Federation</i></p>
Category C	TECHNOLOGY
	<p>John C. Mankins <i>Vice President, Moon Village Association (MVA) Vice President, ARTEMIS Innovation Management Solutions United States</i></p>
Category D	INFRASTRUCTURE
	<p>Roberta Mugellesi-Dow <i>Integrated Applications Manager, European Space Agency (ESA) United States</i></p>
Category E	SPACE AND SOCIETY
	<p>Lyn Wigbels <i>American Astronautical Society (AAS), United States</i></p>

5.2 IP Sessions and IP Award Ceremony

IP Session

Monday 14 October, 12:30 - 13:30
IP AREA, Hall B, MiCo Convention Centre

IP Session

Tuesday 15 October, 12:50 - 13:30
IP AREA, Hall B, MiCo Convention Centre

IP Session

Wednesday 16 October, 12:50 - 13:30
IP AREA, Hall B, MiCo Convention Centre

IP Session & IP Cocktal Reception

Thursday 17 October, 13:30 - 14:40
IP AREA, Hall B, MiCo Convention Centre

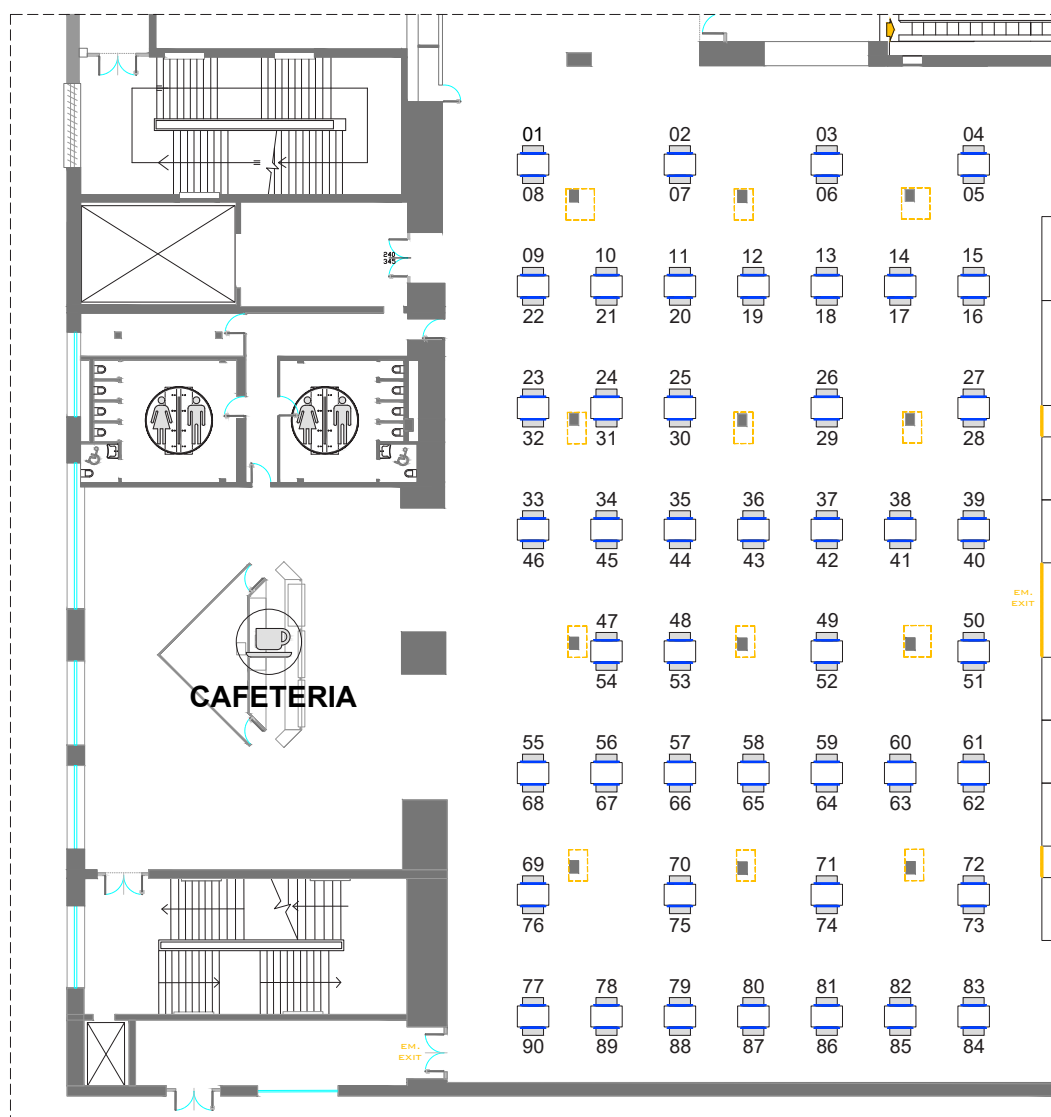
IP Session

Friday 18 October, 12:50 - 13:30
IP AREA, Hall B, MiCo Convention Centre

IP Award Ceremony

Thursday 17 October, 13:00 - 13:30
Silver Hall, Level 2, North Wing, MiCo Convention Centre

5.3 Interactive Presentations Floor Plans



5.4 Interactive Presentations Schedule

Please check the IAF App to get the latest updates on the Interactive Presentations.

Monday 14 October 2024

SCREEN #1

12:30-12:40 IAC-24/A1/IPB/88200
WOUND HEALING REAL TIME MONITORING MULTI-SENSING ELECTRONICS
Fraboni

12:40-12:50 IAC-24/A1/IPB/87155
EXTRATERRESTRIAL GLACIERS: THE SOLAR SYSTEM OCEANS - FORMATION, BIOLOGICAL POTENTIAL.
Ulviyya Najafli, Azerbaijan

12:50-13:00 IAC-24/A1/IPB/85125
INTEGRATED TRANSCRIPTOMIC ANALYSIS OF MOUSE TISSUE DURING SPACEFLIGHT MISSION
Nailil Husna, Japan

13:00-13:10 IAC-24/A1/IPB/88932
PSYCHOLOGICAL CHALLENGES OF SPACE TRAVEL
Shabnam Ibrahimova, Azerbaijan

13:10-13:20 IAC-24/A1/IPB/85889
NUTRITIONAL COUNTERMEASURES AGAINST IMMUNE SYSTEM DYSREGULATION CAUSED BY OXIDATIVE STRESS IN MICROGRAVITY AND IONIZING RADIATION IN LONG-TERM SPACEFLIGHTS
Luisa Garcia Rojas Vazquez, Mexico

13:20-13:30 IAC-24/A1/IPB/89251
HUMAN PHYSIOLOGY IN SPACE
Sara Mammadova, Azerbaijan

SCREEN #2

12:30-12:40 IAC-24/A1/IPB/87036
UNDERSTANDING MECHANISMS AND UNVEILING COUNTERMEASURES FOR THE BEDREST-INDUCED DECREASE IN CEREBRAL BLOOD FLOW
Carmen Possnig, Austria

12:40-12:50 IAC-24/A1/IPB/83194
SPACE WEATHER MITIGATION: A MULTIDISCIPLINARY PROPOSAL FOR ENHANCED ASTRONAUT RADIATION PROTECTION
Rochelle Velho

12:50-13:00 IAC-24/A1/IPB/85932
EXPLORING THE IMPACT OF JAIN MEDITATION ON ASTRONAUTS' MENTAL WELL-BEING FOR EXTENDED ISOLATION SPACE MISSIONS
Aagam Jain, India

13:00-13:10 IAC-24/A1/IPB/91170
PROBING EYE ADAPTATION IN ANALOG MISSION ENVIRONMENTS
Martyna Baran

13:10-13:20 IAC-24/A1/IPB/91766
ILLUMINATING LIFE'S ORIGINS: THE LEORIGIN SPACE EXPERIMENT
Uma Cladellas Sanjuan

13:20-13:30 IAC-24/A1/IPB/81084
EXPLORING THE INTERSECTION BETWEEN SPACE AND LIFE SCIENCES
Alexandre Mencik, Belgium

SCREEN #3

12:30-12:40 IAC-24/A1/IPB/87943
ADVANCING LUNAR BIOLOGY: TESTING AND INTEGRATING A MICROBIAL VESSEL FOR ENHANCED ELECTROCHEMICAL AND OPTICAL MEASUREMENTS IN SPACE EXPLORATION
Chinmayee Govinda Raj, United States

12:40-12:50 IAC-24/A1/IPB/85211
REAL HEROES THAT EXIST IN OUR WORLD
Aylin Quliyeva, Azerbaijan

12:50-13:00 IAC-24/A1/IPB/88370
META-ANALYSIS ON THE BENEFITS OF LIGHT THERAPY AND INTEGRATED LIGHTING SYSTEMS ON HUMAN HEALTH, WELL-BEING, AND PSYCHOLOGICAL PERFORMANCE IN EXTREME ENVIRONMENT ARCHITECTURE
CHUKWUEMEKA UKAGA, United States

13:00-13:10 IAC-24/A1/IPB/85040
POST-FLIGHT REHABILITATION OF ASTRONAUTS
Qönça Yusufova, Azerbaijan

13:10-13:20 IAC-24/A1/IPB/90157
HEROES CONQUERING INTERSTELLAR SPACE
Aylin Quliyeva, Azerbaijan

13:20-13:30 IAC-24/A1/IPB/81911
EXPLORING MICRORNA-206-3P AS A BIOMARKER IN SPACEFLIGHT-INDUCED DEPRESSION: A NEUROBIOLOGICAL PERSPECTIVE
Madiha Rasheed, China

SCREEN #4

12:30-12:40 IAC-24/A1/IPB/91105
EXTRAVEHICULAR ACTIVITY (EVA) UNDER PRESSURE. SIMULATED EMERGENCY SCENARIOS DURING EVA IN SPACE ANALOGS.
Gabriel G. De la Torre, Spain

12:40-12:50 IAC-24/A1/IPB/88225
BIOMECHANICS STABILITY ASSESSMENT OF A PASSIVE VIBRATION ISOLATION AND STABILIZATION ANALOG DESIGN FOR EXPLORATION EXERCISE DEVICES
Sandra Faragalla, United States

12:50-13:00 IAC-24/A1/IPB/82074
THE IMPACT OF PREBIOTIC MOLECULES ON INORGANIC SILICA DEPOSITION AND ITS SIGNIFICANCE FOR THE IDENTIFICATION OF PUTATIVE BIOMARKERS ON MARS.
Khushi Daga, Australia

13:00-13:10 IAC-24/A1/IPB/91143
OPEN VS CLOSED SPACE ANALOGS. DOES EVA MAKE A DIFFERENCE?
Sara Gonzalez-Torre, Spain

13:10-13:20 IAC-24/A1/IPB/81280
PALM COOLING FOR HEAT MITIGATION
Katherine Maguire

13:20-13:30 IAC-24/A1/IPB/89240
ÉOS: THE OPTIMAL RECOVERY EXPERIENCE
Emma Chabani, France

Monday 14 October 2024

SCREEN #5

12:30-12:40 IAC-24/A1/IPB/83405

THERMODYNAMIC AND BIOPHYSICAL EFFECTS OF EXTREME CONDITIONS ON ANALOG ASTRONAUTS IN THE ASTROLAND INTERPLANETARY HABITAT: A STUDY OF THE FIRST LATIN AMERICAN ANALOG MARS RESEARCH MISSION USING SUSTAINABLE SMART SOCKS

Julio Abraham Rizo Churape, Mexico

12:40-12:50 IAC-24/A1/IPB/88911

DENTAL GUIDELINES FOR ASTRONAUTS ON SHORT- AND LONG TERM MISSIONS : A SCOPIC REVIEW

Dirk Neefs

12:50-13:00 IAC-24/A1/IPB/86607

PHYSICAL PREPARATION FOR SPACEFLIGHT – RESULTS OF THE HALF YEAR TRAINING PROGRAM OF THE HUNOR - “HUNGARIAN TO ORBIT” ASTRONAUT CANDIDATES

Kludia Vivien Nagy, Hungary

13:10-13:20 IAC-24/A1/IPB/81800

THE DEVELOPMENT AND FORMATION OF BLOOD MALIGNANCIES IN ASTRONAUTS AND SPACE TRAVELERS AS A RESULT OF COSMIC RADIATION DURING DEEP SPACE TRAVEL

Fay Ghani, United States

13:20-13:30 IAC-24/A1/IPB/85697

RADIATION PROTECTION BY DESIGN STRATEGY FOR LUNAR HABITATS

Valentina Sumini

SCREEN #6

12:30-12:40 IAC-24/A1/IPB/81657

DEEP SPACE FINE - A QUALITATIVE STUDY ON EXTREME ENVIRONMENT HABITAT DESIGN AND CREW WELL-BEING

Konstantin Chtereve, United Kingdom

12:40-12:50 IAC-24/A1/IPB/85805

LUNARES RESEARCH STATION DATABASE 2021-2023 FROM THE ANALOG RESEARCH AND MISSION SIMULATIONS - REPORT ON THE DEVELOPMENT OF THE DATABASE, CONDITIONS AND AVAILABILITY

Agata Mintus, Poland

12:50-13:00 IAC-24/A1/IPB/90383

SPACE PHYSIOTHERAPY

Vusale Kazimova, Azerbaijan

13:20-13:30 IAC-24/A1/IPB/85501

THE EFFECT OF SIMULATED MICROGRAVITY BY CLINOSTAT ON THE STABILITY OF CIRCULAR DNA AND CIRCULAR MRNA.

Suchayaa kritsabannarat

SCREEN #7

12:30-12:40 IAC-24/A1/IPB/83272

ACUTE CARDIOVASCULAR RESPONSE TO GRAVITY CHANGES: A MULTISCALE MATHEMATICAL MODEL FOR MICROGRAVITY AND HYPERGRAVITY APPLICATIONS

Francesco Tripoli, Italy

12:40-12:50 IAC-24/A1/IPB/91270

EXPLORING MICROGRAVITY INDUCED CHANGES TO THE COAGULATION SYSTEM USING THROMBOELASTOMETRY

Jesper Mølgaard

12:50-13:00 IAC-24/A1/IPB/82512

CASSINI: ADVANCING ASTROBIOLOGY WITH INTEGRATIVE ROBOTICS & ARTIFICIAL INTELLIGENCE

Nijanthan Vasudevan, United States

13:10-13:20 IAC-24/A1/IPB/88588

PRODUCTION AND STIMULATION OF INTERLEUKIN-2 THROUGH TRANSGENESIS AS A PRO-IMMUNOLOGICAL THERAPEUTIC

Alexis Uriel Barbosa, Mexico

13:20-13:30 IAC-24/A1/IPB/83121

MATHEMATICAL ASTROBIOLOGY: THE STATISTICAL DRAKE EQUATION SOLVED IN 50 STEPS BY MACCONE'S LOGNORMAL METHOD

Claudio Maccone, Italy

SCREEN #8

12:30-12:40 IAC-24/A1/IPB/87291

EXTRA-VIRGIN OLIVE OIL AS A COUNTERMEASURE FOR THE EFFECTS OF SPACE ON HUMAN HEALTH

Marta Del Bianco

12:40-12:50 IAC-24/A1/IPB/87952

INVESTIGATING THE MODULATION OF BLOOD FLOW BY ELECTROMAGNETIC FIELDS IN HYPER AND MICROGRAVITY CONDITIONS FOR SPACE MEDICINE APPLICATIONS

Daniel Cieslak

SCREEN #9

12:30-12:40 IAC-24/A1/IPB/87825

IMPACT OF ISOLATION/CONFINEMENT (IC) STRESS ON HUMAN BIOPHYSIOLOGY: A MULTIOMIC ANALYSIS

Catherine Taylor, Canada

12:50-13:00 IAC-24/A1/IPB/85618

ISOLATION AND CONFINEMENT IN SPACE AND UNDERWATER MISSIONS

Monica Monici

13:10-13:20 IAC-24/A1/IPB/91806

ESCHERICHIA COLI SURVIVAL AND ADAPTATION IN SIMULATED SPACEFLIGHT CONDITIONS

Jaume Puig

13:20-13:30 IAC-24/A1/IPB/85473

ASTRANAUTS: MONITORING SPACE-INDUCED STRESS BY SMALL RNAS IN BODY FLUIDS

Davide De Pietri Tonelli, Italy

SCREEN #10

12:30-12:40 IAC-24/A1/IPB/90629

NEURODIVERSITY IN SPACE, INDUSTRY AND BEYOND

Nykoda Cooper, Canada

12:50-13:00 IAC-24/A1/IPB/85441

THE POTENTIAL ROLE OF BIOMEDICAL LAB-ON-CHIP FOR HUMAN SPACE EXPLORATION

Elisa Scatena

13:10-13:20 IAC-24/A1/IPB/84444

SPACEGUARDIAN-GPT

Susan Ip-Jewell, United States

SCREEN #11

12:40-12:50 IAC-24/A1/IPB/85931

NAVIGATING MUSCULOSKELETAL CHALLENGES IN SPACE EXPLORATION: MECHANISMS, INTERVENTIONS, AND FUTURE DIRECTIONS

Kamran Mahmudov, Azerbaijan

Monday 14 October 2024

13:00-13:10 IAC-24/A1/IPB/89650

SYNERGISTIC ADVANCES IN SPACE RADIATION HEALTH EFFECTS: COLLABORATIVE INSIGHTS FROM AMS ROMA SAPIENZA AND MEDICAL PHYSICS DIVISION OF IRCCS UNIVERSITY HOSPITAL OF BOLOGNA HOSPITAL
Alessandro Bartoloni, Italy

SCREEN #12

12:30-12:40 IAC-24/A3/IPB/81009

DETERMINING AGES OF ROCKS ACCESSIBLE WITHIN THE ARTEMIS EXPLORATION ZONE
Ruby Patterson, United States

12:40-12:50 IAC-24/A3/IPB/84161

NUMERICAL ANALYSIS OF GROUND EFFECT INTERACTION FOR ROTATIONAL SYSTEMS IN MARTIAN ATMOSPHERE
Abhay Kaushik Nudurupati, India

12:50-13:00 IAC-24/A3/IPB/83743

A MODULAR NUCLEIC ACID EXTRACTION AND ANALYSIS SYSTEM FOR EXTRATERRESTRIAL EXPLORATION
HAMZA MAHDI, Canada

13:00-13:10 IAC-24/A3/IPB/85872

SURVIVING MARS: CHALLENGES OF A SUSTAINABLE OUTPOST
Fakhri Amanov, Azerbaijan

13:10-13:20 IAC-24/A3/IPB/89765

LUNAR MAPPER AND INSPECTOR (LUMI): SMALL MISSION FOR SOUTH POLE EXPLORATION
Petr Bohacek, Czech Republic

13:20-13:30 IAC-24/A3/IPB/82632

ADVANCING PLANETARY SURFACE EXPLORATION THROUGH LIDAR-RGBD FUSION FOR SAFE AND EFFICIENT CAVE EXPLORATION
M.omar ALBALBAKI, Jordan

SCREEN #13

12:30-12:40 IAC-24/A3/IPB/90991

IMPACT OF NANOPARTICLES DURING THE EXPERIMENTAL STUDY OF SELECTED LASER MELTING PROCESSES OF REGOLITH SIMULANTS FOR CELESTIAL APPLICATIONS
Grégoire chabrol, France

12:40-12:50 IAC-24/A3/IPB/86660

MODULAR PIPELINE FOR SMALL BODIES GRAVITY FIELD MODELING: ENHANCING ACCURACY AND EFFICIENCY FOR PROXIMITY OPERATIONS
Antonio Rizza, Italy

12:50-13:00 IAC-24/A3/IPB/90625

PRELIMINARY DESIGN OF MINI-ROVERS IN SWARM CONFIGURATION FOR A MOON IN-SITU RESOURCE UTILIZATION MISSION
Giuseppe Puleo, Italy

13:00-13:10 IAC-24/A3/IPB/85319

VESPUCCI MISSION: UNVEILING COMETARY SECRETS VIA DRILLING AND CRYOGENIC SAMPLE RETURN
Roberto Capasso, Italy

13:10-13:20 IAC-24/A3/IPB/87845

INNOVATIVE REGOLITH TRANSPORT SYSTEMS FOR EXTREME LUNAR AND SPACE CONDITIONS
Süleyman Salihler, Türkiye

13:20-13:30 IAC-24/A3/IPB/84063

AUTOMATIC LANDING-INFORMATION-BASED RECONSTRUCTION OF INTERNAL STRUCTURE FOR SMALL BODIES: MMX CASE
Zhonghuai Yan, China

SCREEN #14

12:30-12:40 IAC-24/A3/IPB/85630

A SURVEY OF GRAVITATIONAL MODELING TECHNIQUES FOR MINOR BODY PROXIMITY OPERATIONS
Carmine Buonagura, Italy

12:40-12:50 IAC-24/A3/IPB/90773

INFRARED VISION-BASED NAVIGATION FOR PLANETARY LANDING
Samuele Labò, Italy

12:50-13:00 IAC-24/A3/IPB/89783

ENHANCED AND EFFICIENT PROPULSION SYSTEM DESIGN FOR MOON VEHICLES FOR TRANSPORTATION ACROSS MOON'S SURFACE.
Diana Aljbour, Jordan

13:00-13:10 IAC-24/A3/IPB/84026

RESEARCH ON THE MARS ROVER-QUADROTOR COMBINED DETECTION SYSTEM BASED ON DATA-DRIVEN CONTROL
Junyi Wang, China

13:10-13:20 IAC-24/A3/IPB/91275

TOWARDS AUTONOMOUS NAVIGATION GUIDED BY NATURAL LANDMARKS ON THE MOON.
Cristina Pérez Ramos, Mexico

13:20-13:30 IAC-24/A3/IPB/88856

PRELIMINARY STUDY ON HOW AN AUTONOMOUS ROBOTIC SYSTEM CAN IMPACT THE CREW TIME DURING PLANT CULTIVATION ON THE LUNAR SURFACE
Andre Fonseca Prince, Germany

SCREEN #15

12:30-12:40 IAC-24/A3/IPB/90911

RELEVANT ENVIRONMENT TESTING OF HYDROPONIC CULTIVATION SYSTEM IN CAVE ANALOG MISSION: INSIGHT FROM THE GEA PROJECT
Linda Misercola, Italy

12:40-12:50 IAC-24/A3/IPB/84077

ENHANCING ADDITIVE MANUFACTURING OF LUNAR REGOLITH CERAMICS THROUGH MAGNETIC BENEFICIATION
Maxim Isachenkov, Italy

12:50-13:00 IAC-24/A3/IPB/83036

ADVANCING MOLten SALT ELECTROLYSIS FOR LUNAR ISRU: MATERIAL CHALLENGES, TESTING, AND SCALABILITY PERSPECTIVES
Francisco J. Guerrero-Gonzalez, Germany

13:00-13:10 IAC-24/A3/IPB/85538

BUILDING RESILIENT NETWORKS ON MARS: STRATEGIES FOR ENHANCED INTRA-PLANETARY AND INTERPLANETARY CONNECTIVITY
Toghrul Guluzade, Azerbaijan

13:10-13:20 IAC-24/A3/IPB/84330

DESIGN AND PERFORMANCE ANALYSIS OF LIGHTWEIGHT COMPOSITE WHEELS FOR THE PEEKBOT LUNAR ROVER
Henry Alejandro Flores, Canada

13:20-13:30 IAC-24/A3/IPB/82010

ASTEROID SPACE RESOURCES MAPPING AND EXPLOITATION: A MISSION CONCEPT APPROACH
Olasunkanmi Oladejo, Nigeria

Monday 14 October 2024

SCREEN #16

- 12:30-12:40 IAC-24/A3/IPB/81351**
COSMIC RAY SHIELDING PERFORMANCE EVALUATION OF MICROWAVE SINTERED KLS-1 LUNAR REGOLITH SIMULANT BLOCKS
Hyunwoo Jin, Korea, Republic of
- 12:40-12:50 IAC-24/A3/IPB/83072**
MARS CAVE RESEARCH STATION: PRINCIPIA MISSION
Rivaldo Carlos Duran Aquino, Peru
- 12:50-13:00 IAC-24/A3/IPB/83004**
EXPERIMENT ON PLUME REGOLITH INTERACTION IN MARTIAN ATMOSPHERIC CONDITIONS
senthilkumar subramanian, United Kingdom
- 13:00-13:10 IAC-24/A3/IPB/81773**
UNRAVELLING LUNAR MYSTERIES THROUGH WAVELET ANALYSIS OF APOLLO SEISMIC DATA
SHAMBHAVI A S, India
- 13:10-13:20 IAC-24/A3/IPB/84176**
INNOVATIVE STRATEGIES FOR MARTIAN EXPLORATION: AERODYNAMIC ANALYSIS OF SWARM UAVS FOR ENHANCED REMOTE SENSING
Prabhanjan Manjunath, India
- 13:20-13:30 IAC-24/A3/IPB/82233**
AVSAROM : AUTONOMOUS DECISION-MAKING SWARM UAVS FOR MARS EXPLORATION.
SHAMBHAVI A S, India

SCREEN #17

- 12:30-12:40 IAC-24/A3/IPB/85332**
DRONES IN SPACE SETTLEMENTS: NEW REGULATION OR OLD?
Katja Grünfeld, Slovenia
- 12:40-12:50 IAC-24/A3/IPB/89325**
NOVEL METHODOLOGIES IN THE QUEST FOR LIFE: ROBOTIC EXPLORATION OF THE OCEAN WORLD ENCELADUS
Mauro Franqueira, Portugal
- 12:50-13:00 IAC-24/A3/IPB/87401**
THE LUNAR CHESSBOARD: ASSESSING DIPLOMATIC STRATEGIES IN THE NEW SPACE AGE
Giulia Pascuzzi, Italy
- 13:00-13:10 IAC-24/A3/IPB/91651**
SELECTING THE MOST PROMISING LUNAR OXYGEN EXTRACTION FROM REGOLITH TECHNOLOGY
Katherine Addo
- 13:10-13:20 IAC-24/A3/IPB/87112**
CORRELATION OF OCCURRENCE OF DUST DEVILS WITH MARTIAN DICHOTOMY AND THEIR VARYING NATURE WITH MARS'S CRUSTAL MAGNETIC FIELD & APPLICABILITY IN FUTURE MARS MISSIONS
SHIVAM SAXENA, India
- 13:20-13:30 IAC-24/A3/IPB/86021**
DIGITAL TWIN AND PHYSICS INFORMED MACHINE LEARNING FOR ROVER MOTION SIMULATION
Gautier Bardi de Fourtou, United States

SCREEN #18

- 12:30-12:40 IAC-24/A3/IPB/84000**
TOWARDS SAFER PLANETARY EXPLORATION:\\ A HYBRID ARCHITECTURE FOR TERRAIN TRAVERSABILITY ANALYSIS IN MARS ROVERS
Achille Chiuchiarelli, Italy

- 12:40-12:50 IAC-24/A3/IPB/87517**
MOVIDA, A MICROBALANCE SYSTEM TO DETECT VOLATILES AND MONITOR CHARGING PROCESSES OF LUNAR DUST
Ernesto Palomba, Italy
- 12:50-13:00 IAC-24/A3/IPB/85769**
C.A.R.V.E.R
Carlos Manuel Breña Morales, Mexico
- 13:00-13:10 IAC-24/A3/IPB/89015**
DETECTING SOLAR ENERGETIC PARTICLE EVENTS AND THEIR IMPACTS ON MARS WITH THE SWEET ALGORITHM
Shayla Viet, Norway
- 13:10-13:20 IAC-24/A3/IPB/87561**
EXPLORING MARTIAN SEDIMENTARY ROCKS: INSIGHTS INTO THE RED PLANET'S GEOLOGICAL HISTORY
Aygul Aliyeva, Azerbaijan
- 13:20-13:30 IAC-24/A3/IPB/87914**
WE SENT A DRONE TO MARS, BUT DID WE CHOOSE THE RIGHT ONE? AN ANALYSIS OF VARIOUS DRONE CONFIGURATIONS AND THEIR VIABILITY AND APPLICABILITY FOR MARTIAN EXPLORATION MISSIONS
Damian Josue Guerra Guerra, Russian Federation

SCREEN #19

- 12:30-12:40 IAC-24/A3/IPB/87276**
ATMOSPHERIC ROBOT - FUNCTIONAL PROTOTYPE AND SYSTEM DESIGN
Erin Kennedy, Canada
- 12:40-12:50 IAC-24/A3/IPB/87267**
ATMOSPHERIC ROBOT - TESTING AND RESULTS AT THE MARS DESERT RESEARCH STATION
Erin Kennedy, Canada
- 12:50-13:00 IAC-24/A3/IPB/86661**
A NEW TYPE OF A NANO LUNAR ROVER STRUCTURE UTILIZING CARBON FIBER REINFORCED POLYMER
Yaqoob Alqassab, Bahrain
- 13:00-13:10 IAC-24/A3/IPB/87191**
TOWARDS A SUSTAINABLE LUNAR ECONOMY: SYSTEM ARCHITECTURE ANALYSIS FOR LUNAR COMMUNICATION AND NAVIGATION INFRASTRUCTURE
Thomas Heath, United Kingdom
- 13:10-13:20 IAC-24/A3/IPB/89304**
SPACE ACCESSORIES FOR LUNAR MOBILITY AND EXPLORATION VEHICLE
Diego Cagna, Italy
- 13:20-13:30 IAC-24/A3/IPB/86007**
LUNAR WATER ANALYSIS MODULE WITH DIRECT MEASUREMENT
Mayuko Shinohara, Japan

SCREEN #20

- 12:30-12:40 IAC-24/A3/IPB/89091**
LUNAR TRANSFER TRAJECTORIES TO QUASI-STABLE DISTANT RETROGRADE ORBITS USING INDIRECT OPTIMIZATION METHOD
Daniele Pice, Italy
- 12:40-12:50 IAC-24/A3/IPB/89090**
MINIMUM-PROPELLANT OPTIMAL TRAJECTORIES FOR THE DE-ORBITING OF DECOMMISSIONED SATELLITES IN LUNAR POLAR GRAVEYARD REGIONS
Alessandro Nitti, Italy

Monday 14 October 2024

12:50-13:00 IAC-24/A3/IPB/90229

MICROLIBS: ELEMENTAL MICRO-MAPPING FOR PLANETARY EXPLORATION

Charles Yana, France

13:00-13:10 IAC-24/A3/IPB/90134

EVERYTHING IS AWESOME IF YOU ARE PART OF A (ROBOTIC) TEAM: PRELIMINARY INSIGHTS FROM THE FIRST ISS-TO-SURFACE MULTI-ROBOT COLLABORATION WITH SCALABLE AUTONOMY TELEOPERATION

Neal Y. Lij, Germany

13:10-13:20 IAC-24/A3/IPB/84247

FROM RTGS TO MEGSAT: ADVANCING POWER GENERATION FOR FUTURE MARS HABITATS

Margherita Maria Revellino, Italy

13:20-13:30 IAC-24/A3/IPB/83975

AN ADAPTIVE SPOKED WHEELED ASTEROID SURFACE ROVER

Liangna Fu, China

SCREEN #21

12:30-12:40 IAC-24/A3/IPB/91261

MONARCH: DESIGNING MARS' FIRST METEOROLOGICAL OBSERVATION NETWORK FOR FUTURE HUMAN EXPLORATION

Mariangela Testa, Italy

12:40-12:50 IAC-24/A3/IPB/87719

MILI PROJECT, THERMO-MECHANICAL DESIGN OF A MINIATURIZED LIDAR FOR MARS ADVANCED ATMOSPHERIC RESEARCH

Diego Scaccabarozzi

12:50-13:00 IAC-24/A3/IPB/87259

RAPID AUTONOMOUS NAVIGATION METHOD FOR HOPPING MOVEMENT ON THE SURFACE OF SMALL BODIES

Zhe Yang, China

13:00-13:10 IAC-24/A3/IPB/91403

WISDOMOON: AN INNOVATIVE GPR FOR LUNAR MISSIONS

Charles Yana, France

13:10-13:20 IAC-24/A3/IPB/89985

CHANDRAYAAN-3 POWER DESCENT 6DOF SIMULATION SOFTWARE

Goruputi Chaitanya, India

13:20-13:30 IAC-24/A3/IPB/85926

THE EMIRATES MISSION TO THE ASTEROID BELT: AN OVERVIEW OF THE FLIGHT DYNAMICS SYSTEM

Fatema Al Hameli, United Arab Emirates

SCREEN #22

12:30-12:40 IAC-24/A2/IPB/88409

LOW-COST PAYLOAD FOR SPACE BIOLOGY EXPERIMENTS IN PARABOLIC FLIGHTS

Florence Pauline Basubas

12:40-12:50 IAC-24/A2/IPB/82631

MATHEMATICAL MODELING AND DESIGN OF A 6-DEGREE OF FREEDOM ROBOT ARM FOR MICROGRAVITY APPLICATIONS.

M.omar ALBALBAKI, Jordan

12:50-13:00 IAC-24/A2/IPB/91864

EFFECTS OF MICROGRAVITY ON ASTRONAUTS' OPERATION PERFORMANCE AND SPATIAL AWARENESS

Sanmathi Priya Abiram Lakshmi Devi

13:00-13:10 IAC-24/A2/IPB/90291

REVOLUTIONIZING PROTEIN CRYSTALLIZATION FOR IN-SPACE MANUFACTURING: MICROGRAVITY'S INFLUENCE ON FLUID DYNAMICS, EXPERIMENTAL TECHNIQUES, AND BIOLOGICAL IMPLICATIONS.

Rina Choudhary, India

13:10-13:20 IAC-24/A2/IPB/90280

CYBER-ASSURED SPACE INTERNET DEVICE (CASI-D)

Kevin Jackson, United States

13:20-13:30 IAC-24/A2/IPB/91799

GRANULAR SHEAR-FLOW INSTABILITY IN THE EPSTEIN REGIME UNDER MICROGRAVITY CONDITIONS

Holly L. Capelo

SCREEN #23

12:30-12:40 IAC-24/A2/IPB/89928

BIOMANUFACTURING IN LOW EARTH ORBIT

Molly Mulligan

12:40-12:50 IAC-24/A2/IPB/91053

IN SPACE OPPORTUNITIES FOR BIOMEDICAL MANUFACTURING PHARMACEUTICAL DEVELOPMENT, BIOMANUFACTURING, AND ADDITIVE MANUFACTURING

Shawna Pandya, Canada

12:50-13:00 IAC-24/A2/IPB/86898

MICROGRAVITY EXPERIMENTS AND THEIR TRANSFORMATIVE INFLUENCE ON SPACE EXPLORATION: A COMPREHENSIVE REVIEW OF CURRENT PROGRESS AND FUTURE PROSPECTS

Amin Ahmadov

13:00-13:10 IAC-24/A2/IPB/85033

BRIDGING THE COSMIC GAP: BIOENGINEERED PLANTS AND CARBON MANAGEMENT IN MICROGRAVITY

Telman Mammadov

13:10-13:20 IAC-24/A2/IPB/83354

HYBRID ADDITIVELY-MANUFACTURED SATELLITE TECHNOLOGY EXPERIMENTS (HASTE)

Christopher Hartney, United States

13:20-13:30 IAC-24/A2/IPB/91433

IN-SPACE MANUFACTURING OF FUNCTIONAL SENSORS

Seetha Raghavan, United States

SCREEN #24

12:30-12:40 IAC-24/A4/IPB/90674

THE HISTORY OF THE SEARCH FOR LIFE IN THE UNIVERSE - A DOCUMENTARY

Alissa J. Haddaji, United States

12:40-12:50 IAC-24/A4/IPB/82899

ARTIFICIAL SINGULARITY POWER ENGINES: A BASIS FOR DEVELOPING AND DETECTING ADVANCED SPACEFARING CIVILIZATIONS

Robert Zubrin, United States

12:50-13:00 IAC-24/A4/IPB/90566

THE WASTE SCALE OF CIVILIZATIONAL DEVELOPMENT

Clément Vidal, Belgium

13:00-13:10 IAC-24/A4/IPB/81012

STRANGE OPTICAL PULSES IN STARLIGHT FROM HD89389 AND HD217014

Richard Stanton

13:10-13:20 IAC-24/A4/IPB/91827

CONDUCTING HIGH FREQUENCY RADIO SETI SEARCHES USING ALMA

Louisa Mason

13:20-13:30 IAC-24/A4/IPB/81297

GALACTIC CARGO CULT

Gabriel G. De la Torre, Spain

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SCREEN #25

12:30-12:40 IAC-24/A4/IPB/88503
THE DISCOVERY OF ALIEN LIFE AND HOW THAT COULD IMPACT
FUNDAMENTAL HUMAN BELIEFS, SOCIETAL VIEWS AND
PHILOSOPHIES
Samiksha Raviraja, United Kingdom

12:40-12:50 IAC-24/A4/IPB/88451
PERSPECTIVES ON THE RIGHTS OF THE MOON FROM OCEANIA
Kate Genevieve, United Kingdom

13:20-13:30 IAC-24/A4/IPB/82395
RAPID ALIEN LANGUAGE CATEGORIZATION - FRAMEWORK
FOR THE TIME-SENSITIVE INTERPRETATION OF ALIEN
COMMUNICATION FOR INTELLIGENT ALIEN LIFE TO PREVENT
DESTRUCTION TO EITHER SPECIES
Samiksha Raviraja, United Kingdom

SCREEN #26

12:30-12:40 IAC-24/A5/IPB/81518
UAV-AIDED MARTIAN GEOLOCATION THROUGH IMAGE
RECOGNITION
Tomás Ignacio Burrón, Spain

12:40-12:50 IAC-24/A5/IPB/82866
SPACE BEES - COMPARISON OF BREEDING METHODS AND THE
TOP CHOICE OF SPECIES WITH THE GREATEST POTENTIAL TO
POLLINATE EXTRATERRESTRIAL CROPS
Dagmara Stasiowska, Poland

13:20-13:30 IAC-24/A5/IPB/83986
WHICH ARE BETTER: RETROGRADE OR PROGRADE ORBITS FROM
THE PERSPECTIVE OF PLANETARY MISSION DESIGN
Yuying Liang, China

SCREEN #27

12:30-12:40 IAC-24/A5/IPB/86345
COMPRESSIVE AND TENSILE STRENGTH EVALUATION OF A
LAYERED-MATERIAL COMPOSED OF LUNAR REGOLITH SIMULANT
AND EPOXY RESIN FOR THE CONSTRUCTION OF LUNAR
SETTLEMENTS.
Alonso Viana Guzmán, Costa Rica

12:40-12:50 IAC-24/A5/IPB/90923
IMPLEMENTATION OF DISRUPTIVE TECHNOLOGIES IN THE
DESIGN AND MODULAR OPERATION OF A GREENHOUSE
FOCUSED ON A LONG-TERM LUNAR BASE
Karla Fabiola Mayo Sánchez, Mexico

13:20-13:30 IAC-24/A5/IPB/81449
WATER IN-SITU RESOURCE UTILIZATION FOR SUSTAINABLE
MANNED EXPLORATION OF MARS
Arturo Pulido Balderas, Mexico

SCREEN #28

12:30-12:40 IAC-24/A5/IPB/85042
TOPOGRAPHICAL DATA FROM SPACE AS ELEMENTARY IN
PLANNING DESIGN TRANSFORMATIONS FOR SPACE HABITATS
Aathira Peedikaparambil Somasundaran, United Kingdom

13:20-13:30 IAC-24/A5/IPB/90587
THE HORT3SPACE EXPERIMENT: HYDROPONIC SYSTEM FOR LIFE
SUPPORT
Linda Misercola, Italy

SCREEN #29

12:30-12:40 IAC-24/A6/IPB/82280
DEEP NEURAL NETWORK-BASED ROBUST COLLISION AVOIDANCE
CONTROL OF SPACE MANIPULATOR FOR ACTIVE DEBRIS
REMOVAL
Shabadini Sampath, United Kingdom

12:40-12:50 IAC-24/A6/IPB/86889
OPTIMAL ACTIVE DEBRIS REMOVAL SEQUENCE IDENTIFICATION
THROUGH COMBINED DEBRIS INDEX ANALYSIS AND LONG-TERM
PROJECTION OF THE ORBITAL ENVIRONMENT
Lorenzo Giudici, Italy

12:50-13:00 IAC-24/A6/IPB/86639
APPLICATION OF ACTIVE FEEDBACK CONTROL FOR
INVESTIGATION OF DEBRIS MITIGATION STRATEGIES ON A
DENSITY-BASED MODEL OF THE POPULATION EVOLUTION
Martina Rusconi

13:00-13:10 IAC-24/A6/IPB/84923
MULTIFIDELITY-BASED MONTE CARLO FOR UNCERTAINTY
QUANTIFICATION IN SPACE OBJECT RE-ENTRY SIMULATION
Tommy Williamson, United Kingdom

13:10-13:20 IAC-24/A6/IPB/89038
HIGH-FIDELITY LOW-EARTH ORBIT COLLISION AVOIDANCE
TRAJECTORIES USING BANG-BANG OPTIMAL CONTROL LAWS
Giacomo Sarcletti, Italy

13:20-13:30 IAC-24/A6/IPB/86763
A NEW COMPLIANCE VERIFICATION BASELINE AND A FIRST LOOK
INTO ESA'S UPCOMING MASTER FUTURE POPULATION
Andre Horstmann, Germany

SCREEN #30

12:30-12:40 IAC-24/A6/IPB/87349
EFFICIENT CLOSE-RANGE NAVIGATION AROUND A KNOWN
UNCOOPERATIVE RESIDENT SPACE OBJECT
Roman Prokazov, Italy

12:40-12:50 IAC-24/A6/IPB/87970
MEZZOCIELO: A NOVEL TYPE OF WIDE FIELD OF VIEW TELESCOPE
TO DETECT AND MONITOR SPACE DEBRIS
Silvio Di Rosa, Italy

12:50-13:00 IAC-24/A6/IPB/88026
CATALOGUE-BASED SCREENING FOR IN-ORBIT PROXIMITY AND
THREAT DETECTION
Annarita Argirò, Italy

13:00-13:10 IAC-24/A6/IPB/85107
SPARSE IDENTIFICATION AND PREDICTION OF CONTINUOUS

THRUST MANOEUVRES
Tristan Leuridan, United Kingdom

13:10-13:20 IAC-24/A6/IPB/88785
SIMULATING ACTIVE DEBRIS REMOVAL MISSIONS
Grace Taylor, United Kingdom

13:20-13:30 IAC-24/A6/IPB/81077
DEBRIS DETECTION USING STAR TRACKER CONCEPT
VERIFICATION
Laila Kazemi

SCREEN #31

12:30-12:40 IAC-24/A6/IPB/90555
FROM SPACE-JUNK TO INTELLECTUAL TREASURE: PROTECTING IP
RIGHTS IN ACTIVE DEBRIS REMOVAL
Eleni Koumbarou, Greece

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12:40-12:50 IAC-24/A6/IPB/89030

FROM SPACE TRAFFIC MANAGEMENT TO SPACE CARRYING CAPACITY ASSESSMENT AND ALLOCATION: A POTENTIAL SOLUTION

Eva Yi-Wei Chang, Korea, Republic of

12:50-13:00 IAC-24/A6/IPB/87269

HITTING A MOVING TARGET – ADRAS-J LAUNCH TARGETING TO RENDEZVOUS WITH A DERELICT RESIDENT SPACE OBJECT

Roger Gutierrez-Ramon, Japan

13:00-13:10 IAC-24/A6/IPB/91039

COLLISION AVOIDANCE AND DISTURBANCE MINIMIZATION THROUGH DEEP REINFORCEMENT LEARNING CONTROL OF A FREE-FLOATING SPACE MANIPULATOR

Muneeb Arshad

13:10-13:20 IAC-24/A6/IPB/83346

SPACE DEBRIS IMPACT ANALYSIS FOR LUNAR-BOUND SPACECRAFT IN LEO

Gagandeep Kaur

13:20-13:30 IAC-24/A6/IPB/87330

SUPPORTING PROXIMITY OPERATIONS BY DIRECT MEASUREMENTS OF RELATIVE SERVICER-CLIENT STATE USING RESOLVED IMAGERY

Aleksander Lidtke, Japan

SCREEN #32

12:30-12:40 IAC-24/A6/IPB/83205

PROP-SAFE: EMPOWERING SPACE MISSION PROPAGATION WITH PERSONALIZED SOLUTIONS

Arianna Rigo, Portugal

12:40-12:50 IAC-24/A6/IPB/84974

AN ELECTROSTATIC INTERACTION CALCULATING METHOD FOR A SPACE NON-COOPERATIVE TARGET BASED ON POINT CLOUDS

heng jing, China

12:50-13:00 IAC-24/A6/IPB/83878

COLD-WELDING IN SPACE: ASTROBEAT'S NOVEL APPROACH TO SPACECRAFT HULL REPAIR

Leonardo Barilaro

13:00-13:10 IAC-24/A6/IPB/85251

FAST CHARACTERIZATION OF IN-ORBIT FRAGMENTATIONS

Luigi Gisolfi

13:10-13:20 IAC-24/A6/IPB/91800

SIMULATION AND DESIGN OF LASER-BASED SATELLITE DETUMBLING AND DEBRIS REMOVAL METHODOLOGY

Aditya Baraskar

13:20-13:30 IAC-24/A6/IPB/86690

A COMPREHENSIVE ASSESSMENT OF ROCKET BODY RELATED SPACE DEBRIS AND DISCUSSION OF SUITABLE MEANS OF RISK REDUCTION.

Sophie Förste

SCREEN #33

12:30-12:40 IAC-24/A6/IPB/91582

CHALLENGES OF AI-BASED FDI FOR LEO SATELLITES IN THE CONTEXT OF DEBRIS REDUCTION

Tatiana Fontana

12:40-12:50 IAC-24/A6/IPB/90757

ROBUST METRIC FOR SPACECRAFT COLLISION RISK ESTIMATION

yema paul

12:50-13:00 IAC-24/A6/IPB/85925

EVENT RECONSTRUCTION OF LONG MARCH 3B ROCKET STAGE RE-ENTRY OBSERVED BY ALL-SKY METEOR ORBIT SYSTEM

Daniela Bartková, Slovak Republic

13:00-13:10 IAC-24/A6/IPB/88833

QUADRANT ANALYSIS METHOD FOR DETERMINING OPTIMUM THRUST DIRECTION IN COLLISION AVOIDANCE MANEUVERS FOR LEO SATELLITES

Uzay Tugcular, Türkiye

13:10-13:20 IAC-24/A6/IPB/82679

EXPLORING FUNCTIONAL CONNECTIONS THEORY AND LINEARIZED APPROACHES IN COLLISION AVOIDANCE MANEUVER DESIGN: A COMPARATIVE STUDY

David Pérez López, Spain

13:20-13:30 IAC-24/A6/IPB/82214

EVALUATION EFFECT OF HARPOON TIP SHAPE THAT HAS MANY CONTACT POINTS FOR CAPTURING SPACE DEBRIS ON PENETRATION BEHAVIOR

Yuto Tamaki

SCREEN #34

12:30-12:40 IAC-24/A6/IPB/84002

STRUCTURAL ANALYSIS OF THE INFLATABLE DEPLOYABLE BOOMS IN A DEORBITING SYSTEM FOR CUBESATS IN LEO

Claudia Rodriguez, The Netherlands

12:40-12:50 IAC-24/A6/IPB/85736

SEARCH FOR MEO LONG-TERM REENTRY DISPOSAL ORBITS NEAR GPS WITH REDUCED REENTRY CASUALTY RISK

Alan B. Jenkin

12:50-13:00 IAC-24/A6/IPB/88353

PLANAR RETROREFLECTORS FOR NON-COOPERATIVE OBJECT TRACKING VIA SATELLITE LASER RANGING

Daniel Stumpf, The Netherlands

13:00-13:10 IAC-24/A6/IPB/90010

ORBIT NORMALIZATION POLICY: THE SIGNIFICANCE AND EFFECTIVENESS OF A NON-INCREMENTAL APPROACH TO SPACE DEBRIS REMOVAL THROUGH PMD DEVICES

Yasuhito Uto

13:10-13:20 IAC-24/A6/IPB/91177

ADVANCEMENTS IN UK ACTIVE DEBRIS REMOVAL: A COMPREHENSIVE OVERVIEW OF THE UK SPACE AGENCY'S MISSION

Jodie Howlett

13:20-13:30 IAC-24/A6/IPB/88494

INNOVATIVE METHOD FOR EXAMINING THE ORBITAL PROGRESSION OF A DEBRIS CLOUD

Rachit Bhatia

SCREEN #35

12:30-12:40 IAC-24/A6/IPB/90664

3DOF AIR BEARING PLATFORM AS A TESTBED FOR A GECKO GRIPPER

ACTIVE DEBRIS REMOVAL MECHANISM

Jaxson Hill, United States

12:40-12:50 IAC-24/A6/IPB/85427

A VIRTUAL CONJUNCTIONS GENERATOR FOR TESTING SPACECRAFT COLLISION DETECTION STRATEGIES

Dario Modenini, Italy

12:50-13:00 IAC-24/A6/IPB/82801

STRATEGIES FOR DIVERSIFYING THE ACQUISITION OF ORBITAL INFORMATION ON SPACE OBJECTS: RADAR SYSTEM PLANNING, OPTICAL SYSTEM PERFORMANCE ANALYSIS, AND DEVELOPMENT OF PASSIVE RF SYSTEMS.

Saeahan Song, Korea, Republic of

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13:00-13:10 IAC-24/A6/IPB/82076
PLANNING ACTIVE MULTI-DEBRIS REMOVAL MISSION USING DEEP REINFORCEMENT LEARNING
Hugo de Rohan Willner

13:10-13:20 IAC-24/A6/IPB/89523
RESEARCH ON THE INTERPOLATION OF EARTH ATMOSPHERE DENSITY
Aleksandr Kuznetsov, Russian Federation

13:20-13:30 IAC-24/A6/IPB/87062
GLOBAL SPACE DEBRIS INSURANCE POOL AS A VIABLE MECHANISM FOR SUSTAINABLE SPACE ACTIVITIES
Yangzi Tao

SCREEN #36

12:30-12:40 IAC-24/A6/IPB/84740
SPATIAL NON-COOPERATIVE TARGET DETECTION AND TRACKING BASED ON NEUROMORPHIC SENSORS
Yashi Lei, China

12:40-12:50 IAC-24/A6/IPB/89122
AN ATTRIBUTIONAL ASSESSMENT OF A PROSPECTIVE GLOBAL SPACE TRAFFIC MANAGEMENT SYSTEM
Mahhad Nayyer

12:50-13:00 IAC-24/A6/IPB/89965
SOLUTIONS FOR LEO SATELLITE RESILIENCE AND LAST RESORT DISPOSAL
Ben Taylor, New Zealand

13:00-13:10 IAC-24/A6/IPB/87756
PERSISTENT SIGNATURES FOR SPACE OBJECT FINGERPRINTING
Moritz Kuhn, Germany

13:10-13:20 IAC-24/A6/IPB/84818
INNOVATIVE APPROACH FOR REAL-TIME TLE IMPROVEMENT BASED ON THE OPTICAL PASSIVE MEASUREMENTS
Matej Zigo, Slovak Republic

13:20-13:30 IAC-24/A6/IPB/85149
SR-SAT: MULTIFUNCTIONAL CUBESAT DESIGN FOR SPACE DEBRIS SURVEILLANCE
Ziyu Zhou, China

SCREEN #37

12:30-12:40 IAC-24/A6/IPB/88777
A NUMERICAL MODEL FOR CFRP FRAGMENTATION UNDER HYPERVELOCITY IMPACTS
Stefano Lopresti

12:40-12:50 IAC-24/A6/IPB/86723
DEVELOPMENT OF KOREA ORBITAL DEBRIS EVOLUTIONARY AND ENGINEERING MODEL
Jinsung Lee, Korea, Republic of

12:50-13:00 IAC-24/A6/IPB/82416
DESIGN OF A TRANSFORMABLE SOFT-BODY STRUCTURE FOR PROTECTING SPACECRAFTS FROM IMPACTING OF HIGH-VELOCITY SPACE DEBRIS
Hao Liu, China

13:00-13:10 IAC-24/A6/IPB/82979
IMPACT OF A ROLLING SHUTTER ON LIGHT CURVES OF RESIDENT SPACE OBJECTS IN HIGH ALTITUDE ORBITS
Yonathan Ascanio Hecker

13:10-13:20 IAC-24/A6/IPB/88849
ATTITUDE DETERMINATION OF H-2A ROCKET BODIES BY USING PHOTOMETRIC MEASUREMENTS
Tomáš Hrobár

13:20-13:30 IAC-24/A6/IPB/83960
TEST CAMPAIGN OF THE OPTIMIZED MAINTENANCE AND SURVEY TASKING (OMST) STRATEGY WITH MULTIPLE TELESCOPE STATIONS
Johannes Herzog

SCREEN #38

12:30-12:40 IAC-24/A7/IPB/81265
ATTITUDE ESTIMATION STRATEGIES FOR CUBESPEC MISSION WITH A MULTI-STAR TRACKER ADCS
Laila Kazemi, Belgium

12:40-12:50 IAC-24/A7/IPB/86570
HIGH ACCURACY POINTING AND STABLE CONTROL SYSTEM FOR INDIAN SOLAR MISSION (ADITYA-L1)
Amit Singh, India

13:10-13:20 IAC-24/A7/IPB/83722
A CORRELATION OF EINSTEIN'S COSMOLOGICAL CONSTANT IN ANTI-DE SITTER SPACETIME WITHOUT NEGATIVE VACUUM PRESSURE
Kevin Simmons, United States

13:20-13:30 IAC-24/A7/IPB/87636
SUSTAINING THE MOORE'S LAW ANALOG FOR EXOPLANETS
W. Garrett Levine, United States

SCREEN #39

12:30-12:40 IAC-24/A7/IPB/91681
INTERFACE BETWEEN ASTRONOMY AND AI: FINDING GDOR/DSCT HYBRIDS WITH TESS AND MACHINE LEARNING
Mykyta Kliapets

13:10-13:20 IAC-24/A7/IPB/90145
UNVEILING THE SECRETS OF THE SOLAR SYSTEM: A QUEST FOR PLANET NINE
Mehdi Lali, United States

13:20-13:30 IAC-24/A7/IPB/88004
ASTEROID MINING: ECONOMIC FEASIBILITY AND TECHNOLOGICAL CHALLENGES
Fakhri Amanov, Azerbaijan

SCREEN #40

12:50-13:00 IAC-24/A7/IPB/90948
UNVEILING ROGUE EXOPLANETS: SWARM CUBESAT TELESCOPE
Ankitha Kamath, India

13:10-13:20 IAC-24/A7/IPB/84344
SOLAR ELECTROMAGNETIC LENSING (SEL), GEOMETRY, AND ASTROPHYSICS FOR EXOPLANET IMAGING AND COMMUNICATION
Kole Lutz, United States

13:20-13:30 IAC-24/A7/IPB/88128
DEVELOPMENT OF SOLAR SAIL TECHNOLOGY TO ACHIEVE IMPROVEMENTS IN SPACE WEATHER FORECASTING
Irfan Azeem, United States

SCREEN #41

12:30-12:40 IAC-24/A7/IPB/82125
TOO HOT TO HANDLE? PLANETARY PROTECTION CONCERNS FOR NUCLEAR SPACE MISSIONS TO PLANETARY SURFACES
Jaclyn jaclyn.wiley, United States

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13:10-13:20 IAC-24/A7/IPB/83386
QUANTUM COMPUTING FOR DEEP SPACE PHYSICS APPLICATIONS
Enrico Prati

13:20-13:30 IAC-24/A7/IPB/91242
LEVERAGING THE SOFT POWER OF SPACE SCIENCE IN EUROPE
Gabriele Redigonda, Italy

SCREEN #42

12:30-12:40 IAC-24/C1/IPB/83845
CONTROLLABILITY OF ORBITING SOLAR REFLECTORS UNDER STRUCTURAL FAILURES.
Iain Moore

12:40-12:50 IAC-24/C1/IPB/91066
DESIGN OF PERIODIC ORBIT INCLINED TO THE SUN LINE AROUND AN ASTEROID WITH IMPERFECTLY REFLECTING SOLAR SAIL
Moe Yasuda, Japan

12:50-13:00 IAC-24/C1/IPB/84302
ON THE REFINEMENT OF LOW-ENERGY EARTH-MOON TRANSFER FAMILIES INTO AN EPHEMERIS MODEL
Claudio Toquinho Campana, Italy

13:00-13:10 IAC-24/C1/IPB/84796
IN-ORBIT ALLAN VARIANCE FOR GYROSCOPE NOISE CHARACTERIZATION IN EARTH OBSERVATION SATELLITES
Tomás Ignacio Burroni, Spain

13:10-13:20 IAC-24/C1/IPB/87909
DESIGN AND OPTIMIZATION OF MULTI-RENDEZVOUS MANEUVERS BASED ON REINFORCEMENT LEARNING AND CONVEX OPTIMIZATION
Antonio López Rivera

13:20-13:30 IAC-24/C1/IPB/83783
ANALYSIS OF MULTIPLE GRAVITY-ASSIST OPPORTUNITIES BASED ON FEASIBILITY DOMAINS
Zhiyuan Cao

SCREEN #43

12:30-12:40 IAC-24/C1/IPB/81846
VIGIL – TRANSFER DESIGN FOR THE EUROPEAN SPACE AGENCY'S SPACE WEATHER MISSION TO THE SUN-EARTH LIBRATION POINT 5
Florian Renk

12:40-12:50 IAC-24/C1/IPB/81118
ATTITUDE AND BIAS ESTIMATION OF THE AGILE SATELLITE WITH HIGH DYNAMIC PERFORMANCE BASED ON L1-TSAKF
Boyu Yang, China

12:50-13:00 IAC-24/C1/IPB/86587
TRAJECTORY DESIGN OF NRHO TRANSFER WITH CONTINUOUS LAUNCH WINDOW FOR LOGISTICS RESUPPLY MISSION TO GATEWAY
Junji Kikuchi, Japan

13:00-13:10 IAC-24/C1/IPB/86585
ROBUSTNESS ASSESSMENT OF ASTEROID APPROACH TRAJECTORY REGARDING THRUSTER FAILURES AND MISSED MANEUVERS
Paul Pinteau, France

13:10-13:20 IAC-24/C1/IPB/82958
CHAOTIC BEHAVIOR OF HIGH AND ECCENTRIC EARTH ORBITS--- THE CASE OF ESA'S INTEGRAL SPACE OBSERVATORY
Juan Félix San-Juan, Spain

13:20-13:30 IAC-24/C1/IPB/84686
NON-SMOOTH DEVIATION EVOLUTION ANALYSIS IN Cislunar MIDCOURSE CORRECTION TRAJECTORY UNDER MANEUVER EXECUTION THRESHOLD
Zeyue Li, China

SCREEN #44

12:30-12:40 IAC-24/C1/IPB/85150
CHARACTERIZATION OF ORBITS IN Cislunar SPACE FOR SPACE TRAFFIC MANAGEMENT
Sourav Ghosh, India

12:40-12:50 IAC-24/C1/IPB/84716
GENERAL APPROACH TO SOLVE LOW-THRUST MULTI-TARGET SPACE LOGISTICS PROBLEMS
Riccardo Apa, Italy

12:50-13:00 IAC-24/C1/IPB/89685
OPTIMAL CONTROL OF SPACECRAFT WITH AN AIR-BREATHING ELECTRIC PROPULSION IN ULTRA-LOW ORBITS
Olga Yanova, Russian Federation

13:00-13:10 IAC-24/C1/IPB/87864
ADVANCING SOLUTIONS FOR THE THREE-BODY PROBLEM THROUGH PHYSICS-INFORMED NEURAL NETWORKS
Manuel Pereira

13:10-13:20 IAC-24/C1/IPB/86096
LOW-THRUST ASSISTED PERIODIC ORBITS AROUND SMALL BODIES VIA INDIRECT OPTIMAL CONTROL
Shanshan Pan

13:20-13:30 IAC-24/C1/IPB/88170
CNN-BASED VISUAL NAVIGATION: OPTIMIZATION STRATEGIES FOR MONOCULAR POSE ESTIMATION IN PROXIMITY OPERATIONS
Lucrezia Lovaglio, Italy

SCREEN #45

12:30-12:40 IAC-24/C1/IPB/90420
EXPLORING NEW PERIODIC ORBITS FOR THE N-BODY PROBLEM
Margaux Introna, Italy

12:40-12:50 IAC-24/C1/IPB/88697
LONG-TERM EVOLUTION OF ORBITS IN Cislunar SPACE: CHARACTERISATION AND STABILITY ANALYSIS
Mathilda Bolis, Italy

12:50-13:00 IAC-24/C1/IPB/88001
DRAG COUPLING OF ATTITUDE AND ORBITAL DYNAMICS FOR LEO SATELLITES.
Thomas McIlwraith, United Kingdom

13:00-13:10 IAC-24/C1/IPB/89045
AN EFFICIENT OPTICAL NAVIGATION MODEL FOR MONTE-CARLO FEASIBILITY ANALYSIS: LIMITS OF HORIZON-BASED Cislunar AUTONOMY
Emma Topolcsik

13:10-13:20 IAC-24/C1/IPB/84587
DESIGNING Cislunar CO-ORBITAL TRANSFER NETWORKS IN THE EARTH-MOON SYSTEM
Ying Ding

13:20-13:30 IAC-24/C1/IPB/84119
NUMERICAL CONTINUATION AND STATIONKEEPING OF QUASI-PERIODIC QUASI-SATELLITE ORBITS AROUND PHOBOS
Xiaoyu Fu, United Kingdom

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SCREEN #46

12:30-12:40 IAC-24/C1/IPB/84110
ACCELERATING MEGA-CONSTELLATION DESIGN: EFFICIENT VISIBILITY COMPUTATION AND MULTI-SHELL OPTIMISATION
Vassili Tunjov

12:40-12:50 IAC-24/C1/IPB/83907
A POLYNOMIAL-BASED DIFFERENTIAL DYNAMIC PROGRAMMING OPTIMISATION METHOD FOR SPACE TRAJECTORY DESIGN
Thomas Caleb, France

12:50-13:00 IAC-24/C1/IPB/84169
ADVANCED ATTITUDE DETERMINATION AND CONTROL TESTING IN A MODULAR SOLUTION
Riccardo Spartà, Italy

13:00-13:10 IAC-24/C1/IPB/89798
REGULARIZATION AND A HYBRID PSEUDOSPECTRAL, SHAPE-BASED SOLVER FOR LOW-THRUST OPTIMAL CONTROL
Sergio Cuevas del Valle, Spain

13:10-13:20 IAC-24/C1/IPB/89801
EXPLOITING GAUGE FREEDOM IN KS VARIABLES FOR HIGH-PERFORMANCE NUMERICAL ORBITAL PROPAGATION
Sergio Cuevas del Valle

13:20-13:30 IAC-24/C1/IPB/88357
OPTIMAL FAR-RANGE RENDEZVOUS TRAJECTORY DESIGN OF LOW-THRUST ELECTRIC PROPULSION SPACECRAFT USING DEEP REINFORCEMENT LEARNING
Arya Das, India

SCREEN #47

12:30-12:40 IAC-24/C2/IPB/90106
TEST AND SIMULATION IN HIGH-ENTHALPY ATMOSPHERIC RE-ENTRY CONDITIONS OF MULTI-PHASE ULTRA-HIGH-TEMPERATURE CERAMICS
Stefano Mungiguerra, Italy

12:50-13:00 IAC-24/C2/IPB/83569
SPACECRAFT MATERIALS ANALYSIS IN LEO AND VLEO ORBITS UNDER ATOMIC OXYGEN INTERACTION
Salvatore Rea, Italy

13:20-13:30 IAC-24/C2/IPB/82959
INVESTIGATING CARBON FIBER REINFORCED POLYMER COMPOSITES FOR ENHANCED CUBESAT STRUCTURAL DESIGN
Ashraf Khater, Bahrain

SCREEN #48

12:30-12:40 IAC-24/C2/IPB/87705
ASSESSMENT OF THE MANUFACTURING FEASIBILITY OF THE FLEXIBLE TPS BY FILAMENT WINDING
Artem Andrianov, Brazil

12:40-12:50 IAC-24/C2/IPB/85317
STUDY OF THE INFLUENCE OF CONTACT MODEL PARAMETERS ON A BERTHING OPERATION
Davide Sorli, Italy

12:50-13:00 IAC-24/C2/IPB/86471
EPOXY-CERAMIC AS ANTICORROSIVE AIRCRAFT COATING
Rogelio Vazquez Camacho, Mexico

13:10-13:20 IAC-24/C2/IPB/90425
NUMERICAL AND EXPERIMENTAL APPROACH FOR THE DESIGN OF CMC AND UHTCMC REUSABLE STRUCTURES: RESULTS OF AM3AC2A PROJECT
ALESSANDRO AIROLDI

13:20-13:30 IAC-24/C2/IPB/84282
EVALUATION OF MATERIAL DEGRADATION IN C/SIC COMPOSITE SUBJECTED TO REENTRY CONDITIONS
Marco Riva, Italy

SCREEN #49

12:30-12:40 IAC-24/C2/IPB/81065
STRUCTURAL DESIGN, SIMULATION, AND TESTING OF THE BIRDS-X PROJECT'S SATELLITE DRAGONFLY
Jorge Rubén Casir Ricaño, Japan

13:10-13:20 IAC-24/C2/IPB/86873
A SPECIAL INSULATED PASS-THROUGH FOR CRYOGENICS
Andrea Zanin, Italy

13:20-13:30 IAC-24/C2/IPB/87008
FUNCTIONAL BEHAVIOUR OF NITI COMPLEX GEOMETRIES FOR INNOVATIVE SMART STRUCTURES MANUFACTURED BY SELECTIVE LASER MELTING
Tiziana Biasutti, Italy

SCREEN #50

12:30-12:40 IAC-24/C2/IPB/88537
THE FUTURE UNFOLDS - SIMPLIFYING POLYHEDRAL SPACE HABITAT MODULE DEPLOYMENT USING A CONTIGUOUS UNFOLDING METHOD
Elliott Ruzicka, United States

12:40-12:50 IAC-24/C2/IPB/83275
A DEPLOYABLE AND RETRACTABLE INFLATABLE LINK FOR A SPACE ROBOTIC MANIPULATOR
Pierpaolo Palmieri

13:10-13:20 IAC-24/C2/IPB/82522
GRAPHENE AND GRAPHENE-LIKE MATERIALS FOR SENSORS AND ACTUATORS IN AEROSPACE: A REVIEW AND TECHNOLOGY LANDSCAPE
Tanya Scalia, Italy

13:20-13:30 IAC-24/C2/IPB/87766
DEPLOYABLE ORIGAMI-INSPIRED STRUCTURES FOR FUTURE SPACE APPLICATIONS: LESSONS LEARNED FROM ZERO-G FLIGHT EXPERIMENT AND NEW DEVELOPMENTS
Augustin Gallois

SCREEN #51

12:40-12:50 IAC-24/C2/IPB/86325
THERMAL AND VIBRATIONAL ANALYSIS OF PERUVIAN 3U CUBESAT CHASQUI II FOR LOW-EARTH ORBIT MISSIONS
Jhon Gonzales Silvera, Peru

12:50-13:00 IAC-24/C2/IPB/85097
A UNIVERSAL KINEMATIC MODELLING METHOD FOR MULTI-ARMS SPACE ROBOT WITH VARIABLE TOPOLOGY
Hongxu Wang, China

13:20-13:30 IAC-24/C2/IPB/83888
DEVELOPMENT AND CHARACTERIZATION OF AN EXPERIMENTAL SETUP TO STUDY COLD-WELDING IN MICROGRAVITY CONDITIONS
Leonardo Barilaro, Malta

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SCREEN #52

12:30-12:40 IAC-24/C2/IPB/84504
HIGH RELIABILITY CRITICAL STRAIN THEORY BASED STRUCTURAL DESIGN METHODOLOGY TO ACHIEVE A LIGHTWEIGHT SPACEBORNE ELECTRONICS
Kwangwoo Kim, Korea, Republic of

12:50-13:00 IAC-24/C2/IPB/87780
SHM OF SPACE STRUCTURES: USE OF POLARIZATION-MAINTAINING FIBERS TO DECOUPLE THE THERMO-MECHANICAL EFFECT ON FIBER BRAGG GRATING SENSOR MEASUREMENTS
Emanuele Casciaro

SCREEN #53

12:30-12:40 IAC-24/C2/IPB/84699
MODAL TESTING AND DYNAMIC SIMULATION VERIFICATION TECHNIQUES FOR SHOCK TEST.
YEN TING LIU

SCREEN #54

12:30-12:40 IAC-24/C2/IPB/91687
EXPLORING THE VIABILITY OF CORNSTARCH-BASED BIOPLASTICS FOR AEROSPACE AND AVIATION APPLICATIONS
Aitana Tinajero

SCREEN #55

12:30-12:40 IAC-24/C2/IPB/91682
SPACECRAFT THERMAL ANALYSIS AND CONSIDERATIONS OF A LAUNCH ENVIRONMENT
Lysanne Page

13:20-13:30 IAC-24/C2/IPB/86561
PASSIVE THERMAL CONTROL SYSTEM DESIGN AND TEMPERATURE ANALYSIS OF THAI SPACE CONSORTIUM-1 SATELLITE
Chinphat Patanathabutr, Thailand

SCREEN #56

12:30-12:40 IAC-24/C2/IPB/85702
PROPOSAL FOR THE CONSTRUCTION OF LUNAR MODULE
Gustavo Enrique Albarran Gonzalez, Mexico

12:40-12:50 IAC-24/C2/IPB/91846
ADDITIVE MANUFACTURE OF ZIRCONIUM ALLOYS FOR THERMAL PROPULSION BY SELECTIVE POWDER DEPOSITION
Phylis Makurunje

SCREEN #57

13:20-13:30 IAC-24/C2/IPB/84101
NUMERICAL SIMULATION AND ANALYSIS OF SHOULDER JET HEAT REDUCTION FOR MECHANICAL DEPLOYABLE REENTRY VEHICLES
Junjie Sun, China

SCREEN #58

13:20-13:30 IAC-24/C2/IPB/81579
FLEXURAL AND INTERLAMINAR SHEAR STRENGTH WITH EMI SHIELDING PERFORMANCE OF CF/CNTF HYBRID COMPOSITE
MIJOUNG JOUNG, Korea, Republic of

SCREEN #59

12:30-12:40 IAC-24/C3/IPB/84023
RECEIV'AIR - BYPASSING OF ATMOSPHERIC ATTENUATION FOR SPACE BASED SOLAR POWER WITH AN AIRBORNE RECEIVER
Alexandre Garus, Italy

12:40-12:50 IAC-24/C3/IPB/90393
ADVANCING SPACE SOLAR POWER SATELLITE: THE ROLE OF ENERGY SATELLITES IN SUSTAINABLE DEVELOPMENT
Aditya Baraskar, Japan

13:20-13:30 IAC-24/C3/IPB/89998
LUX-THERMAL: A POWER GENERATION SYSTEM FOR LUNAR NIGHT SURVIVAL
Sotirios Zormpas, Luxembourg

SCREEN #60

12:30-12:40 IAC-24/C3/IPB/85136
INTERNATIONAL SPACE SOLAR POWER STUDENT COMPETITION PAPER NO. 1
George B. Dietrich, Canada

12:40-12:50 IAC-24/C3/IPB/85141
INTERNATIONAL SPACE SOLAR POWER STUDENT COMPETITION PAPER NO. 2
George B. Dietrich, Canada

12:50-13:00 IAC-24/C3/IPB/85146
INTERNATIONAL SPACE SOLAR POWER STUDENT COMPETITION PAPER NO. 3
George B. Dietrich, Canada

13:00-13:10 IAC-24/C3/IPB/88617
STUDENT PAPER - 2024 SPACE SOLAR POWER STUDENT COMPETITION
John C. Mankins, United States

13:10-13:20 IAC-24/C3/IPB/80824
COMBINED CYCLE POWER PLANT FOR SPACECRAFT
Michael Paluszek, United States

13:20-13:30 IAC-24/C3/IPB/86659
PROPOSAL OF A NOVEL SOLAR POWER SATELLITE IN THE ATTITUDE STABILIZATION SCHEME BASED ON GRAVITY GRADIENT
tadashi takano, Japan

SCREEN #61

12:30-12:40 IAC-24/C3/IPB/88941
LARGE-SCALE APPLICATION OF NEW TYPES OF SPECIAL ALTERNATIVE ENERGY SOURCES IN SPACE STATIONS
Jafar Sadig

13:00-13:10 IAC-24/C3/IPB/85635
TEMPERATURE PREDICTION FIRST RESULTS OF A SOLAR POWER GENERATOR BASED ON THE SPS-ALPHA CONCEPT
Ghanim Alotaibi, Kuwait

13:20-13:30 IAC-24/C3/IPB/91544
COUPLING DYNAMICS AND EXPERIMENT OF CRAWLING ROBOT AND SPACE STRUCTURE FOR ON-ORBIT ASSEMBLY
Shunan Wu, China

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SCREEN #62

- 12:30-12:40 IAC-24/C3/IPB/87591**
STUDY OF ARCHITECTURES FOR RTG-SOLAR HYBRID POWER SUBSYSTEMS IN SPACE VEHICLES.
Jose Antonio Fernandez Alvarez, Spain
- 12:50-13:00 IAC-24/C3/IPB/84520**
ENERGY-OBTAINING SYSTEM TO PROPEL SPACECRAFT THROUGH THE GENERATION OF THERMOELECTRIC RADIOISOTOPES.
Jose Bibiano Hermosillo Ramirez, Mexico
- 13:00-13:10 IAC-24/C3/IPB/81244**
MULTI-MATERIAL 3D PRINTING OF A MAGNETRON
Anjana Valsalan, Canada
- 13:20-13:30 IAC-24/C3/IPB/85503**
DIANA'S MIDNIGHT SUN: SUSTAINABLE ENERGY SOLUTIONS WITH SOLAR POWER SATELLITES FOR DIANA LUNAR INFRASTRUCTURE
Elizabeth Gutierrez, Germany

SCREEN #63

- 12:30-12:40 IAC-24/C3/IPB/86785**
SUSTAINABLE NUCLEAR ENERGY ADVANCEMENTS FOR SPACE EXPLORATION AND COLONIZATION MISSIONS
Lorenzo Vignini, Italy
- 12:40-12:50 IAC-24/C3/IPB/84198**
PRELIMINARY NEUTRONIC CHARACTERIZATION OF A MW CLASS AND LEU SPACE NUCLEAR REACTOR
Marco Sumini, Italy
- 12:50-13:00 IAC-24/C3/IPB/91228**
CONSTELLATION DESIGN FOR SPACE-BASED SOLAR POWER PLANAR SATELLITE ARRAYS
Michael Bazzocchi, Canada
- 13:20-13:30 IAC-24/C3/IPB/90398**
PIONEERING SPACE POWER DYNAMICS: THE GEOSTATIONARY ORBITAL GARAGE
Titouan Ustache, France

SCREEN #64

- 12:30-12:40 IAC-24/C3/IPB/81040**
ADAPTIVE MODEL REFERENCE ADAPTIVE CONTROL (MRAC) BUCK CONVERTER FOR SPACEBORNE APPLICATIONS WITH SINGLE EVENT UPSET (SEU) MITIGATION
Naman Vaidya
- 12:40-12:50 IAC-24/C3/IPB/81534**
EQUIVALENT MODEL AND PARAMETER IDENTIFICATION OF GRAPHENE SUPERCAPACITOR BATTERY FOR SPACECRAFT
Yunhan He, China
- 13:00-13:10 IAC-24/C3/IPB/86663**
A MODEL-BASED APPROACH FOR SPACE-BASED SOLAR POWER: TECHNICAL FEASIBILITY, EFFICIENCY AND MISSION COST
Lorenzo Guarino, Italy
- 13:20-13:30 IAC-24/C3/IPB/89210**
THERMIONIC CONVERTERS: POWER GENERATION FROM WASTE HEAT
Spencer Christian, United States

SCREEN #65

- 12:30-12:40 IAC-24/C3/IPB/84580**
ORBITAL PIONEERS: SPACE ROBOTICS FOR SPACE SOLAR POWER SATELLITE DEPLOYMENT
A. Sejal Jain, Japan
- 13:10-13:20 IAC-24/C3/IPB/85184**
PROPOSAL FOR THE CONSTRUCTION OF CLEAN ENERGY-GENERATING BASES FOR FUTURE SETTLEMENTS. LUNAR POWER REGOLITH UNIT. LRPU
María Alicia Guevara Miranda, Mexico
- 13:20-13:30 IAC-24/C3/IPB/82991**
AN ORBITAL SYSTEM FOR POWER PRODUCTION AND DISTRIBUTION FOR LEO/MEO SATELLITES
Pietro Mondino, France

SCREEN #66

- 12:30-12:40 IAC-24/C3/IPB/85612**
REVOLUTIONIZING SMALLSAT POWER SYSTEMS: SODIUM-ION STRUCTURAL BATTERIES FOR ENHANCED EFFICIENCY AND PAYLOAD ALLOCATION IN LOW EARTH ORBIT MISSIONS
Chiara Mirani, Italy
- 13:00-13:10 IAC-24/C3/IPB/86402**
COMPARATIVE ANALYSIS OF CONTROL ACCURACY IN ENERGY TRANSMISSION METHODS FOR SOLAR POWER SATELLITE
Simon Maillot, France
- 13:20-13:30 IAC-24/C3/IPB/82123**
COMMERCIAL RPS – A NEW POWER GENERATION PARADIGM FOR MID-SIZE DEEP SPACE MISSIONS
Jaclyn jaclyn.wiley, United States

SCREEN #67

- 12:30-12:40 IAC-24/C4/IPB/86373**
EFFECT OF THE ELECTRODE SHAPE ON THE COMBUSTION CHARACTERISTICS OF ELECTRICALLY CONTROLLED SOLID PROPELLANT
Myoungjin Kim
- 12:40-12:50 IAC-24/C4/IPB/86413**
COMBUSTION CHARACTERISTICS OF HYDROXYLAMMONIUM NITRATE-BASED ELECTRICALLY CONTROLLED GEL PROPELLANT
CHANSONG KIM, Korea, Republic of
- 12:50-13:00 IAC-24/C4/IPB/85265**
PERSPECTIVES ON COLLOIDAL POLYMERIC NITROGEN MONOPROPELLANT ENGINES
Davide Negretti, Italy
- 13:00-13:10 IAC-24/C4/IPB/81960**
CONCEPTUAL DESIGN OF A 1 KN HYBRID ROCKET ENGINE MANUFACTURED WITH ADDITIVE TECHNOLOGY
Olexiy Shynkarenko, Brazil
- 13:10-13:20 IAC-24/C4/IPB/81963**
NUMERICAL STUDY OF AN ADDITIVELY MANUFACTURED HYBRID ROCKET ENGINE OF 1 KN: A CFD APPROACH
Olexiy Shynkarenko
- 13:20-13:30 IAC-24/C4/IPB/87274**
CHARACTERIZATION OF PARAFFIN-LDPE BLENDED FUELS
Rafael Coelho, Brazil

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SCREEN #68

12:30-12:40 IAC-24/C4/IPB/81823
A NUMERICAL OPTIMIZATION OF HIGH-ALTITUDE TEST FACILITY FOR UPPER STAGE ENGINES
chaehyoung kim

12:40-12:50 IAC-24/C4/IPB/91570
EXPERIMENTAL STUDY OF POROUS-WALL EXPANSION-DEFLECTION NOZZLE FLOW
Bocheng Zhou

12:50-13:00 IAC-24/C4/IPB/91575
NUMERICAL INVESTIGATION ON COMBUSTION ENHANCEMENT STRATEGY IN SHOCK CONCENTRIC BUBBLE INTERACTION
Zhibang Wang

13:00-13:10 IAC-24/C4/IPB/86840
NUMERICAL COMBUSTION MODEL AND EFFICIENCY STUDY OF ELECTRICALLY IGNITED SOLID PROPELLANTS FOR MICRO TO MACRO PROPULSION SYSTEMS
Abishek Shrestha, Australia

13:10-13:20 IAC-24/C4/IPB/83729
AN IMPROVED AL PARTICLE COMBUSTION MODEL FOR SIMULATING THE ALUMINIZED HYBRID ROCKET MOTOR COMBUSTION
XIAOTING NIU, China

13:20-13:30 IAC-24/C4/IPB/84704
INVESTIGATION OF SOLID FUEL PYROLYSIS CHARACTERISTICS IN HYBRID ROCKET ENGINES UTILIZING HTPB WITH ALUMINUM ADDITIVE
Yudong Lu, China

SCREEN #69

12:30-12:40 IAC-24/C4/IPB/90641
DEVELOPMENT AND INTEGRATION OF THE ENGINEERING MODEL FOR A MODULAR HTP-BASED CUBESAT PROPULSION SYSTEM FOR FUTURE IN-ORBIT VALIDATION ON THE UNIP EXCITE CUBESAT PLATFORM
Matteo Serchi Masini, Italy

12:40-12:50 IAC-24/C4/IPB/86143
DYNAMIC CHARACTERISTICS OF HYDROGEN PEROXIDE ELECTRIC PUMP DURING PULSE IGNITION PROCESS OF HYBRID ROCKET ENGINE
Xiaoming Gu, China

12:50-13:00 IAC-24/C4/IPB/87634
EXPERIMENTAL INVESTIGATION ON PRESSURE AND FLOW REGULATION OF VARIABLE AREA CAVITATION VENTURI IN PUMP-FEED SYSTEM
Haoran Shi, China

13:00-13:10 IAC-24/C4/IPB/86210
NUMERICAL SIMULATION AND EXPERIMENTAL STUDY OF THE THROAT PARALLEL SEGMENT LENGTH OF VARIABLE AREA CAVITATING VENTURI
Ruikai Chen, China

13:10-13:20 IAC-24/C4/IPB/82163
SUB-SCALE DEMONSTRATION OF A PULSED FUSION AXIAL MAGNETIC NOZZLE WITH A TARGET-TYPE THRUST STAND
Nathan Schilling

13:20-13:30 IAC-24/C4/IPB/88434
ESTABLISHING A FOUNDATION FOR ROCKETRY ADVANCEMENT IN MEXICO: DEVELOPMENT OF A HYBRID ROCKET ENGINE.
Luis Fernando Gomez Monroy, Mexico

SCREEN #70

12:30-12:40 IAC-24/C4/IPB/86625
NUMERICAL COMPUTATIONS OF NOZZLE PERFORMANCE LOSSES IN SOLID ROCKET MOTORS
Marco Grossi, Italy

12:40-12:50 IAC-24/C4/IPB/90023
THREE DIMENSIONAL AND MULTIPHASE SIMULATIONS OF AFT-FINOCYL SOLID ROCKET MOTORS
Gianluca Cocirla

12:50-13:00 IAC-24/C4/IPB/81843
BREAKING BARRIERS WITH BIOFUELS: THE FUTURE OF ROCKET PROPULSION
Vanmitha Athimoolam, Malaysia

13:00-13:10 IAC-24/C4/IPB/87025
OPTIMIZATION OF THRUST CONTROL STRATEGY FOR ELECTRIC PUMP-FED ROCKET ENGINES
Haodong He, China

13:10-13:20 IAC-24/C4/IPB/86017
BLOCKAGE REMOVAL AND REQUALIFICATION OF A REGENERATIVELY COOLED, ADDITIVELY MANUFACTURED ROCKET ENGINE
Sebastian Bouckennooghe

13:20-13:30 IAC-24/C4/IPB/86765
DEVELOPMENT OF ATLAS: A LIQUID ROCKET ENGINE CRYOGENIC FEED SYSTEM
Rohin Pathak, United States

SCREEN #71

12:30-12:40 IAC-24/C4/IPB/87010
DESIGN, MODELING AND SIMULATIONS OF A HIGH PRESSURE CRYOGENIC SYSTEM FOR A SPACE PROPULSION TEST FACILITY
Tommaso Zagatti, Italy

12:40-12:50 IAC-24/C4/IPB/86339
CLOSED-LOOP THRUST THROTTLING CAPABILITIES ON KERO-LOX LIQUID ROCKET ENGINE
Connor Zook, United States

12:50-13:00 IAC-24/C4/IPB/87444
FLUIDIC THROAT TECHNOLOGY FOR HYBRID ROCKET MOTOR BASED ON LIQUID OXIDIZER COOLING
Haizhou Guo, China

13:00-13:10 IAC-24/C4/IPB/86198
THRUST PREDICTION OF HYBRID ROCKET MOTOR BASED ON PHYSICAL FEATURE EMBEDDING AND RESIDUAL LEARNING
Weile Xu, China

13:10-13:20 IAC-24/C4/IPB/86853
OPTIMIZATION OF PUMP-VALVE COMBINED REGULATION STRATEGY FOR ELECTRIC PUMP-FED SYSTEM IN A HYBRID ROCKET MOTOR
Xintong Li, China

13:20-13:30 IAC-24/C4/IPB/84768
DEVELOPMENT OF A NOVEL CUBESAT-SCALE AIR-BREATHING ELECTRIC PROPULSION SYSTEM
Vittorio Giannetti

SCREEN #72

12:30-12:40 IAC-24/D1/IPB/87381
FPGA IMPLEMENTATION OF CONVOLUTIONAL NEURAL NETWORKS FOR IMPROVED AUTONOMY AND EFFICIENCY OF NEXT-GENERATION CUBESAT MISSIONS
Angela Cratere, Italy

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12:40-12:50 IAC-24/D1/IPB/85603
AN OVERVIEW OF EXTREMA PROJECT PILLAR II: VALIDATING AUTONOMOUS GUIDANCE ALGORITHMS VIA HIL TESTING
Alessandra Mannocchi

12:50-13:00 IAC-24/D1/IPB/82767
NONDESTRUCTIVE TESTING IN SPACE ENVIRONMENTS: A CRITICAL ELEMENT FOR THE FUTURE SUSTAINABILITY OF AEROSPACE DEVELOPMENT
Luis Angel Hernandez Laya

13:00-13:10 IAC-24/D1/IPB/89385
MEGASAT: FEASIBILITY OF A MODULAR AND EXPANDABLE GEOSTATIONARY PLATFORM FOR OPTIMIZING GEO-SLOT ALLOCATIONS.
Victor Hernandez Megia

13:10-13:20 IAC-24/D1/IPB/83982
A MACHINE LEARNING ROADMAP FOR ON-ORBIT SERVICING
Gonzalo Aguirre, Japan

13:20-13:30 IAC-24/D1/IPB/85175
IN-ORBIT DEMONSTRATION OF ROBOTIC OPERATIONS ON A REUSABLE SERVICE MODULE - DEMARLUS
Romain Caujolle, France

SCREEN #73

12:30-12:40 IAC-24/D1/IPB/88804
SIROM STANDARD INTERFACE APPLICABILITY FOR HARD DOCKING SCENARIOS. AIR-BEARING TEST CAMPAIGN AS INITIAL STEP TOWARD THE VALIDATION OF CONTACT DYNAMICS.
Alejandro Lazaro

12:40-12:50 IAC-24/D1/IPB/85383
MODULAR RECONFIGURABLE ROVERS: ADVANCED ALGORITHM ACCOUNTING FOR TERRAIN FEATURES, LOCOMOTION MODES, AND MAP UNCERTAINTIES FOR PLANETARY EXPLORATION
Annachiara Ippolito, Italy

12:50-13:00 IAC-24/D1/IPB/88427
BUILDING DATA-DRIVEN SATELLITE DIGITAL TWINS
Filipe Cravidão, Portugal

13:00-13:10 IAC-24/D1/IPB/84639
A COMPARATIVE STUDY OF SCRUM AND CLASSICAL CONCURRENT ENGINEERING PROCESSES FOR SPACE SYSTEM DESIGN
Georgios Tsakyridis, Germany

13:10-13:20 IAC-24/D1/IPB/82998
AN AUTONOMOUS DISTRIBUTED TIMING SIGNAL IN-SPACE AS ALTERNATIVE TO GNSS TIME SYNCHRONISATION
Agathe BOUIS, United Kingdom

13:20-13:30 IAC-24/D1/IPB/85881
BIFROST: VIRTUAL ENGINEERING AND SIMULATION FRAMEWORK
Adriano Parisi, Italy

SCREEN #74

12:30-12:40 IAC-24/D1/IPB/87455
GAME-THEORETIC SENSOR TASKING FOR SATELLITE CONSTELLATION CONTROL WITH COMPUTATIONAL SCALABILITY AND PERFORMANCE GUARANTEES
Donghae Kim, United States

12:40-12:50 IAC-24/D1/IPB/89277
FLYEYE TELESCOPE FOR SST APPLICATION: AN OVERVIEW OF THE FORESEEN INSTRUMENT PERFORMANCES
Roberta Pellegrini, Italy

12:50-13:00 IAC-24/D1/IPB/88052
RECS: IN-ORBIT RE-FUELING DEMONSTRATION. DESIGN REVIEW, MANUFACTURING AND CONOPS
Simone La Luna, Italy

13:00-13:10 IAC-24/D1/IPB/82549
EVALUATION OF AGILITY IN MBSE METHODS DEVELOPMENT LIFE CYCLE PHASES OF SMALL SATELLITES
Rehobot Bekele Buruso, France

13:10-13:20 IAC-24/D1/IPB/85218
A NOVEL MISSION SCHEDULING ALGORITHM FOR LARGE-SCALE GEOSYNCHRONOUS ORBIT SPACECRAFT REFUELING PROBLEM
Shuai Yin, China

13:20-13:30 IAC-24/D1/IPB/88188
MULTI-SOURCE SENSOR FUSION: CHALLENGES AND OPPORTUNITIES FOR THE FUTURE OF SPACE OPERATIONS
Cristobal Garrido, United States

SCREEN #75

12:30-12:40 IAC-24/D1/IPB/82343
COST OPTIMIZED LOGISTICS FOR CISLUNAR OPERATIONS
Ireland Brown, United States

12:40-12:50 IAC-24/D1/IPB/85331
SELECTIVE SOLAR LIGHT SINTERING PROCESS OPTIMIZATION VIA A MODEL-BASED SYSTEMS ENGINEERING APPROACH
Luca Breggion

12:50-13:00 IAC-24/D1/IPB/90988
PROCESSOR AND HARDWARE IN THE LOOP GNC TESTING FOR E.INSPECTOR MISSION: MULTI-SPECTRAL IMAGE PROCESSING FOR UNCOOPERATIVE TARGET INSPECTION
Stefano Silvestrini

13:00-13:10 IAC-24/D1/IPB/89088
SUBTERRA: SEARCH FOR UNDERGROUND BIOSIGNATURES WITH TRACKING, EXPLORATION AND RECONNAISSANCE BY ROBOTIC AGENTS
Franco Labia, United Kingdom

13:10-13:20 IAC-24/D1/IPB/89552
ENHANCING THE MAIT OF AEROSPACE SYSTEMS THROUGH AI-BASED IMMERSIVE TECHNOLOGIES
Michele Pasquali

13:20-13:30 IAC-24/D1/IPB/84754
ONLINE PM AND COLLABORATIVE TOOLS FOR THE AEROSPACE SECTOR
Osvaldo Porto

SCREEN #76

12:30-12:40 IAC-24/D3/IPB/88339
DEMONSTRATION OF IN-SITU RESOURCE UTILIZATION OF LUNAR REGOLITH FOR PLANT GROWING SYSTEMS THROUGH SCALED CAPILLARY MODELS
Cassidy Brozovich

13:00-13:10 IAC-24/D3/IPB/81876
DIGITAL MOON: USAGE OF ARTIFICIAL INTELLIGENCE AND DIGITAL TWINS FOR A SUSTAINABLE LUNAR ECONOMY
Marcelo Boldt, Germany

13:20-13:30 IAC-24/D3/IPB/88160
AUTOMATED DESIGN AND ADDITIVE CONSTRUCTION OF REGOLITH-SHIELDED LUNAR HABITATS
Daniele Florenzano, Denmark

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SCREEN #77

12:30-12:40 IAC-24/D3/IPB/85771
UNIQUE AND NOVEL INFLATABLE TOWER (UNIT) AS CRITICAL INFRASTRUCTURE ON THE MOON
Krunali Shah, United States

13:00-13:10 IAC-24/D3/IPB/87953
THE FUTURE OF IN-SPACE MANUFACTURING: A SYSTEMATIC REVIEW OF EMERGING TECHNOLOGIES, TRENDS, AND APPLICATIONS FOR SUSTAINABLE SPACE EXPLORATION AND OFF-EARTH COLONIZATION
Arman Asgharpoor, Iran

13:10-13:20 IAC-24/D3/IPB/82504
ENABLING SUSTAINABLE SPACE EXPLORATION: THE ROLE OF AI, ROBOTICS, AND EXOSKELETON WEARABLES IN INFRASTRUCTURE DEVELOPMENT
Nijanthan Vasudevan, United States

13:20-13:30 IAC-24/D3/IPB/85363
ACCELERATED COMBUSTION OF METALS FOR EXOTHERMIC HEATING (ACME): SURVIVING THE LUNAR NIGHT THANKS TO ISRU PARADIGM
Alessandro Lovagnini

SCREEN #78

12:30-12:40 IAC-24/D3/IPB/89310
LIGHTWEIGHT COMPOUND FOR SPACE STRUCTURE PROTECTION
Diego Cagna, Italy

SCREEN #79

13:00-13:10 IAC-24/D5/IPB/86435
INTERACTIVE CRATER EXPLORATION ROVER (ICER) WITH BIONIC CAMERA FOR ACUTE PERCEPTION AND VISUALIZATION WITH PREDICTIVE CONTROL
Amanda Calderon, Costa Rica

13:10-13:20 IAC-24/D5/IPB/89662
A MACHINE LEARNING-READY DATA PROCESSING TOOL FOR NEAR REAL-TIME FORECASTING
Maher Dayeh, United States

13:20-13:30 IAC-24/D5/IPB/85856
ADVANCED COMMS AGENT SWITCHER FOR LUNAR BASE CAMP VIA SIWÖNET (ACASNET)
Daniela Duran Arias, Costa Rica

SCREEN #80

12:30-12:40 IAC-24/D5/IPB/91826
ESA MISSION CLASSIFICATION
Laurent Marchand

12:50-13:00 IAC-24/D5/IPB/85786
SPACE WEATHER FORECASTING BY USING ARTIFICIAL INTELLIGENCE
Mehmet Fatih Engin, Türkiye

13:10-13:20 IAC-24/D5/IPB/82956
INTELLIGENT HEALTH MANAGEMENT PLATFORM FOR AEROSPACE ELECTRONIC SYSTEMS
Yuanhong Mao, China

13:20-13:30 IAC-24/D5/IPB/81041
REVOLUTIONIZING SATELLITE HARDWARE RELIABILITY THROUGH INNOVATIVE DESIGN PARADIGMS
Naman Vaidya, India

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12:50-13:00 IAC-24/D5/IPB/90559
MANAGEMENT SYSTEM IN SPACE
Fatima Hasanova, Azerbaijan

13:00-13:10 IAC-24/D5/IPB/90966
RACCOON OS: A SECURE OPEN-SOURCE \\ OPERATING SYSTEM FOR SATELLITES
José Manuel Diez, Germany

13:10-13:20 IAC-24/D5/IPB/81394
LEVERAGING MACHINE LEARNING ALGORITHMS AND OPEN-SOURCE SPATIAL DATASETS FOR LAND USE AND LAND COVER CHANGE IN THE NAM NGUM RIVER BASIN (NNRB), LAO PDR
Sackdavong MANGKHASEUM, Japan

13:20-13:30 IAC-24/D5/IPB/84321
RSH: ADVANCED PROTECTIVE HEADGEAR FOR RADIATION MONITORING AND USER SAFETY
Ilaha İsgandarova, Azerbaijan

SCREEN #82

13:00-13:10 IAC-24/D5/IPB/90285
CENTRALIZING CODES AND KNOWLEDGE FOR STREAMLINED INTEGRATION IN THE SPACE SECTOR: A FRAMEWORK FOR UNIVERSAL ACCESS TO SPACE AND EFFECTIVE KNOWLEDGE MANAGEMENT
Muneera Almalki, Bahrain

13:10-13:20 IAC-24/D5/IPB/86862
FACTORS AFFECTING SPACECRAFT IN-ORBIT ANOMALIES CAUSING INSURANCE LOSSES
David Todd, United Kingdom

13:20-13:30 IAC-24/D5/IPB/89367
AN INNOVATIVE APPROACH TO DEVELOPING FUEL CELLS FOR SPACE APPLICATIONS USING THE SIX SIGMA DMAIC FRAMEWORK.
Douglas Miranda Rodrigues, Brazil

SCREEN #83

12:30-12:40 IAC-24/E1/IPB/86704
SPACE ART
Ivo Jokin, Bulgaria

12:40-12:50 IAC-24/E1/IPB/81475
SEDS-CANADA'S DEVELOPMENT OF HIGHLY QUALIFIED PERSONNEL THROUGH ENGINEERING PROJECTS AT THE UNDERGRADUATE LEVEL
Connor McNeill, Canada

12:50-13:00 IAC-24/E1/IPB/90333
HANDS-ON STRATOSPHERIC BALLOON EXPERIMENT AS A STEPPING STONE TO THE SPACE: THE RETINA STUDENTS' EXPERIENCE
Lorenzo Chiavari

13:00-13:10 IAC-24/E1/IPB/90898
COMPARATIVE ANALYSIS OF WORLDWIDE PRACTICES OF KEEPING STUDENT INTEREST IN SPACE PROFESSIONS AND WAYS TO RETAIN IT IN THE AEROSPACE INDUSTRY
Dmitriy Grishko, Russian Federation

13:10-13:20 IAC-24/E1/IPB/82604
CNES IMMERSIVE WEEK FOR MIDDLE SCHOOL STUDENTS (JANUARY 26TH - FEBRUARY 2ND, 2024)
Evelyne CORTIADE MARCHE, France

13:20-13:30 IAC-24/E1/IPB/88940
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Scott Scoular, United Kingdom

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Luis Fernando Gomez Monroy, Mexico

12:50-13:00 IAC-24/E1/IPB/81951
HELLO WORLD LIVE - A NEW SPACE MEDIA
Antoine Jaeger, Germany

13:00-13:10 IAC-24/E1/IPB/87142
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Manfred Ehresmann, Germany

13:10-13:20 IAC-24/E1/IPB/90444
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Kevin Tang, Brazil

13:20-13:30 IAC-24/E1/IPB/85861
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Katarzyna Cieślak, Poland

SCREEN #85

12:30-12:40 IAC-24/E1/IPB/87049
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Ayelet Weizman, Israel

12:40-12:50 IAC-24/E1/IPB/89130
BUILDING BRIGHT FUTURES: STEAM AND RURAL EDUCATION FOR SPACE SCIENCE TEACHING
Gabriel Loza Medina, Mexico

13:00-13:10 IAC-24/E1/IPB/86368
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Jorge Rubén Casir Ricaño, Japan

13:20-13:30 IAC-24/E1/IPB/87172
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Mohamed Alothman, Bahrain

SCREEN #86

12:30-12:40 IAC-24/E1/IPB/85334
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Roger Birkeland, Norway

12:40-12:50 IAC-24/E1/IPB/91404
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Olga Ovchinnikova

13:00-13:10 IAC-24/E1/IPB/86583
PARTIAL EARTH: UNSETTLING THE MODERN GAZE
Anahat Bharaj, The Netherlands

SCREEN #87

12:30-12:40 IAC-24/E1/IPB/86415
CAMP GALILEO: A FIRST APPROACH TO SPACE EXPLORATION FOR CHILDREN IN DEVELOPING COUNTRIES, LESSONS LEARNED FROM COSTA RICA CASE OF STUDY.
Rebeca Jiménez, Costa Rica

13:20-13:30 IAC-24/E1/IPB/89892
EDUCATION AND ALLIANCES TO REDUCE THE SPACE GAP IN INDIGENOUS COMMUNITIES OF MEXICO IN THE YUCATAN PENINSULA
Eduardo Azael Hoy Canul, Mexico

SCREEN #88

12:30-12:40 IAC-24/E1/IPB/82573
THE EARTH-MOON SYSTEM WITH REMOTE SENSING IN EDUCATION - IMPLEMENTING LUNAR AND CIS-LUNAR TOPICS INTO THE SCHOOL CURRICULUM
Roman Hiby, Germany

12:50-13:00 IAC-24/E1/IPB/91468
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S.W. Chiu, United Kingdom

13:20-13:30 IAC-24/E1/IPB/85991
DECOLONIZING SPACE: A CALL FOR EQUITY AND INCLUSIVITY IN THE FINAL FRONTIER
Toi Drayton, United States

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13:10-13:20 IAC-24/E1/IPB/90692
AEB ESCOLA VIRTUAL - EDUCATION PLATFORM: OPEN AND DISTANCE LEARNING PLATFORM FOR ACCESSIBLE SPACE EDUCATION.
Danilo Sakay, Brazil

13:20-13:30 IAC-24/E1/IPB/86268
STEM EDUCATION USING SPACE ROVER AND STUDENT ROVER CHALLENGE (SRC)
Kyunghwan KIM, Korea, Republic of

SCREEN #90

12:50-13:00 IAC-24/E1/IPB/90756
IMPORTANCE OF COMMUNICATION STRATEGIES IN EDUCATION: DEVELOPMENT OF DIGITAL MARKETING IN THE SPACE SECTOR
mariana almeida, Brazil

13:00-13:10 IAC-24/E1/IPB/91233
OVERCOMING OBSTACLES IN STEAM PROJECTS FOR WOMEN AND YOUTH IN DEVELOPING COUNTRIES
mariana almeida, Brazil

13:10-13:20 IAC-24/E1/IPB/90186
DEVELOPING A REFLECTIVE PORTFOLIO FOR SPACE SECTOR EDUCATION: ACTIVE METHODOLOGIES AND COLLABORATIVE LEARNING
mariana almeida, Brazil

13:20-13:30 IAC-24/E1/IPB/82722
RISE UP TO THE SPACE CHALLENGE
Shimrit Maman, Israel

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SCREEN #1

12:50-13:00 IAC-24/A3/IPB/82063

EXPLORATION OF LUNAR SURFACE HABITATS FOR SUSTAINED CREWED MISSIONS

Gourav Mohanan, India

13:00-13:10 IAC-24/A3/IPB/83006

EMRS: PROTOTYPING A MULTIPURPOSE ROVER FOR THE FUTURE LUNAR EUROPEAN MISSIONS

Antonella Ferri, Italy

13:10-13:20 IAC-24/A3/IPB/89397

EUROMOONMARS POLAND SPACE ANALOG SIMULATION CAMPAIGN 2024 : STUDIES ON HUMAN BEHAVIOUR COMBINED WITH HUMAN-SYSTEM INTERACTION

Clara Laforet, France

13:20-13:30 IAC-24/A3/IPB/88668

QUICK SETUP MECHANISM FOR LUNAR BASE CAMP ON THE POLE / IN THE PIT

Jun Sato, Japan

SCREEN #2

12:50-13:00 IAC-24/A3/IPB/85359

THE GLAMS PROJECT: BUILDING A LUNAR BASE WITH 3D PRINTING AND "LOCAL" MATERIALS

Flavio Gioia, Italy

13:00-13:10 IAC-24/A3/IPB/85915

A DYNAMIC ANALYSIS OF WHEELED JUMPING ROBOT FOR LUNAR EXPLORATION

John Lo, United Kingdom

13:10-13:20 IAC-24/A3/IPB/82859

DAEDALUSNAV: A SOFTWARE PACKAGE TO DISPLAY IMMERSIVE IMAGES OF LUNAR CAVES

Vito Fortunato, Italy

13:20-13:30 IAC-24/A3/IPB/80955

LUNAR-MULE: A CONCEPTUAL MOBILE UNMANNED LOADING ELEVATOR SWARM FOR LUNAR PAYLOAD HANDLING

Rogelio Morales, Venezuela

SCREEN #3

12:50-13:00 IAC-24/A3/IPB/88400

IMPORTANCE OF THE RELATION BETWEEN ENGINEERING AND GEOLOGY IN THE DESIGN OF SPACE EXPLORATION MISSIONS

Dulce Mayre Lora Sandoval, Mexico

13:00-13:10 IAC-24/A3/IPB/85199

ENHANCED PATH TRACKING AND MANEUVERING STRATEGIES FOR LUNAR ROVERS

Simone Fortuna, Italy

13:10-13:20 IAC-24/A3/IPB/87312

ACTUATOR BLOCKAGE DETECTION IN MILLIGRAVITY

Juliane Skibbe, Germany

13:20-13:30 IAC-24/A3/IPB/91267

UTILIZING COMPUTATIONAL MODELLING TO ADVANCE CISLUNAR ECLSS STRATEGIES: ANALYZING GAPS AND EXPLORING OPPORTUNITIES

Margarita Belali, Greece

SCREEN #4

12:50-13:00 IAC-24/A3/IPB/90218

POWER USAGE OPTIMIZATION ALONG THE ISRU VALUE CHAIN USING A LUNAR ROVER

Julie LESPAGNOL, France

13:00-13:10 IAC-24/A3/IPB/84255

ROVERS AND HELICOPTERS COOPERATION FOR MARS MISSION IN SEARCH OF THE ORIGIN OF LIFE

Julie LESPAGNOL, France

13:10-13:20 IAC-24/A3/IPB/86132

EXPLORING THE NEXUS OF ASTEROID MINING AND PRE-BIOTIC SIGNATURES: TOWARD SUSTAINABLE EXTRA-TERRESTRIAL HABITATS

Priyanka Ghatole, India

13:20-13:30 IAC-24/A3/IPB/81530

EVALUATION OF REQUIRED STRENGTH FOR LUNAR BASE CONSTRUCTION MATERIALS AND DEVELOPMENT OF REGOLITH SOLIDIFICATION VIA VIBRATIONAL COMPACTION

Tatsuya Nukushina, Japan

SCREEN #5

12:50-13:00 IAC-24/A3/IPB/87506

DIGITAL TWIN STUDY OF A CONTROLLED VERTICAL TAKE-OFF AND LANDING MOON ROCKET WITH NEURAL NETWORK INTEGRATION

Yiğit Serçeoğlu, Türkiye

13:00-13:10 IAC-24/A3/IPB/85303

HIGH-FIDELITY DUST SIMULANTS FOR LONG-TERM TOXICOLOGICAL ASSESSMENT OF LUNAR REGOLITH TO SUPPORT IN-SITU RESOURCE UTILIZATION (ISRU)

Cristina Pavan, Italy

13:10-13:20 IAC-24/A3/IPB/86010

ANALYSIS OF APPROACHES TO ENSURE THE RETURN OF CARGO DESCENT VEHICLES FROM THE MOON WITHOUT HEAT SHIELD DESTRUCTION

Victor Leonov, Russian Federation

13:20-13:30 IAC-24/A3/IPB/88713

LUNAR CAVES: LOOKING BELOW THE SURFACE OF THE MOON FOR PLANETARY SCIENCE AND HUMAN EXPLORATION

Francesco Sauro, Italy

SCREEN #6

12:50-13:00 IAC-24/A3/IPB/86228

HEXAPOD ROVER FOR SPACE EXPLORATION AND SPACE INFRASTRUCTURE

Alan Hernández Martínez, Mexico

13:00-13:10 IAC-24/A3/IPB/90442

DESIGN AND CASES STUDIES OF CORTO, AN OPEN ACCESS \\\ RENDERING TOOL FOR CELESTIAL AND ARTIFICIAL BODIES

Mattia Pugliatti, Italy

13:10-13:20 IAC-24/A3/IPB/91127

EXPLORING THE BENEFITS OF BIO-INSPIRED TECHNOLOGY FOR SPACE EXPLORATION: A REVIEW

Alexis Francisco Sosa Zamora, Mexico

13:20-13:30 IAC-24/A3/IPB/88153

DESIGNING AND FLYING THE FIRST UNIVERSITY LUNAR ROVER

Raewyn Duvall, United States

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SCREEN #7

- 12:50-13:00 IAC-24/B1/IPB/84372**
DESIGN AND ANALYSIS OF A VISIBLE/INFRARED OPTICAL SYSTEM WITH EQUIVALENT EFFECTIVE FOCAL LENGTH
Jeeyeon Yoon, Korea, Republic of
- 13:00-13:10 IAC-24/B1/IPB/83910**
FINANCE FOR A GREEN TRANSITION: RHETICUS CARBON OFFSET
Daniela Drimaco, Italy
- 13:10-13:20 IAC-24/B1/IPB/90527**
OPTIMIZING SATELLITE IMAGING CAPABILITIES OVER INDIAN LATITUDES: A STUDY ON SOLAR DECLINATION IMPACT ON DIGITAL SUN SENSOR FIELD OF VIEW
Surya Vaibhav DVR, India
- 13:20-13:30 IAC-24/B1/IPB/85549**
SPIKING NEURAL NETWORK DESIGN FOR ON-BOARD DETECTION OF METHANE EMISSIONS THROUGH NEUROMORPHIC COMPUTING
Andrew Karim, Canada

SCREEN #8

- 12:50-13:00 IAC-24/B1/IPB/84977**
THE ROLE OF HIGH-RESOLUTION SATELLITE IMAGES IN DETERMINING THE DEGREE OF MINERALIZATION
Turana Binnataliyeva, Azerbaijan
- 13:00-13:10 IAC-24/B1/IPB/83057**
TÖRÖN I: AN AUTONOMOUS, RECOVERABLE AND REUSABLE PLATFORM FOR HIGH-ATMOSPHERIC STUDIES
Rogelio Morales, Venezuela
- 13:10-13:20 IAC-24/B1/IPB/80853**
ADVANCING GLOBAL ENVIRONMENTAL MONITORING: INNOVATIVE STRATEGIES IN EARTH OBSERVATION SYSTEMS
Gumru Sharafkhanova, Azerbaijan
- 13:20-13:30 IAC-24/B1/IPB/87739**
DOMINO-E COVERAGE SERVICE – A FLEXIBLE, SMART AUTOMATED, TOOL FOR MULTI-MISSION FEDERATION
Cyrille de Lussy, France

SCREEN #9

- 12:50-13:00 IAC-24/B1/IPB/87402**
HEPD-02 AND EFD-02: A KEY ITALIAN CONTRIBUTION TO CSES-02 LEO MISSION
Alexandra Parmentier, Italy
- 13:00-13:10 IAC-24/B1/IPB/81108**
ANALYSIS AND DEFINITION OF AI4EO IN CATALONIA: POLICIES, ECOSYSTEM AND FUTURE
Marc Herrera, Spain
- 13:10-13:20 IAC-24/B1/IPB/84166**
A GEOSPATIAL PLATFORM FOR OBSERVING ENVIRONMENTAL INJUSTICE IN U.S. PRISON LANDSCAPES USING SATELLITE-DERIVED DATA
Ufuoma Oviemhoda, United States
- 13:20-13:30 IAC-24/B1/IPB/87431**
AI-BASED WILDFIRE RISK ASSESSMENT FROM LOW-COST MULTISPECTRAL DATA: COLLECTION, PROCESSING, AND ANALYSIS FOR SUB-6U CUBESAT MISSIONS
Andras Bodrogai, United Kingdom

SCREEN #10

- 12:50-13:00 IAC-24/B1/IPB/89439**
SECURING THE FUTURE: EXPLOITING IRIDE CONSTELLATION FOR NATIONAL SECURITY AND SERVICES FOR THE CITIZENS
Marco Pascale
- 13:00-13:10 IAC-24/B1/IPB/83830**
OPTIMIZING STAR TRACKER PLACEMENT ON AGILE SATELLITES: MITIGATING GLARE FOR ENHANCED PERFORMANCE
Mohammed El Amine Cheriet, Algeria
- 13:10-13:20 IAC-24/B1/IPB/90615**
SPACE EVIDENCE FOR HUMANITARIAN LAW AND HUMAN RIGHTS – THE FINDINGS OF THE LDE SPACE THESIS LAB
Dimitra Stefoudi, The Netherlands
- 13:20-13:30 IAC-24/B1/IPB/86338**
GO CANADA
William Archer, Canada

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- 12:50-13:00 IAC-24/B1/IPB/89206**
HARDWARE DESIGN FOR DEEP LEARNING IN MICRO SATELLITE SYSTEMS: A PARALLEL EDGE COMPUTING APPROACH
Jirapat Seangyong, Thailand
- 13:00-13:10 IAC-24/B1/IPB/80933**
COMPLEX OPTICAL COATINGS FOR EARTH OBSERVATION
David Harrison, United States
- 13:10-13:20 IAC-24/B1/IPB/88202**
CLOSED-LOOP GEOSPATIAL INTELLIGENCE WITH COMMERCIAL SATELLITE IMAGERY
Neil Dhingra, United States
- 13:20-13:30 IAC-24/B1/IPB/91916**
EARTHDAILY CONSTELLATION (EDC) - A GLOBAL DAILY CHANGE DETECTION SYSTEM TO HELP UNDERSTANDING OUR BIOSPHERE'S BEHAVIOR
Nicos Spyropoulos

SCREEN #12

- 12:50-13:00 IAC-24/B1/IPB/83305**
INTERNATIONAL COOPERATION AND BUSINESS VENTURES IN EARTH OBSERVATIONS
Yusif Imanov, Azerbaijan
- 13:00-13:10 IAC-24/B1/IPB/83584**
ON-ORBIT CALIBRATION AND RADIOMETRIC PERFORMANCE OF ALSAT-1B OPTICAL IMAGER OVER FOUR YEARS
Chahira Serief, Algeria
- 13:10-13:20 IAC-24/B1/IPB/81127**
EMPIRICAL CORRELATIONS AND ANOMALIES BETWEEN GEO-ECOLOGICAL FACTORS AND SKIN CANCER INCIDENCE RATES
Darius Chitu, Romania
- 13:20-13:30 IAC-24/B1/IPB/90761**
MAGNETIC FIELD MEASUREMENTS ALONG THE TRAJECTORY OF THE ARIANE 6 MAIDEN FLIGHT UTILIZING QUANTUM DIAMOND-BASED SENSORS
Yarne Beerden, Belgium

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SCREEN #13

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A LIGHTWEIGHT SUPER-RESOLUTION RECONSTRUCTION METHOD FOR LOW-LIGHT SPACE TARGET OBSERVATION IMAGES
Bingzan Liu, China

13:00-13:10 IAC-24/B1/IPB/87829
INNOVATIVE WEB PLATFORM FOR REAL-TIME ANALYSIS AND DISSEMINATION OF GOES-16 SATELLITE DATA: ADVANCES IN EARTH OBSERVATION SYSTEMS AND TECHNOLOGY
Sergio Sosa Callupe, Peru

13:10-13:20 IAC-24/B1/IPB/81121
POLYTOPE: EXTRACTING FEATURES FROM LARGE-SCALE DATA CUBES
Mathilde Leuridan, Germany

13:20-13:30 IAC-24/B1/IPB/91048
CUBESAT CONSTELLATIONS FOR USE IN HURRICANE PREDICTION
Kieron von Buchstab, Canada

SCREEN #14

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Sona Guliyeva, Italy

13:00-13:10 IAC-24/B1/IPB/86844
ORBIS: EARTH OBSERVATION MISSION SERVICE FOR PROCESSING RAW TO ANALYSIS-READY DATA
Jan Chytrý, Czech Republic

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Hélène SAVATIER-DUPRÉ

13:20-13:30 IAC-24/B1/IPB/81722
MACHINE LEARNING AND SATELLITE DATA FOR PREDICTIVE MONITORING OF TROPICAL ORCAS IN THE PACIFIC: INSIGHTS INTO MANAGEMENT STRATEGIES.
Tania Ramirez-González, Costa Rica

SCREEN #15

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HYPSON WEB PORTAL
Hawraa Akil Razzaq, Norway

13:00-13:10 IAC-24/B1/IPB/88707
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Farkhod Makhmudkhujayev, Uzbekistan

13:10-13:20 IAC-24/B1/IPB/87900
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Farkhod Makhmudkhujayev, Uzbekistan

13:20-13:30 IAC-24/B1/IPB/87319
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Farkhod Makhmudkhujayev, Uzbekistan

SCREEN #16

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MOCUPP: MONITORING OF CHANGE OF USE IN PRODUCTIVE LANDSCAPES, AS A METHODOLOGY FOR CROP DYNAMICS SURVEILLANCE BASED ON EARTH OBSERVATIONS.
Stephanie María Leitón Ramírez, Costa Rica

13:00-13:10 IAC-24/B1/IPB/83801
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Lingyun Gu, China

13:20-13:30 IAC-24/B1/IPB/86078
PRIAS: 20 YEARS OF TRAJECTORY-BUILDING RESEARCH IN EARTH OBSERVATIONS FOR COSTA RICA AND THE WORLD
Stephanie María Leitón Ramírez, Costa Rica

SCREEN #17

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Egor Kasulin, Russian Federation

13:00-13:10 IAC-24/B1/IPB/90768
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Frederick Ajisafe, United States

13:10-13:20 IAC-24/B1/IPB/88221
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Irina Sliusareva, Russian Federation

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12:50-13:00 IAC-24/B1/IPB/88262
CAUSAL MODELS OF CYCLOGENESIS: AN INFORMED STRUCTURAL LEARNING APPROACH FOR EFFICIENT DATA-DRIVEN INFERENCE
Allegra Farrar, United States

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12:50-13:00 IAC-24/B1/IPB/84644
ASSESSMENT OF THE CUBESATS CAPABILITIES FOR HIGH-RESOLUTION EARTH OBSERVATION MISSIONS
Abdelmadjid Lassakeur, Algeria

13:00-13:10 IAC-24/B1/IPB/85264
UEIKAP: PRELIMINARY RESULTS OF A SHIP WAKE DETECTION FRAMEWORK FOR REMOTE SENSING IMAGERY
Andrea Mazzeo, Italy

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13:10-13:20 IAC-24/B1/IPB/87403
EARTH'S PULSE, CITY'S BREATH: LEVERAGING COPERNICUS MISSION DATA, MACHINE LEARNING GUIDES SUSTAINABLE URBAN GROWTH
Marc Crampe, The Netherlands

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CONSTELLATION
Jorge Panagopoulos, Portugal

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FOSTERING SPACE EXPLORATION: AN INNOVATIVE 3-
WAVELENGTHS LIDAR INSTRUMENT CONCEPT FOR OCEAN, LAND
AND ATMOSPHERE EXPANDED SCIENTIFIC MEASUREMENTS
Valentina Sacchieri

13:00-13:10 IAC-24/B1/IPB/85494
A BUILDING BLOCK APPROACH TO SATELLITES AND ITS IMPACT
ON NEW CONFIGURATIONS AND CHANGES IN LATE AI&T
Bill Crandall, United States

13:20-13:30 IAC-24/B1/IPB/83438
A MULTI-SENSOR DIFFERENTIAL EVOLUTION APPROACH FOR
MEMS GYROSCOPE CALIBRATION DURING THE SAMSAT-ION
NANOSATELLITE MISSION
Angelo Espinoza Valles, Russian Federation

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12:50-13:00 IAC-24/B3/IPB/84042
SUSTAINABLE LIFE BEYOND EARTH. A DESIGN DRIVEN LIVING
LAB TO CREATE NEW HUMAN EXPERIENCES IN THE SPACE
HABITAT.
Laura Succini

13:00-13:10 IAC-24/B3/IPB/87853
TOOL FOR REAL-TIME MONITORING AND ANALYSIS OF THE
EXERCISE IN THE ICE ENVIRONMENT
Miroslav Rozložník, Czech Republic

13:10-13:20 IAC-24/B3/IPB/84245
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LUNAR KINETIC LAUNCH SYSTEMS
Javier Alonso Garcia

13:20-13:30 IAC-24/B3/IPB/91133
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ANALOG MISSION IN THE LUNARES HABITAT
Matej Poliacsek, Slovak Republic

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12:50-13:00 IAC-24/B3/IPB/84652
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ACCESSIBLE MISSIONS.
Irene Di Giulio, United Kingdom

13:00-13:10 IAC-24/B3/IPB/86742
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SUPPORT INFRASTRUCTURE: A CONCEPT STUDY
Mark Hemsell, United Kingdom

13:10-13:20 IAC-24/B3/IPB/87541
INHERENT SENSING METHOD OF INCHWORM-INSPIRED SOFT
ROBOT FOR SPACE STATION TUBULAR INSPECTION
ZiYue Zhao, China

13:20-13:30 IAC-24/B3/IPB/91885
MICROGRAVITY AS THE NEXT GREAT SCIENCE LABORATORY:
ENABLING THE NEXT GENERATION OF RESEARCH ASTRONAUTS
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Shawna Pandya

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Matthew Ziglar

13:00-13:10 IAC-24/B3/IPB/80814
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ASTRONAUTS PERFORMING SIDE HATCH EGRESS OF AN ORION
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Erik Seedhouse, United States

13:10-13:20 IAC-24/B3/IPB/90924
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OF THE ICEE SUIT
Charlotte Pouwels

13:20-13:30 IAC-24/B3/IPB/83400
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Karin Yoshino

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Florian Saling, Germany

13:00-13:10 IAC-24/B3/IPB/83896
INNOVATIVE ANTI-FOGGING SYSTEM FOR SPACESUITS:
ENHANCING VISIBILITY AND SAFETY IN CHALLENGING
ENVIRONMENTS
Arwa Bin tareef, Jordan

13:10-13:20 IAC-24/B3/IPB/91722
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DEFINITION (EXPAND) ESSENTIAL MEASURES PROTOCOL FOR
COMMERCIAL SPACEFLIGHT BIOMEDICAL RESEARCH
Jimmy Wu

13:20-13:30 IAC-24/B3/IPB/87866
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THE MOON & MARS (SAM) TERRESTRIAL HABITAT ANALOG,
BIOSPHERE 2
Kai Staats

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WEB-INTERFACE FOR ROVER TELEOPERATION TO INVESTIGATE
THE IMPACT OF EXTREME ENVIRONMENTS
Elena López-Contreras

13:00-13:10 IAC-24/B3/IPB/91579
OXYTOCIN'S ROLE IN SPACE TEAM DYNAMICS AND COGNITION:
A NEUROECONOMIC PERSPECTIVE
Kavya Murali Parthasarathy

13:10-13:20 IAC-24/B3/IPB/88172
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COLONIZATION THROUGH IN-SITU RESOURCE UTILIZATION
(ISRU)
Aagam Jain, India

13:20-13:30 IAC-24/B3/IPB/82965
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Natausha Chohan, United States

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Francesco Sauro, Italy

13:00-13:10 IAC-24/B3/IPB/84583
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CHINA MANNED LUNAR EXPLORATION MISSION USING MBSE
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Suquan Ding

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Rowan Moorkens O'Reilly, France

13:20-13:30 IAC-24/B3/IPB/84375
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Kiran Mankame

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AREAS OF OPPORTUNITY FOR INCORPORATION OF ARTIFICIAL
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Oscar Ojeda

13:00-13:10 IAC-24/B3/IPB/84966
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CABIN
Ke Ma, China

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Stefano Ellero

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12:50-13:00 IAC-24/B3/IPB/82450
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Hernan David Mateus Jimenez, United States

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Diego Cagna, Italy

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12:50-13:00 IAC-24/B4/IPB/91683
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Roberto Carlino

13:00-13:10 IAC-24/B4/IPB/90375
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Leon Lukaschek, Germany

13:10-13:20 IAC-24/B4/IPB/84342
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ALPER ŞANLI, Türkiye

13:20-13:30 IAC-24/B4/IPB/90085
WILDTRACKCUBE-SIMBA CUBESAT ATTITUDE DETERMINATION
AND CONTROL FLIGHT DATA ANALYSIS
Sidhant Kumar, Italy

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12:50-13:00 IAC-24/B4/IPB/89123
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IN LEO
Mahhad Nayyer

13:00-13:10 IAC-24/B4/IPB/88648
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MM-SIZED SPACE DEBRIS
Alessio Bocci, Norway

13:10-13:20 IAC-24/B4/IPB/85467
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Jonathan Hertel, Germany

13:20-13:30 IAC-24/B4/IPB/87556
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Yoichi Yatsu, Japan

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Wilhelm Kristiansen, Norway

13:00-13:10 IAC-24/B4/IPB/91321
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Hamid Jalalian Javadpour, Norway

13:10-13:20 IAC-24/B4/IPB/85795
ANALYSIS OF THE INFLUENCE OF GRAVITY-GRADIENT TORQUE
ON POWER GENERATION IN THE CUBESAT STANDARD
Yasmin Avelino, Brazil

13:20-13:30 IAC-24/B4/IPB/91235
PERCEPTION DATA SYSTEM FOR SATELLITE MONITORING OF
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Renato Borges, Brazil

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12:50-13:00 IAC-24/B4/IPB/87794
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Q-SAT PRECISE ORBIT DETERMINATION DATA AND NUMERICAL
SIMULATION
Guangwei Wen, China

13:00-13:10 IAC-24/B4/IPB/86596
CONSTRAINTS AND CHALLENGES IN GUIDANCE, NAVIGATION
AND CONTROL ARCHITECTURES FOR BEYOND EARTH ORBIT
CUBESAT MISSIONS
Karthik R Varma, India

13:10-13:20 IAC-24/B4/IPB/83765
SABHASAT: A GAMMA RAY BURSTS DETECTING CUBESAT
Snehadeep Kumar, India

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You gwang KIM, Korea, Republic of

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 TECHNOLOGIES OF THE POQUITO PICO-SATELLITE MISSION: THE FIRST POCKETQUBE OF THE UNIVERSITY OF LUXEMBOURG
Vittorio Franzese, Luxembourg

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 ADAPTIVE AND CONSISTENT RISK ASSESSMENT AND UTILITY OF NEAR-EARTH OBJECTS USING AUTONOMOUS HYBRID SMALL SATELLITE CONSTELLATIONS
Mohammed Irfan Rashed, Korea, Republic of

13:10-13:20 IAC-24/B4/IPB/81318
 LEVERAGING SATELLITE COMMUNICATION TECHNOLOGY TO ENHANCE FISH PRODUCTION
Erick Villa Okeyo, Kenya

13:20-13:30 IAC-24/B4/IPB/86542
 SCALABILITY AND SIMPLICITY: ENHANCING SATELLITE SOFTWARE FRAMEWORK WITH REGISTER-BASED TECHNIQUES FOR A CUBESAT
Noppakao Boonnun, Thailand

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 AUTONOMOUS OPERATIONS PLANNING METHOD FOR MICRO/NANO SATELLITES FOCUSING ON REALISTIC POWER CONSTRAINTS
Yuma Sato, Japan

13:00-13:10 IAC-24/B4/IPB/90207
 F-SERIES: A GENERIC DEVELOPMENT KIT FOR INTELLIGENT MINI AND SMALL SATELLITES
Jens Eickhoff, Germany

13:10-13:20 IAC-24/B4/IPB/83861
 DETECTION AND TRACKING OF SPACE DEBRIS IN Cislunar ENVIRONMENT - A PHASE 0 MISSION DESIGN
Katharina-Inés Janisch, Lithuania

13:20-13:30 IAC-24/B4/IPB/85847
 ANALYZING THE CAPABILITY OF DIFFERENT PASSIVE CONTROL TECHNIQUES TO ACHIEVE ATTITUDE STABILIZATION FOR SMALL SATELLITE MISSIONS
Muhammad Taha Ansari, United Arab Emirates

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 REVOLUTIONIZING SPACECRAFT DATA EXCHANGE: AN ADVANCED NFC-BASED COMMUNICATION SYSTEM FOR SMALL SATELLITES
Chiara Lughi, Italy

13:00-13:10 IAC-24/B4/IPB/83943
 MULTI-TARGET CONTINUOUS COVERAGE CONSTELLATION USING LOW-THRUST RECONFIGURATION STRATEGY
Zhengqing Fang, China

13:10-13:20 IAC-24/B4/IPB/84438
 ATTITUDE PLANNING FOR A TIME DELAY INTEGRAL MISSION OF A 6U CUBESAT ONGLAISAT
Hirokata Sekine, Japan

13:20-13:30 IAC-24/B4/IPB/82749
 POWER AND LINK BUDGET ANALYSIS OF A LOW EARTH ORBIT STUDENT CUBESAT FOR DETECTION OF LIGHTNING DISCHARGES
João Victor Moreira, Brazil

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 A NEW NANOSAT FORMAT FOR EDUCATION: DESIGN DETAILS AND STATUS REPORT
Supriya Chakrabarti, United States

13:00-13:10 IAC-24/B4/IPB/84898
 SMALLSATS IN DEEP SPACE: TIME-VARYING MISSION PROFILES TO INFORM FUTURE TECHNOLOGY DEVELOPMENT.
Belen Lopez Pardo, United Kingdom

13:10-13:20 IAC-24/B4/IPB/83410
 SMALL PHOTOSYNTHETIC SATELLITES FOR THE CONCEPTUAL VALIDATION OF THEIR POTENTIAL TO ENSURE SUSTAINABLE LONG-TERM SPACE EXPLORATION
Nataly Andrea Rojas Barnett, Peru

13:20-13:30 IAC-24/B4/IPB/85210
 MODELLING OF RELATIVE MOTION CONSTRAINT FOR MEGA CONSTELLATIONS UNDER MINIMUM COVERAGE MULTIPLICITY REQUIREMENT
Yun Xu, China

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 ARABIAEYE: ENHANCING EARTH OBSERVATION MISSIONS WITH A NOVEL SMALL SATELLITE CONSTELLATION AND ADVANCED DATA FUSION TECHNIQUES - A CASE STUDY ON OIL SPILL DETECTION
Dario Scilla

13:00-13:10 IAC-24/B4/IPB/83792
 NEURAL NETWORK-BASED MAGNETOMETER CALIBRATION AND ATTITUDE DETERMINATION FOR MAGNETIC-DEVICE-BASED SMALL SATELLITES
Shuo Mu, China

13:10-13:20 IAC-24/B4/IPB/81847
 GROUND STATION NETWORK ARCHITECTURE FOR SCHEDULED REMOTE OPERATIONS OF BIRDS BUS CUBESATS IN PARTNER COUNTRIES
MUJUNI EDGAR, Japan

13:20-13:30 IAC-24/B4/IPB/86399
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Roberto David Aleman Ramos

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Cadence Payne, United States

13:00-13:10 IAC-24/B4/IPB/87159
 ECLIPSING BOUNDARIES: MINICOR CUBESAT DESIGN FOR NEXT-GENERATION SOLAR OBSERVATION
Gabriel Jose Gutierrez

13:10-13:20 IAC-24/B4/IPB/83310
 THE GAMMA-RAY BURSTS LOCALIZATION INSTRUMENT (GALI) ONBOARD NOVASAT - MISSION CONCEPT AND DESIGN
Hilel Rubinstein, Israel

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Tiancheng Chai, China

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12:50-13:00 IAC-24/B4/IPB/83855
IMAGE SIMULATION AND PROCESSING FOR TIME AND PHASE SYNCHRONIZATION IN SPACEBORNE DISTRIBUTED SYNTHETIC APERTURE RADAR
Gianluca Coppa, Italy

13:00-13:10 IAC-24/B4/IPB/87877
6U+ CUBESAT SONATE-2: OPERATION OF AN OPTICAL AI PAYLOAD IN LOW EARTH ORBIT
Tobias Herbst, Germany

13:10-13:20 IAC-24/B4/IPB/90716
IMPLEMENTING LOW-COST ADCS FOR 1U CUBESAT: INSIGHTS FROM ALEASAT
Yousif El-Wishahy, Canada

13:20-13:30 IAC-24/B4/IPB/89378
GENEO-02: A LOW-EARTH ORBIT SMALL SATELLITE MISSION TO PROVIDE EARTH OBSERVATION, INTERNET OF THINGS SATELLITE DATA SERVICES AND TO DEMONSTRATE TECHNOLOGY IN-ORBIT
Marc Ortega Playà

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MAPPING LUNAR TRANSIENT PHENOMENA WITH A CUBESAT CONSTELLATION: MOTHS MISSION CONCEPT AND DESIGN
Michela Boscia

13:00-13:10 IAC-24/B4/IPB/81413
DESIGN OF A SCIENTIFIC EXPERIMENT ABOARD A 3U CUBESAT FOR THE DETECTION OF POLLUTANT PARTICLES USING INFRARED SPECTROMETRY
Abigail Sanchez Gonzalez, Mexico

13:10-13:20 IAC-24/B4/IPB/88257
ON-BOARD DATA PROCESSING SYSTEM FOR HYPERSPECTRAL EO CUBESAT MISSION
Rado Pitonak, Czech Republic

13:20-13:30 IAC-24/B4/IPB/81026
REAL TIME ESTIMATION OF PM 2.5 IN MEXICO CITY, USING IOT, A NETWORK OF GROUND STATIONS USING LORA, WITH INTEGRATION OF SATELLITE DATA AND ARTIFICIAL INTELLIGENCE.
Axel Núñez Arzola, Mexico

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THE ALCOR MISSION FUTURE: AN IN-ORBIT DEMONSTRATOR FOR ON-BOARD FULLY AUTONOMOUS VISION-BASED NAVIGATION
Alessandro Morselli, Italy

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BOREALIS: A MULTIDISCIPLINARY CUBESAT MISSION TO INVESTIGATE BIOFILM RADIOPROTECTION AND PARTICLE INTERACTION IN SPACE
Stefano Carletta, Italy

13:10-13:20 IAC-24/B4/IPB/85139
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Elise Wright Knutsen

13:20-13:30 IAC-24/B4/IPB/90176
YPSAT: ESA'S YOUNG PROFESSIONAL SATELLITE FOR THE INAUGURAL FLIGHT OF ARIANE 6
Daniel Wischert, The Netherlands

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Riccardo Maderna

13:00-13:10 IAC-24/B6/IPB/85253
MACHINE LEARNING-BASED SPACECRAFT SENSORS RECONSTRUCTION USING FLIGHT TELEMETRY DATA
Francesco Corallo, Italy

13:10-13:20 IAC-24/B6/IPB/89478
SPACE-GROUND TT&C RESOURCES INTEGRATED SCHEDULING FOR SPACE STATION TASKS
Jianqiang Tang, China

13:20-13:30 IAC-24/B6/IPB/89171
PROPOSAL OF HEALTH MONITORING METHOD USING SATELLITE HEALTH MAP BASED ON FEATURE REPRESENTATION
Shun Katsube, Japan

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12:50-13:00 IAC-24/B6/IPB/91779
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Tarana Karimova

13:00-13:10 IAC-24/B6/IPB/90238
ADVANCING PLANETARY ROVER MOBILITY: TERRAMECHANICS WHEEL-TERRAIN MODELING IN A REAL-TIME SIMULATION FRAMEWORK
Karin Kruuse, Estonia

13:10-13:20 IAC-24/B6/IPB/85091
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Lucio Pinello, Italy

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Michael Schmidhuber

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MACHINE LEARNING-DRIVEN ANOMALY DETECTION AND FORECASTING FOR EUCLID SPACE TELESCOPE OPERATIONS
Pablo Gomez, Spain

13:00-13:10 IAC-24/B6/IPB/82954
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Aobo Yang

13:10-13:20 IAC-24/B6/IPB/83574
MOTION PLANNING STRATEGY FOR REACTIVE SPACE ROBOT BASED ON SAMPLING MODEL PREDICTIVE CONTROL
Pudong Liu, China

13:20-13:30 IAC-24/B6/IPB/82757
OPTIMAL ROBOTIC ARM DESIGN FRAMEWORK FOR ON-ORBIT SERVICING
Mitchell Kurnell, Canada

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Liming Wu, China

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INFORMING SPACE OPERATIONS: A BROADCAST NETWORK FOR COOPERATIVE TRAFFIC MANAGEMENT AND ZERO-GAP TELEMETRY
Ralph Ewig, United States

13:10-13:20 IAC-24/B6/IPB/91661
DESIGNING A MOBILE ROBOTIC SYSTEM FOR LOW-COST, HIGH-ACCURACY PLANETARY SCIENCE
Cameron Rough

13:20-13:30 IAC-24/B6/IPB/87597
REHEARSING THE SCRIPT BEFORE THE IOD PREMIERE: AN OVERVIEW OF ROMEO'S SIMULATOR FOR EFFICIENT REAL TIME SYSTEM VERIFICATION
Denis Michael Acker, Germany

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Sachika Takeshita, Japan

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OFF-A: SOFTWARE OFFLINE CORRELATOR FOR ANTENNA ARRAY
Alessandro Ardito, Italy

13:10-13:20 IAC-24/B6/IPB/85996
COLLISION AVOIDANCE AND RETURN MANOEUVRE OPTIMISATION FOR LOW-THRUST SATELLITES USING REINFORCEMENT LEARNING
Alexandru Solomon, Romania

13:20-13:30 IAC-24/B6/IPB/81997
FOSTERING SAFETY CULTURE: AN ANONYMOUS SAFETY REPORTING PROGRAM FOR SPACE ANALOG MISSIONS
Emily Apollonio, United States

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12:50-13:00 IAC-24/B6/IPB/91786
SOFTWARE-DEFINED SATELLITE CONSTELLATION NETWORK MANAGEMENT IN THE CLOUD
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Robert Magner

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Edward Tomanek-Volynets, United Kingdom

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Shota Ito

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Vincent Ugolini, Korea, Republic of

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Kyun Ho Lee, Korea, Republic of

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Pierre-Baptiste LAMBERT, France

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Giovanni Lavezzi, United States

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Seok-Bae SEO

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Alessandro Aimasso, Italy
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Krishna Kumar, Canada
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Nidhi Kamra, Canada

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Avid Roman-Gonzalez, Peru
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Shreya Santra, Japan

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Domenico Scopelliti
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Julia van den Toren, Germany
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Hadi Jahanshahi, Canada
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Janardhan Silwal
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Olivia Maria Joikits, Austria
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Jaekyun Lee, Korea, Republic of

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Jiancen Liu, China

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SungRyoung Lee

13:20-13:30 IAC-24/D2/IPB/87073

FLIGHT DYNAMICS SIMULATION AND AERODYNAMIC DATABASE OF A RETRO-PROPULSION ASSISTED REUSABLE LAUNCHER WITHIN THE RETPRO PROJECT

Josef Klevanski

SCREEN #78

12:50-13:00 IAC-24/D2/IPB/84866

FUEL EFFICIENCY ANALYSIS OF THE JET ENGINE AND SOLID-PROPELLANT BASED SMALL REUSABLE SUB-ORBITAL LAUNCH VEHICLE CANDIDATES

Shinhyung Kim, Korea, Republic of

13:00-13:10 IAC-24/D2/IPB/91071

CONCEPT FOR A COMPACT AND FAST SPACEPLANE DELIVERY SYSTEM

Giacomo Grigoli, Italy

13:10-13:20 IAC-24/D2/IPB/82197

AUTOMATED MODEL-DRIVEN OPERATION APPROACH USING OPEN-SOURCE SCRIPT

Kwangsoo Kim

13:20-13:30 IAC-24/D2/IPB/87335

UNLOCKING SPACE: DESIGNING A DEDICATED LAUNCHER FOR SMALL SATELLITE MISSIONS

Avid Roman-Gonzalez, Peru

SCREEN #79

12:50-13:00 IAC-24/D2/IPB/85261

PAYLOAD ORBIT MODIFICATION USING MAGLEV ACCELERATORS

Paul Iustin Vartolomei, Romania

13:00-13:10 IAC-24/D2/IPB/91753

THE FIRST STEPS OF THE SPACEPORT IN PERU: TOWARDS CONSOLIDATION AS THE LARGEST IN SOUTH AMERICA

Juan Salvador Palacios Bett

13:10-13:20 IAC-24/D2/IPB/88608

A STUDY INTO THE EFFECTIVENESS OF A GROUND-BASED ELECTROMAGNETIC LAUNCHER FOR THE PURPOSES OF DEVELOPMENT OF A TECHNOLOGY DEMONSTRATOR

Geovian Stower, Kenya

13:20-13:30 IAC-24/D2/IPB/82910

ON THE DEVELOPMENT OF RAFTI: A COMMERCIAL IN-SPACE REFUELING VALVE

Kevin Smith, United States

SCREEN #80

12:50-13:00 IAC-24/D2/IPB/91654

THE GUIDANCE PROBLEM OF SIDEREUS SPACE DYNAMICS' INNOVATIVE SINGLE-STAGE-TO-ORBIT VEHICLE: A DIRECT TRANSCRIPTION APPROACH

Niccolò Giannone

13:00-13:10 IAC-24/D2/IPB/85968

OPTIMISATION OF CATEGORICAL CHOICES IN EXPLORATION MISSION CONCEPTS OF OPERATIONS USING BRANCH-AND-PRICE METHOD

Nick Gollins

13:10-13:20 IAC-24/D2/IPB/82872

TWO NEW LAUNCH PLATFORMS FOR AIR-LAUNCHED ROCKETS

YAN LYU, China

13:20-13:30 IAC-24/D2/IPB/88415

SUSTAINABLE TRANSPORT CHAINS FOR COMMERCIAL ASTEROID MINING

Samiksha Raviraja, United Kingdom

SCREEN #81

13:00-13:10 IAC-24/D3/IPB/91637

STEPS TOWARDS AN OPTIMIZED GAS TREATMENT SYSTEM FOR THE PRODUCTION OF PLASMA ACTIVATED WATER

Jessica Schwend

13:10-13:20 IAC-24/D3/IPB/84293

PLASMA REACTORS FOR CHEMICAL CONVERSION AND RESOURCE GENERATION BEYOND LOW-EARTH ORBIT

Lanie McKinney, United States

13:20-13:30 IAC-24/D3/IPB/90804

TEC - THERMAL ENERGY CONVERSION

Maë N'Guyen Bousseau, France

SCREEN #82

13:00-13:10 IAC-24/D3/IPB/82048

SPACE COPY: EXPLORING PIONEERING TECHNOLOGIES FOR IN-SITU RESOURCE UTILIZATION AND LUNAR ENABLED ADDITIVE MANUFACTURING FOR INFRASTRUCTURE PRODUCTION IN-SITU

Madison Feehan, Canada

13:10-13:20 IAC-24/D3/IPB/89528

SUSTAINABLE LUNAR SETTLEMENT DESIGN CHARRETTE: HOW SCIENCE REQUIREMENTS DRIVE SUSTAINABLE LUNAR HABITAT DESIGN

Abdulaziz Alareedh, Kuwait

13:20-13:30 IAC-24/D3/IPB/90774

A LUNG SYSTEM FOR THE MARTIAN SHAPE-SHIFTER

Aysel Seyfullayeva, Azerbaijan

SCREEN #84

13:10-13:20 IAC-24/D4/IPB/90081

EMPOWERING ARMY 4.0: SPACE TECHNOLOGIES FOR ENHANCED MULTI-DOMAIN OPERATIONS

Andrea Lanci, Italy

13:20-13:30 IAC-24/D4/IPB/86456

LEVERAGING ARTIFICIAL INTELLIGENCE FOR ENHANCED LABORATORY RESEARCH AT THE SHARJAH ACADEMY FOR ASTRONOMY, SPACE SCIENCES, AND TECHNOLOGY

Aisha Alowais

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12:50-13:00 IAC-24/D4/IPB/86336
BEYOND THE LIMITS - ARBITRARILY LARGE ROTATING SPACE HABITATS THROUGH STRUCTURAL DECOUPLING
Elliott Ruzicka

13:00-13:10 IAC-24/D4/IPB/90737
HARMONY BEYOND EARTH: VISION AND RELEVANCE OF 'VASUDHAIVA KUTUMBAKAM' FOR SPACE DIPLOMACY
Rachita Agrawal, India

13:10-13:20 IAC-24/D4/IPB/88029
SELF-REPLICATING MACHINES
Ravan Akhundov, Azerbaijan

13:20-13:30 IAC-24/D4/IPB/80872
THE PREVALENCE OF NEURODIVERGENT PROFILES IN THE SPACE SECTOR AND THEIR IMPACT ON DECISION-MAKING PROCESSES FOR THE FUTURE OF SPACE ACTIVITIES
Victoria Valdivia, Chile

SCREEN #86

12:50-13:00 IAC-24/D4/IPB/83913
APPLICATION OF TETHER TECHNOLOGY TO GENERATE ARTIFICIAL GRAVITY IN A SLOWLY-SPINNING SYSTEM FOR HUMAN EXPLORATION MISSIONS
Samuele Enzo, Italy

13:10-13:20 IAC-24/D4/IPB/83411
BEYOND BOUNDARIES: "THE UNREAL VISION OF ADAPTABLE HABITATS ON MARS
Laman Rustamzade, Azerbaijan

SCREEN #87

12:50-13:00 IAC-24/D4/IPB/83175
THAICOM'S PERSPECTIVES: THAILAND SPACEPORT BUSINESS MODEL ANALYSIS AND IMPACT ON SPACE INDUSTRY IN THE COUNTRY
Ammarin Pimnoo, Thailand

13:00-13:10 IAC-24/D4/IPB/81629
EXPLOITING COSMIC RESOURCE PROGRESS IN SPACE INDUSTRY USING PENALIZED LINEAR REGRESSION
Uday Kiran Elemasetty, Canada

13:10-13:20 IAC-24/D4/IPB/85539
LUNAR MINING POTENTIAL FOR HELIUM 3 FOR UNLIMITED ENERGY ON THE MOON AND EARTH
Ugur Guven

SCREEN #88

12:50-13:00 IAC-24/E1/IPB/90255
TWO-YEAR INITIATIVE FOR BALLOON SAT COTEST FOR HIGH SCHOOL STUDENTS
Yukikazu Murakami, Japan

13:00-13:10 IAC-24/E1/IPB/90889
CURATING INSTITUTIONAL MEMORY IN HIGH-PACED SPACE ORGANIZATIONS
Nora Ytterboe, Norway

13:10-13:20 IAC-24/E1/IPB/86202
SELF REGULATED LEARNING IN SPACE BIOLOGY : THE "ALMOST ENGINEERS" CASE IN BOLIVIA
Georgina Chavez, Bolivia

13:20-13:30 IAC-24/E1/IPB/81945
ADVANCING WORLDWIDE INTEREST IN SPACEFLIGHT THROUGH A NONPROFIT OPEN DATA INITIATIVE
Arnaud Muller, France

SCREEN #89

12:50-13:00 IAC-24/E1/IPB/80862
STARLAB EXPERTLINK – A GLOBAL BEST-PRACTICE TO BRING SPACE EXPERTISE INTO CLASSROOMS VIA A DESIGN CHALLENGE RELATED TO COMMERCIAL SPACE-STATION RESEARCH AND DEVELOPMENT
Howard Greene

13:00-13:10 IAC-24/E1/IPB/84992
LINKING AUSTRALIA'S REMOTE SCHOOLS TO SPACE EDUCATION: A PILOT STUDY
Darcey Watson

13:10-13:20 IAC-24/E1/IPB/86211
SOUNDWALKING THROUGH SPACE: EXPLORING THE SONIC INTERPLANETARY AND COSMIC IMAGINARY
Lauren Knight, Canada

13:20-13:30 IAC-24/E1/IPB/90240
AMAZE SPACE CAMP: A GATEWAY TO SPACE EXPLORATION AND STEAM EDUCATION FOR HIGH SCHOOL STUDENTS IN MOROCCO THROUGH IMMERSIVE OUTREACH
El Hassan Bouaghad, France

SCREEN #90

12:50-13:00 IAC-24/E1/IPB/88107
CONTEMPORARY STANCE TO SPACE EDUCATION PEDAGOGY IN RURAL AREAS
Sri Venkata Vathsala Musunuri, Canada

13:00-13:10 IAC-24/E1/IPB/85661
AGILE FOR PROJECT-BASED STEM-STUDENTS WORK: SMALL-SIZE DESCENT VEHICLE PROJECT CASE STUDY
Veronika Kameneva, Russian Federation

13:10-13:20 IAC-24/E1/IPB/90247
THE A3SAT EMULATOR: A CATALYST IN DISRUPTIVE CUBESAT AND SPACE TECHNOLOGY EDUCATION
John Moore, United States

13:20-13:30 IAC-24/E1/IPB/86983
HOW CAN UNISEC ACTIVITIES CONTRIBUTE TO SPACE WORKFORCE DEVELOPMENT IN NON-SPACEFARING COUNTRIES?
Rei Kawashima, Japan

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SCREEN #1

12:50-13:00 IAC-24/A5/IPB/87485

THE SAFETY OF COOPERATION. CAUSES AND CONDITIONS OF SUSTAINABLE AND FRUITFUL INTER-HUMAN COOPERATION IN THE DESIGN OF LONG-DURATION AUTONOMOUS MANNED MISSIONS.

Stephane Gres, France

13:20-13:30 IAC-24/A5/IPB/89360

DESIGN STRATEGY FOR INTEGRATING RADIATION PROTECTION AND LIFE SUPPORT SYSTEMS IN SPACE HABITATS

Olga Bannova, United States

SCREEN #2

12:50-13:00 IAC-24/A5/IPB/84557

JGC'S VISION FOR A LUNAR SOCIETY

"LUMARNITY™(LUNAR SMART COMMUNITY™)"

Kiho Fukaura, Japan

SCREEN #3

12:50-13:00 IAC-24/A5/IPB/86520

SIMULATION-DRIVEN MARS EXPLORATION: ADVANCING MARS COLONIZATION THROUGH STRATEGIC PLANNING AND CUTTING-EDGE TECHNOLOGIES

Baladitya Rane, India

13:00-13:10 IAC-24/A5/IPB/87913

FINDING SOLUTIONS FOR WATER AND RESOURCE MAPPING ON THE MOON: THE SPACE ANTS INITIATIVE

David Augusto Galvan Alvarado, Mexico

SCREEN #4

12:50-13:00 IAC-24/A5/IPB/91743

BIOMEDICAL EMBEDDED SYSTEM FOR MONITORING TEMPERATURE IN SPACESUITS DURING EXTRAVEHICULAR ACTIVITIES IN ANALOG MISSIONS FOR MARS AND THE MOON

Paul Palacios

13:00-13:10 IAC-24/A5/IPB/82488

THERMO-ECONOMIC ANALYSIS OF MARTIAN HABITATS

Evandros Theodosiou, United Kingdom

SCREEN #5

13:20-13:30 IAC-24/A5/IPB/89474

TERRAFORMING THE RED PLANET: NAVIGATING CONTROLLED GREENHOUSE GAS EMISSION AND ADVANCED PROTECTION PROTOCOLS

Gurunadh Velidi, India

SCREEN #6

12:50-13:00 IAC-24/B1/IPB/84764

A FRAMEWORK FOR IMPROVED GROUND TRUTHING OF SPACE IMAGERY UTILIZING SPACE IOT FOR BETTER SOCIO-ECONOMIC GROWTH

Muneera Almalki, Bahrain

13:00-13:10 IAC-24/B1/IPB/88815

ARCHITECTURE AND DESIGN CONSIDERATIONS OF A MASS MEMORY MODULE FOR SMALL SATELLITE PLATFORMS

Maïke Taddiken, Germany

13:10-13:20 IAC-24/B1/IPB/88891

ASSESSMENT OF YOLO'S CAPABILITIES FOR OBJECT DETECTION IN OPTICAL SATELLITE IMAGERY

Alessia Sbriglio, Italy

13:20-13:30 IAC-24/B1/IPB/84011

DEEP HASHING WITH MULTI-LEVEL CONTRASTIVE LEARNING FRAMEWORK FOR REMOTE SENSING IMAGE RETRIEVAL

Mingkun Li, China

SCREEN #7

12:50-13:00 IAC-24/B1/IPB/85960

THE USE OF SATELLITE IMAGERY IN INTERNATIONAL CRIMINAL PROCEEDINGS: THE AL MAHDI CASE

Katharina Anna Harreiter, Austria

13:00-13:10 IAC-24/B1/IPB/83176

INVESTIGATION OF MULTIPLE-SATELLITE FORMATION CONFIGURATIONS FOR SINGLE-PASS SYNTHETIC APERTURE RADAR INTERFEROMETRY

Francesca Scala, Germany

13:10-13:20 IAC-24/B1/IPB/90878

SPATIAL PLANNING IN COASTAL AREAS THROUGH GEOGRAPHIC INFORMATION SYSTEMS

Nubar Habizadeh, Azerbaijan

13:20-13:30 IAC-24/B1/IPB/90976

POTENTIALITIES OF PRISMA IMAGERY FOR FOREST MAPPING: FIRST RESULTS.

Fabiana Ravellino

SCREEN #8

12:50-13:00 IAC-24/B1/IPB/89244

ENHANCING PRECISION AGRICULTURE FOR WOODY CROPS THROUGH PUBLICO-PRIVATE COLLABORATION

Roger Huerta i Lluch, Spain

13:00-13:10 IAC-24/B1/IPB/89480

SUPER-RESOLUTION-BASED SMALL OBJECT DETECTION FOR REAL-TIME SURVEILLANCE AND MONITORING: AN ONBOARD SATELLITE FPGA IMPLEMENTATION

Giovanni Maria Capuano, Italy

13:10-13:20 IAC-24/B1/IPB/84463

SATELLITE TELEMETRY ANOMALY DETECTION BASED ON MACHINE LEARNING ALGORITHMS

Yichuan Man, China

13:20-13:30 IAC-24/B1/IPB/86465

ANALYSIS OF VEGETATION CHANGES IN OIL-CONTAMINATED LANDS BASED ON MULTISPECTRAL IMAGING AND GIS TECHNOLOGIES

Madina Amiraslanova, Azerbaijan

SCREEN #9

13:00-13:10 IAC-24/B1/IPB/87170

FIRE PREDICTION MODELING AND RISK MAPPING USING RECENT AI TOOLS IN CLIMATE CHANGE.

Asma Betteka, Russian Federation

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13:10-13:20 IAC-24/B1/IPB/81975
UNVEILING KENYA'S INAUGURAL EARTH OBSERVATION SATELLITE
Olivia Mwaniki, Kenya

13:20-13:30 IAC-24/B1/IPB/86239
PRECISION AGRICULTURE: CULTIVATING A SMARTER FUTURE WITH EARTH OBSERVATION AND MACHINE LEARNING
Alberto Y. Aguilar-Bautista, Mexico

SCREEN #10

12:50-13:00 IAC-24/B1/IPB/85189
THE MAPITALY ACQUISITIONS PLAN OVERVIEW AND THE NEW MAPITALY PORTAL
Gianluca Pari, Italy

13:00-13:10 IAC-24/B1/IPB/86455
ADVANCING PALM TREE MONITORING IN THE UAE: BENCHMARK DATASET DEMONSTRATION WITH AI TECHNIQUES
Mina Al-saad, United Arab Emirates

13:10-13:20 IAC-24/B1/IPB/81017
INSIGHT4EO - AI-ENABLED ON-BOARD PROCESSING PRODUCTS FOR LOW-LATENCY EARTH OBSERVATION
Rohaam Ahmed, United Kingdom

13:20-13:30 IAC-24/B1/IPB/90990
ENHANCING EARTH OBSERVATION COORDINATION TO ADDRESS SOCIO-ECONOMIC AND ENVIRONMENTAL CHALLENGES
Lulu Makapela, South Africa

SCREEN #11

12:50-13:00 IAC-24/B1/IPB/87488
INVESTIGATING AMPLITUDE AND INSAR PHASE FROM PASSIVE AND ACTIVE ARTIFICIAL REFLECTORS
Alessandro Parisi, Italy

13:00-13:10 IAC-24/B1/IPB/81732
EARTH OBSERVATION SYSTEMS
Rakan Alshammari, United States

13:10-13:20 IAC-24/B1/IPB/87092
SPACE AS A DOMAIN FOR SCIENCE DIPLOMACY: HOW NEW SPACE BECAME EMBEDDED IN INTERNATIONAL RELATIONS.
Aoihín Crowley

13:20-13:30 IAC-24/B1/IPB/87417
FULLY AUTOMATED EXTRACTION OF ACCURATE GROUND CONTROL POINTS FROM SENTINEL-1/2 ACQUISITIONS
Alessandro Parisi, Italy

SCREEN #12

12:50-13:00 IAC-24/C2/IPB/85728
IN-SITU REGOLITH AND METAL FUEL REACTIONS FOR LUNAR AND MARTIAN ADDITIVE MANUFACTURING
Connor MacRobbie, Canada

13:00-13:10 IAC-24/C2/IPB/91728
SELF-RETRACTABLE SOLAR PANEL USING A NITINOL AND HAMFNIUM STRUCTURE FOR LUNAR SURFACE APPLICATIONS.
Omar Saldana Penetro

13:10-13:20 IAC-24/C2/IPB/83209
USING PYROTECHNIC DEVICES IN THE DEVELOPMENT OF SEPARATION SYSTEMS FOR ROCKET AND SPACE TECHNOLOGIES
Anatolii Lohvynenko, Ukraine

SCREEN #13

12:50-13:00 IAC-24/C2/IPB/88864
ADDITIVELY MANUFACTURED AEROSPACE STRUCTURES UTILIZING 3D-PRINTED BIOPLASTIC DERIVED FROM AVOCADO WASTE
Ariana Rossell Tapia Salas, Mexico

13:00-13:10 IAC-24/C2/IPB/80794
RADIATIONS EFFECTS ON FPGA DEVICES IN SPACE MISSIONS
chafika belamri, Algeria

13:10-13:20 IAC-24/C2/IPB/83048
VACUUM ARC COATINGS FROM HEAT-RESISTANT ALLOYS FOR COMBUSTION CHAMBERS OF LIQUID-PROPELLANT ROCKET ENGINES
Iryna Husarova, Ukraine

13:20-13:30 IAC-24/C2/IPB/89851
GEOMETRIC COMPARISON OF A NATURAL RUBBER PAD FOR VIBRATION MITIGATION IN THE PAYLOAD OF A SOUNDING ROCKET
Ariana Rossell Tapia Salas, Mexico

SCREEN #14

12:50-13:00 IAC-24/C2/IPB/83013
CFD INVESTIGATION AND OPTIMIZATION ON THE EXTERNAL AERODYNAMICS OF A SOUNDING ROCKET
Massimo Della Monica, Italy

13:00-13:10 IAC-24/C2/IPB/89857
ADVANCING EXPERIMENTAL ROCKETRY: FDM-ENABLED CERAMIC NOZZLES FOR LOW-BUDGET EXPERIMENTAL PROPELLANTS
Diego Pérez Reyes, Mexico

13:10-13:20 IAC-24/C2/IPB/83206
INVESTIGATION OF ULTRA-LIGHTWEIGHT AND AUTONOMOUS DEPLOYMENT SYSTEMS FOR SOLAR SAILS
Julius Karlapp, Germany

13:20-13:30 IAC-24/C2/IPB/88161
INTEGRATED AI-POWERED FAILURE PREDICTION SYSTEM FOR SELF-HEALING POLYMER MATERIALS FROM SIMULATION TO POST-SPACE DEPLOYMENT LEVEL: USING SYSTEM ENGINEERING FRAMEWORK
Palvi Garg, United States

SCREEN #15

12:50-13:00 IAC-24/C2/IPB/88329
ANALYSIS OF THE STRUCTURAL AND DYNAMIC BEHAVIOR OF A MODEL ROCKET TENSEGRITY FUSELAGE DURING THE ASCENT PHASE: INFLUENCE OF MOTOR FORCES ON ITS MECHANICAL RESPONSE
Abigail González-Alcázar, Costa Rica

13:00-13:10 IAC-24/C2/IPB/84758
PRELIMINARY MISSION ANALYSIS FOR THE 16U4SBSP MISSION CONCEPT
Wail Boumchita

13:10-13:20 IAC-24/C2/IPB/85653
INVESTIGATING THE INFLUENCE OF A MULTIPLE LAUNCH ROCKET SYSTEM DYNAMICS ON ROCKET RANGE
hossam eisa, Egypt

13:20-13:30 IAC-24/C2/IPB/91490
IMPACT OF ENVIRONMENTAL REGULATIONS ON AVAILABILITY OF SPACE-RELEVANT MATERIALS AND MANUFACTURING PROCESSES
Premysl Janik, The Netherlands

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12:50-13:00 IAC-24/C2/IPB/87028
THERMOGRAPHIC CHARACTERIZATION OF ISICOMP® COATING:
A COMPREHENSIVE ANALYSIS FOR AEROSPACE THERMAL
PROTECTION SYSTEMS.
Francesca Di Carolo, Italy

13:00-13:10 IAC-24/C2/IPB/86506
SUSTAINABLE EXTRATERRESTRIAL TOOL MAKING USING IN SITU
RESOURCING
Guadalupe Espinoza Gastelum, United States

13:10-13:20 IAC-24/C2/IPB/82583
EVALUATING THE FEASIBILITY OF USING A VARIABLE-LENGTH
POLYMER SUBORBITAL ULTRA-LIGHT LAUNCH VEHICLE
Aleksandr Golubek, Ukraine

13:20-13:30 IAC-24/C2/IPB/89471
PRELIMINARY DESIGN AND TESTING OF A NON-MECHANICAL
COVER FOR SPACE TELESCOPES: CRYSTALS
Mateo Loshi

SCREEN #17

12:50-13:00 IAC-24/C2/IPB/84013
INVESTIGATION AND PARAMETRIC OPTIMIZATION OF LASER
SURFACE TEXTURING FOR IMPROVED MICROPARTICLES NON-
STICKING CAPACITY
Guido Saccone, Italy

13:00-13:10 IAC-24/C2/IPB/85673
NOVEL DAMPING MODES USING BIO-INSPIRED STRATEGIES
Ranajay Ghosh, United States

13:20-13:30 IAC-24/C2/IPB/82463
CALCULATION METHOD AND EXPERIMENT VERIFICATION OF
PRELOAD OF CLAMP BAND DEVICE CONSIDERING TEMPERATURE
INFLUENCE
KANG Shipeng, China

SCREEN #18

12:50-13:00 IAC-24/C2/IPB/86423
IN HOUSE DESIGN AND ANALYSIS OF A 6U CUBESAT STRUCTURAL
FRAME
Abdulrahman Sulaiman, United Arab Emirates

13:00-13:10 IAC-24/C2/IPB/86387
DYNAMIC ANALYSIS OF FINITE-BOUNDARY MIURA-ORI
STRUCTURES
Seong Jae Choi, Korea, Republic of

13:20-13:30 IAC-24/C2/IPB/83164
AI-BASED PREDICTING LARGE DEPLOYABLE STRUCTURE
THERMAL DEFORMATION ON-ORBIT
Henghui Zhou, China

SCREEN #19

12:50-13:00 IAC-24/C4/IPB/84027
REACTIVE MOLECULAR DYNAMICS SIMULATION OF AMMONIUM
PERCHLORATE-ALUMINUM INTERACTIONS: EFFECTS OF
PASSIVATION AND INITIAL DECOMPOSITION MECHANISM
Rene Gonçalves

13:00-13:10 IAC-24/C4/IPB/85841
CATALYST-DRIVEN GREEN PROPELLANT DEVELOPMENT FOR
HYPERGOLIC SYSTEMS
Rene Gonçalves, Brazil

13:10-13:20 IAC-24/C4/IPB/84044
RMD SIMULATIONS APPLIED TO THE STUDY OF ENERGETIC
MATERIALS LIKE HMX SMOKELESS SOLID PROPELLANT: A CASE
STUDY OF HMX MOLECULAR VACANCIES.
José Rocco, Brazil

13:20-13:30 IAC-24/C4/IPB/82847
DYNAMICS MODELING AND SIMULATION ANALYSIS OF
REUSABLE HIGH-PRESSURE SUPPLEMENTARY COMBUSTION
LIQUID OXYGEN KEROSENE VARIABLE THRUST ROCKET ENGINE:
PART I - SINGLE POINT OPERATING CONDITION ANALYSIS
liu yuwei, China

SCREEN #20

12:50-13:00 IAC-24/C4/IPB/89116
HEMPT – ELECTRIC PROPULSION FOR LEO/MEO
CONSTELLATIONS
Angelo Genovese

13:00-13:10 IAC-24/C4/IPB/81033
PRELIMINARY STUDY ON AN ELECTROLYSIS-BASED SATELLITE
MICROPROPULSOR FOR A 12U CUBESAT
Nicolás de Jong, Spain

13:10-13:20 IAC-24/C4/IPB/91303
THERMAL RESPONSIVE PROPELLANT FORMULATIONS FOR
VARIABLE THRUST CONTROL FOR WINGED SPACE ROCKET
Diana Aljbour, Jordan

13:20-13:30 IAC-24/C4/IPB/91349
HYBRID PROPULSION SYSTEM FOR SPACEPLANES: OPTIMIZING
EFFICIENCY AND PERFORMANCE
Diana Aljbour, Jordan

SCREEN #21

12:50-13:00 IAC-24/C4/IPB/90359
ADVANCEMENTS IN THE DEVELOPMENT OF THE SUBSYSTEMS
FOR A STUDENT-DEVELOPED H2O2/ABS HYBRID PROPELLANT
ROCKET ENGINE
Giuseppe Oliva, France

13:00-13:10 IAC-24/C4/IPB/86797
STARGATE: AN UNDERGRADUATE EXPERIMENTAL ELECTRIC
PROPULSION STUDENT RESEARCH PROJECT
Claude Blue, United States

13:10-13:20 IAC-24/C4/IPB/84195
EXPERIMENTAL INVESTIGATION OF COMBUSTION INSTABILITY
INSIDE LAB-SCALE HYBRID ROCKET MOTOR WITH SWIRL
INJECTOR
ANWER HASHISH, Egypt

13:20-13:30 IAC-24/C4/IPB/88495
MOLTEN SALT REACTOR CONCEPTS FOR ADVANCED NUCLEAR
ELECTRIC PROPULSION (NEP) SYSTEMS
Pablo Rubiolo, France

SCREEN #22

12:50-13:00 IAC-24/C4/IPB/90200
DURABLE OXIDE CATALYSTS FREE OF NOBLE METALS FOR
HYDROGEN PEROXIDE THRUSTERS
Frederic Monteverde, Italy

13:00-13:10 IAC-24/C4/IPB/85757
OPTIMIZING LAUNCH SYSTEMS: PROPULSION AND STRUCTURAL
INNOVATIONS FOR ENHANCED EFFICIENCY IN ADVANCED
VEHICLES
Mohd.Amaan Mukadam, India

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APPLICATION OF MICRO ELECTRIC PROPULSION SYSTEM BASED ON ADDITIVE MANUFACTURING TECHNOLOGY ON MICRO SATELLITES
Shen Yan

13:20-13:30 IAC-24/C4/IPB/86631
EXPERIMENTAL INVESTIGATIONS INTO THE LOW TOXICITY HYPERGOLIC IONIC LIQUID-ETHANOL FUEL AND HYDROGEN PEROXIDE OXIDIZER
Vikas Bhosale

SCREEN #23

12:50-13:00 IAC-24/C4/IPB/88178
DESIGN OF AN ADDITIVELY MANUFACTURED BI-PROPELLANT THRUSTER FOR IN-ORBIT SATELLITE OPERATIONS
Davide Zuin

13:00-13:10 IAC-24/C4/IPB/91745
AEROSPIKE NOZZLE DESIGN WITH PASSIVE COOLING SYSTEM FOR IMPROVED DURABILITY AND EFFICIENCY AT ROCKET ENGINES.
Monica Sofia Mojica Páramo

13:10-13:20 IAC-24/C4/IPB/91861
CHAAC : HARNESSING MACHINE LEARNING FOR INTELLIGENT COMBUSTION CONTROL AND SUSTAINABLE PROPELLANTS IN LIQUID PROPELLANT ROCKETRY
Angel Vázquez

13:20-13:30 IAC-24/C4/IPB/89560
INVESTIGATION OF HYPERGOLIC IGNITION OF GREEN KEROSENE-BASED FUELS WITH HTP
Luca Caffiero, Italy

SCREEN #24

12:50-13:00 IAC-24/C4/IPB/86895
SUSTAINABLE SPACECRAFT PROPULSION: A 1N THRUST-LEVEL BI-PROPELLANT THRUSTER UTILIZING NITROUS OXIDE
Varun Reddy Nandyala

13:00-13:10 IAC-24/C4/IPB/85679
DEVELOPMENT OF AN AIR-BREATHING ELECTROSTATIC THRUSTER
Omar ElSherbiny, Germany

13:10-13:20 IAC-24/C4/IPB/91318
PACE HYBRID PROPULSION: A COMBINATION OF ELECTRIC AND THERMONUCLEAR PROPULSION TO OPTIMIZE SATELLITES
Osmar Naim Corona Zamudio, Mexico

13:20-13:30 IAC-24/C4/IPB/88099
RESEARCH ON THE PERFORMANCE OF THE MODIFIED PARAFFIN-WAX-BASED FUEL GRAINS IN THE USE OF STUDENT RESEARCHED AND DEVELOPED (SRAD) HYBRID ROCKET MOTOR
Małgorzata Majda, Poland

SCREEN #25

12:50-13:00 IAC-24/C4/IPB/86736
NUMERICAL MODELLING APPROACH FOR THE DEVELOPMENT OF AN ORBITAL-SCALE HYBRID PROPULSION ENGINE
Raphaël Aubry, France

13:00-13:10 IAC-24/C4/IPB/88322
FULL ROTORDYNAMICS ANALYSIS OF A TURBOPUMP ROTOR SYSTEM
Shayman-Reza Labadlia, Canada

13:10-13:20 IAC-24/C4/IPB/82364
DEVELOPMENT AND TESTING OF AN ELECTRICALLY-DRIVEN CENTRIFUGAL PRESSURIZATION SYSTEM FOR HYBRID ROCKETS IN ROCKET PROPULSION
Zelalem Bogale, Ethiopia

13:20-13:30 IAC-24/C4/IPB/82973
THE FEATURES OF LVEEXISTING PRESSURIZATION SYSTEMS OF PROPELLANT TANKS AND PROSPECTS OF THEIR DEVELOPMENT
Vadym Khomiak, Ukraine

SCREEN #26

12:50-13:00 IAC-24/C4/IPB/91863
PRELIMINARY DESIGN FOR AIR-BREATHING GRIDDED ION THRUSTER
Francesco Battista

13:00-13:10 IAC-24/C4/IPB/88037
REVIEW OF NUCLEAR ELECTRIC PROPULSION FOR INTERPLANETARY MISSIONS
Monica Salunkhe, United States

13:10-13:20 IAC-24/C4/IPB/81616
CHARACTERIZATION OF ENGINE COOLDOWN FOR A CENTRIFUGAL NUCLEAR THERMAL ROCKET
Mitchell Schroll, United States

13:20-13:30 IAC-24/C4/IPB/88594
HYBRID ROCKET SIMULATION USING CEQUEL FOR THERMOCHEMISTRY CALCULATIONS
Paige Berg, United States

SCREEN #27

12:50-13:00 IAC-24/C4/IPB/86908
ALTERNATIVE THRUST-BASED ALGORITHM FOR PERFORMANCE ANALYSIS OF SWIRLED HYBRID ROCKET ENGINES
Valerio Santolini, Italy

13:00-13:10 IAC-24/C4/IPB/84620
REGENERATIVE AND LIQUID FILM COOLING: DEVELOPMENT OF A UNIFIED THERMAL CONTROL STRATEGY IN LIQUID ROCKET ENGINES
Federico Giambelli, Italy

13:10-13:20 IAC-24/C4/IPB/91207
DESIGN, DEVELOPMENT AND TESTING OF A FIVE-THRUSTER MULTIDIRECTIONAL RESISTOJET PROPULSION SYSTEM FOR CUBSATS APPLICATIONS
Djamal DARFILAL, United Arab Emirates

13:20-13:30 IAC-24/C4/IPB/91357
CHARACTERIZATION AND TESTING OF A 1N GREEN MONOPROPELLANT MICRO-THRUSTER PRODUCED USING ADDITIVE MANUFACTURING TECHNIQUE
Djamal DARFILAL, United Arab Emirates

SCREEN #28

12:50-13:00 IAC-24/C4/IPB/84628
POTENTIAL OF RADIAL TURBINES IN LIQUID ROCKET ENGINES: A COMPARATIVE STUDY WITH CLASSICAL AXIAL TURBINES
Karthikumar Sambasivam, Italy

13:00-13:10 IAC-24/C4/IPB/90263
HIGHLY THROTTLEABLE PROPULSION FOR FROG-H: A GREEN TECHNOLOGICAL LEAP
Błażej Marciniak

Wednesday 16 October 2024

13:10-13:20 IAC-24/C4/IPB/91362

MAXIMIZING REUSABILITY IN PROPULSION SYSTEM TESTING: A MODULAR DATA ACQUISITION SYSTEM USING NATIONAL INSTRUMENTS PXI HARDWARE AND LABVIEW
abderrahim Nabi, United Arab Emirates

13:20-13:30 IAC-24/C4/IPB/84466

INNOVATIONS IN NUCLEAR AND PROPELLANTLESS PROPULSION TECHNOLOGIES
Ali Jafarov, Azerbaijan

SCREEN #29

12:50-13:00 IAC-24/E1/IPB/86355

UNIQUE APPROACHES IN SPACE LEGAL EDUCATION
Lauren Bydalek, United States

13:00-13:10 IAC-24/E1/IPB/91580

MISSION MARIJN: A CASE STUDY ON IMPROVING UNDERGRADUATE AEROSPACE ENGINEERING EDUCATION
Ines Uriol Balbin

13:10-13:20 IAC-24/E1/IPB/87840

DEVELOPMENT OF EDUCATION AND SPACE INDUSTRY INITIATIVES IN A DEVELOPING COUNTRY WITH THE GUATEMALAN ASSOCIATION OF ENGINEERING AND SPACE SCIENCES
Marcos López

13:20-13:30 IAC-24/E1/IPB/86093

DECOLONIAL SPECULATIONS ON SPACE EXPLORATION
Martina Zheng, United Kingdom

SCREEN #30

12:50-13:00 IAC-24/E1/IPB/81606

BRIDGING THE GAP: INVESTIGATING THE FACTORS AFFECTING YOUNG SCIENTISTS' ENGAGEMENT IN SPACE COMMUNITY ORGANIZATIONS
Bram de Winter, United Kingdom

13:20-13:30 IAC-24/E1/IPB/90435

PALE BLUE DOT: AN INTERDISCIPLINARY EDUCATIONAL BOARD GAME ON SPACE FOR SUSTAINABILITY
Martine Joy Irog

SCREEN #31

12:50-13:00 IAC-24/E1/IPB/81893

THE UNCOMMON CONVERSATION: A GRASSROOTS APPROACH TO DECOLONIAL PRACTICES IN SPACE
Harriet Hurley, Australia

13:10-13:20 IAC-24/E1/IPB/85770

SUSTAINABILITY OF SPACE EDUCATION AND OUTREACH EFFORTS: A CASE STUDY OF BAHRAIN'S NATIONAL SPACE SCIENCE AGENCY (NSSA)
Amal Albinali, Bahrain

13:20-13:30 IAC-24/E1/IPB/91454

FROM INSPIRATION TO ORBIT: SPACE PIONEERS' ROLE IN CRAFTING TOMORROW'S SPACE GENERATIONS
Tommaso Tonina, United States

SCREEN #32

12:50-13:00 IAC-24/E1/IPB/88859

SPACE GENERATION ADVANCES IN LATIN AMERICA REGION: MEXICO FIRST MEETING IN COLLABORATION WITH SUDAMERICAN PARTNERS
Cristina Pérez Ramos, Mexico

13:00-13:10 IAC-24/E1/IPB/90433

TAILORING OF ECSS STANDARDS FOR STUDENT SPACE PROJECTS
Jorge Galvan Lobo, Belgium

SCREEN #33

12:50-13:00 IAC-24/E1/IPB/88272

ROBOTICS AS AN INITIATION MECHANISM IN THE KNOWLEDGE OF SPACE ACTIVITY IN VENEZUELA
Marlen Flores, Venezuela

13:00-13:10 IAC-24/E1/IPB/84660

COMBINING AI AND SATELLITE DATA IN SPACE EDUCATION.
Marcin Giza, Poland

13:10-13:20 IAC-24/E1/IPB/83581

ROSPIN SCHOOL: SPACE ENGAGEMENT BEYOND THE CLASSROOM IN ROMANIA
Adrian Dumitrescu, Romania

13:20-13:30 IAC-24/E1/IPB/82198

CREATIVE SPACE: A COMPUTATIONAL SPACE TO LET SPATIAL CREATIVITY FLY FROM COSTA RICA
Stephanie María Leitón Ramírez, Costa Rica

SCREEN #34

12:50-13:00 IAC-24/E1/IPB/82396

LANGUAGE MODELS IN SPACE DIPLOMACY EDUCATION: A CASE STUDY OF A MULTILINGUAL LLM PROMPT LIBRARY
Mykyta Kliapets, Belgium

13:00-13:10 IAC-24/E1/IPB/87514

SPACESUITE: BRIDGING THE GAP BETWEEN THE SUPPLY AND DEMAND OF SKILLS IN THE DOWNSTREAM SPACE SECTOR
Zaklin Butinar, France

13:10-13:20 IAC-24/E1/IPB/82228

EMPOWERING MARGINALIZED REGIONS: NASO'S INITIATIVE IN DEMOCRATIZING SPACE EDUCATION AND ADDRESSING LOCAL CHALLENGES IN NEPAL
Shahadev Rai, Nepal

13:20-13:30 IAC-24/E1/IPB/89808

EDUCATIONAL INCUBATORS FOR YOUNG SPACE TECHNOLOGY ENTHUSIASTS
Maciej Mysliwiec, Poland

SCREEN #35

12:50-13:00 IAC-24/E1/IPB/84797

A FRAMEWORK FOR SPACE EDUCATION INTEGRATING SCIENCE AND ENGINEERING THROUGH THE DEVELOPMENT OF 2U CUBESAT
Kentaro Kitamura, Japan

13:00-13:10 IAC-24/E1/IPB/89844

SPACE CARAVAN: AN EXPERIENCE IN AEROSPACE SCIENTIFIC DISSEMINATION IN THE BRAZILIAN NORTHEASTERN REGION
José Henrique Fernandez, Brazil

Wednesday 16 October 2024

13:10-13:20 IAC-24/E1/IPB/88948
THE BRICS UNIVERSE EXHIBITION - A FUSION OF SPACE AND ART IN UNESCO'S CREATIVE CITIES
Subhrajit Barua, Russian Federation

13:20-13:30 IAC-24/E1/IPB/82203
EMPOWERING THE NEXT GENERATION IN SPACE: SGAC'S MENTORING COMMITTEE ADOPTS A GLOBAL APPROACH TO SPACE EDUCATION AND OUTREACH
Subhrajit Barua, Russian Federation

SCREEN #36

12:50-13:00 IAC-24/E1/IPB/91142
THE ARTRONAUT MODEL: THE INNOVATIVE WAY OF COMMUNICATING SPACE THROUGH ART
Alev Sönmez, Germany

13:00-13:10 IAC-24/E1/IPB/91881
CUBESATS IN PERU: EMPOWERING PERU'S FUTURE THROUGH SPACE EDUCATION
Juan Salvador Palacios Bett

13:20-13:30 IAC-24/E1/IPB/89521
MAPPING AND ANALYSIS OF THE ITALIAN INDUSTRIAL AND OUTREACH SPACE ECOSYSTEM, WITH A STUDY OF THEIR SOCIAL IMPACTS.
Stefano Piccin, Italy

SCREEN #37

12:50-13:00 IAC-24/E1/IPB/89621
BEYOND BOUNDARIES: PIONEERING THE FUTURE OF EDUCATION WITH THE ENDOGENOUSLY DEVELOPED, BEYONDER'S SPACE KIT
Subhrajit Barua

13:20-13:30 IAC-24/E1/IPB/89725
THE VALORIZATION OF LOCAL CULTURAL ELEMENTS THROUGH ITINERANT AEROSPACE SCIENTIFIC DISSEMINATION: SPACE IS FOR EVERYONE
Anderson Guimarães Guedes, Brazil

SCREEN #38

12:50-13:00 IAC-24/E1/IPB/86295
THE CREATIVE ECONOMY AND ITS IMPACT ON THE SPACE WORKFORCE
Christopher Richardson, United States

13:10-13:20 IAC-24/E1/IPB/82272
FIDÉSPACIAL - FIRST STUDENT AEROSPACE GROUP FROM A PRIVATE UNIVERSITY IN COSTA RICA
Noemy Pérez Galán, Costa Rica

SCREEN #39

12:50-13:00 IAC-24/E1/IPB/91187
SPACE COURT FOUNDATIONS UNIQUE SPACE LAW AND POLICY INTERNSHIP PROGRAMME
Tamara Blagojevic, Serbia

SCREEN #40

12:50-13:00 IAC-24/E1/IPB/82405
REIMAGINING DECOLONIZED FUTURES IN SPACE THROUGH SPECULATIVE DESIGN
Khushi Shah, India

13:00-13:10 IAC-24/E1/IPB/91288
SCIENTIFIC COOPERATION AND EXPLORATION WITH THE UNISTELLAR NETWORK OF CITIZEN ASTRONOMERS
Thomas Esposito, United States

SCREEN #41

12:50-13:00 IAC-24/E1/IPB/82335
LEVERAGING SPACE AS AN INNOVATION FACTOR FOR STEAM EDUCATION IN EARLY AGES: REDESIGNING LEARNING MODULES IN PRIMARY SCHOOL LEVELS IN COSTA RICA BY INCLUDING SPACE APPLICATIONS THROUGH THEIR LINK WITH THE SUSTAINABLE DEVELOPMENT GOALS.
Rebeca Jiménez, Costa Rica

13:20-13:30 IAC-24/E1/IPB/85586
A COMPARATIVE ANALYSIS OF THREE THESES IN SPACE ARCHITECTURE EDUCATION
Federica Joe Gardella, Italy

SCREEN #42

12:50-13:00 IAC-24/E1/IPB/83610
HOW AND WHY PEOPLE JOIN THE UK SPACE SECTOR: RESULTS OF THE 2024 SPACE CENSUS
Heidi Budd Thiemann, United Kingdom

13:00-13:10 IAC-24/E1/IPB/83484
INTEGRATING SPACE EDUCATION INTO STEAM
Gunel Valiyeva, Azerbaijan

13:10-13:20 IAC-24/E1/IPB/84103
THE ROLE OF FIRST DEGREES IN ENCOURAGING STUDENTS TO ENTER THE SPACE SECTOR: ANALYSIS BY THE ASTRAIOS PROJECT
Heidi Budd Thiemann, United Kingdom

13:20-13:30 IAC-24/E1/IPB/86958
FOSTERING CREATIVE PROBLEM SOLVING AND SUSTAINABILITY THROUGH AN INNOVATIVE EDUCATIONAL NEWSPACE EVENT
Luca BISOGNIN, France

SCREEN #43

12:50-13:00 IAC-24/E2/IPB/84122
TRACK YOUR SATELLITE BEFORE IT IS TOO LATE: A LASER RANGING ENABLED STUDENT CUBESAT PROJECT
Luca Lion, Italy

13:00-13:10 IAC-24/E2/IPB/87826
BEYOND ROBOTICS' TALOS 1 SCIENCE TEAM: BEST PERFORMANCE IN SCIENCE TASK IN ERC 2023
Dionisis Tsigalidas, Greece

13:10-13:20 IAC-24/E2/IPB/87774
FREE FLIGHT RE-ENTRY EXPERIMENT ON TRANSPIRATION COOLING HEAT SHIELD - TRACE ON REXUS 31
Nicolas Heyn

13:20-13:30 IAC-24/E2/IPB/91689
DEVELOPMENT OF A CRYOGENIC PROPELLANT TURBOPUMP FOR THE STARSAILOR ROCKET
Anh-Khoa Chau-Vo

SCREEN #44

12:50-13:00 IAC-24/E2/IPB/86861
DEVELOPMENT FRAMEWORK FOR AN AUTOCODED ADCS SOFTWARE IN A CUBESAT SCENARIO
Umberto Mondini, Italy

Wednesday 16 October 2024

13:00-13:10 IAC-24/E2/IPB/87379
THE STUDENT PROJECT FERRAS - A FERROFLUID EXPERIMENT ON A REXUS SOUNDING ROCKET
Christopher Vogt, Germany

13:10-13:20 IAC-24/E2/IPB/88744
'BACK TO THE CAVE' - DESIGNING SYMBIOTICALLY OPERATING HABITATION MODULES IN MARTIAN CAVES
Magda Borovina, Croatia

13:20-13:30 IAC-24/E2/IPB/84885
STRUCTURAL DESIGN, MODELLING AND TESTING OF A 2U CUBESAT THERMAL/VISUAL IMAGING PAYLOAD.
David Reid

SCREEN #45

12:50-13:00 IAC-24/E3/IPB/81536
WHAT LED TO THE CREATION OF KOREA AEROSPACE ADMINISTRATION?
Nammi Choe, Korea, Republic of

13:00-13:10 IAC-24/E3/IPB/87912
FREEDOM OF ACCESS TO ALL AREAS OF CELESTIAL BODIES VIS A VIS SPACE RESOURCE ACTIVITIES: AN EXAMINATION OF POSSIBLE CONFLICTS IN INTERNATIONAL SPACE LAW
Marie-Louise Hohenbühel, Italy

13:20-13:30 IAC-24/E3/IPB/88916
SPACE CADASTRE: A NEW PARADIGM FOR THE FUTURE OF SPACE
Tahsin Yomralioglu, Türkiye

SCREEN #46

12:50-13:00 IAC-24/E3/IPB/87233
PORTUGAL AND SPACE: THE NEW REGULATION ON SPACE ACTIVITY AND ITS CHALLENGES
Paula Silveira, Portugal

13:00-13:10 IAC-24/E3/IPB/86877
THE NEW SPACE RACE IN THE WORLD
Zeka Aliyev

13:20-13:30 IAC-24/E3/IPB/85247
THE IMPORTANCE OF MONITORING & EVALUATION OF TODAY'S SPACE ACTIVITIES FOR TOMORROW'S SPACE INVESTMENTS
Luca Niccolai, United Kingdom

SCREEN #47

12:50-13:00 IAC-24/E3/IPB/84109
ECOLOGICAL ECONOMIC EFFECTS OF SPACE ACTIVITIES.
Ulviyya Najafli, Azerbaijan

13:00-13:10 IAC-24/E3/IPB/91184
CREATIVE INDUSTRIES SPACE POLICY
Aoife van Linden Tol

13:20-13:30 IAC-24/E3/IPB/85495
COMMERCIAL HUMAN SPACE FLIGHT DEVELOPMENT AS A NEW MODEL FOR FIXED PRICE RESEARCH AND DEVELOPMENT CONTRACTING
K. Lee Pagel

SCREEN #48

12:50-13:00 IAC-24/E3/IPB/85182
POLICIES AND INTERNATIONAL COOPERATION IN SUPPORT TO THE ASEAN COMMUNITY FOR THE USE OF SPACE TECHNOLOGIES TO MANAGE ENVIRONMENTAL FRAGILITIES.
Chiara Limardi, Italy

13:10-13:20 IAC-24/E3/IPB/82968
INSTITUTIONALIZATION PROCESS OF SPACE AGENCIES: COMPARATIVE ANALYSIS
Talut Huseynov, Azerbaijan

13:20-13:30 IAC-24/E3/IPB/81988
BALANCING REGULATION, SUSTAINABILITY, AND GROWTH IN THE SPACE INDUSTRY: INSIGHTS FROM INDUSTRY INTERVIEWS
Ioana Petrescu, Romania

SCREEN #49

12:50-13:00 IAC-24/E4/IPB/81048
NEIL ARMSTRONG: FROM LUNAR LANDING TO MASTER OF SCIENCE DEGREE
Mike Gruntman, United States

13:00-13:10 IAC-24/E4/IPB/85946
MIGUEL GUERRERO, THE FINAL GUARDIAN OF THE CONDOR
Pablo de León, United States

SCREEN #50

12:50-13:00 IAC-24/E4/IPB/83540
THE EVOLUTION OF COSMIC FOODS: AN ASTRONOMICAL INQUIRY
Həlibə Sadıqova, Azerbaijan

13:10-13:20 IAC-24/E4/IPB/90876
ITALY'S UNFORGETTABLE FOOTPRINTS IN SPACE
Nubar Seyidova, Azerbaijan

13:20-13:30 IAC-24/E4/IPB/89884
PEDRO PAULET: WAS A PERUVIAN ENGINEER THE PRECURSOR OF THE SPACE AGE?
Natalia Indira Vargas-Cuentas, Peru

SCREEN #51

13:20-13:30 IAC-24/E4/IPB/90326
RESEARCH ON THE DEVELOPMENT PROCESS, PRACTICAL EXPERIENCES AND PROSPECTS OF CHINA'S AEROSPACE INDUSTRY
Xuemei Ma, China

SCREEN #52

12:50-13:00 IAC-24/E5/IPB/84050
SUSTAINABLE LIFE BEYOND THE EARTH. HOW TO ENHANCE HABITAT COMFORT FOR SPACE TRAVELLERS.
Elia Sindoni, Italy

Wednesday 16 October 2024

13:10-13:20 IAC-24/E5/IPB/83107
PYRODUCT: A PARAMETRIC TOOL FOR GENERATING REALISTIC 3D MODELS OF LUNAR AND MARTIAN LAVA TUBES
Francesco Axel Pio Romio, Italy

SCREEN #53

12:50-13:00 IAC-24/E5/IPB/84299
FROM CONFINEMENT TO COMFORT: THE ROLE OF INTERPERSONAL DISTANCE IN DESIGNING SPACE HABITATS
Marta Rossi

13:00-13:10 IAC-24/E5/IPB/89886
INTEGRATION OF SATELLITE, DRONE, AND IN-SITU DATA FOR PRECISION AGRICULTURE APPLICATIONS
Avid Roman-Gonzalez, Peru

13:10-13:20 IAC-24/E5/IPB/87528
GUIAPP: UTILIZING GLOBAL NAVIGATION SATELLITE SYSTEMS IN THE TOURISM INDUSTRY
Avid Roman-Gonzalez, Peru

13:20-13:30 IAC-24/E5/IPB/87928
CONCEPT OF A LABORATORY FOR RESEARCHING PRODUCTION UNDER MARS-LIKE CONDITIONS
Florian Stechmann, Germany

SCREEN #54

12:50-13:00 IAC-24/E5/IPB/91330
HUMAN AGENCY IN THE COSMIC SYMPHONY: EXPLORING THE SIGNIFICANCE OF INDIVIDUALS IN THE GRAND SCHEME OF THE BUTTERFLY EFFECT
Zygimantas Vainauskas, United Kingdom

13:00-13:10 IAC-24/E5/IPB/88252
HOME ON THE MOON: INTEGRATING COMFORT AND INNOVATION IN LUNAR HABITAT DESIGN
Adela Moss, Poland

13:20-13:30 IAC-24/E5/IPB/87505
PSYCHOLOGY OF ISOLATION AND ARCHITECTURE OF LUNAR HABITATS: LESSONS FROM SPACE ANALOGS, ANTARCTIC MISSIONS, AND SECURE FACILITIES DESIGN
Meriem Allani, Australia

SCREEN #55

12:50-13:00 IAC-24/E5/IPB/91000
REFORESTING FROM AIR: SEEDS GERMINATION AND WATER ROCKET PROTOTYPE DEVELOPMENT AS PART OF A SOLUTION TO FOREST FIRES IN GUANACASTE CONSERVATION AREA IN COSTA RICA
Stephanie María Leitón Ramírez, Costa Rica

13:00-13:10 IAC-24/E5/IPB/88769
ACYCLIC FRAMEWORK FOR IDENTIFYING CAUSAL RELATIONSHIPS IN HABITAT DESIGN
Shu-Yu Lin, United States

13:10-13:20 IAC-24/E5/IPB/81072
THE SYSTEM THINKING GAMES FOR THE UNDERSTANDING THE SPACE ACTIVITY MISCONCEPTIONS
Anna Hurova, Ukraine

13:20-13:30 IAC-24/E5/IPB/84847
LUNAR LAYERED BASE:
AN EXPLORATION OF ARCHITECTURAL DIVERSITY WITH A LUNAR LAVA TUBE.
James Robinson, United Kingdom

SCREEN #56

12:50-13:00 IAC-24/E5/IPB/89667
DEVELOPMENT OF A MODEL OF A CONTROLLED ENVIRONMENT CROP PRODUCTION SYSTEM FOR OPTIMAL DISTRIBUTION DEFINITION IN DEEP SPACE MISSIONS AND ANALOG STATIONS
Oscar Ojeda, Colombia

13:00-13:10 IAC-24/E5/IPB/85108
REDEFINING HUMAN LUNAR HABITATION THROUGH HOPSHHELL VOLUME AND SOFT MEMBRANE STRUCTURES
Takashi Mizuguchi, Japan

SCREEN #57

12:50-13:00 IAC-24/E5/IPB/91047
LUNEX SPACEHOMES PROJECT

INNOVATIONS AND CHALLENGES IN LUNAR HABITAT DEVELOPMENT.
A SUSTAINABLE FUTURE ON THE MOON THROUGH THE USE OF ARTIFICIAL INTELLIGENCE (AI)
Ilaria Pia Fiore, Italy

13:00-13:10 IAC-24/E5/IPB/86000
BENEATH THE LUNAR SURFACE: A MULTI-TIERED ATMOSPHERIC PRESSURE HABITAT DRIVEN BY BIOREGENERATIVE LIFE SUPPORT, HABITABILITY, AND MODULARITY
Elizabeth Kluzak, United States

13:20-13:30 IAC-24/E5/IPB/89044
SUPAERO MDRS ANALOG MISSION : STUDENTS' FIRST STEP INTO SPACE
Marie DELAROCHE, France

SCREEN #58

12:50-13:00 IAC-24/E6/IPB/89853
A NEW PUBLIC-PRIVATE BRAZILIAN PROGRAM FOR SMALL SATELLITE LAUNCHER
Fabio Rofino, Brazil

13:00-13:10 IAC-24/E6/IPB/90308
EUROPEAN SPACE SME'S FINANCIAL VIABILITY
Simon Dekeyser

13:10-13:20 IAC-24/E6/IPB/89372
CHARTERING IN OUTER SPACE: A LEGAL ANALYSIS OF THE APPLICATION OF THE MARITIME CHARTERING REGIME IN SPACE ACTIVITIES
Maria Angeliki Gerasimou, Greece

13:20-13:30 IAC-24/E6/IPB/83556
POWER AND INCENTIVES IN NEWSPACE ENTREPRENEURSHIP: HARMONISING ECONOMIC AND POLITICAL REALITIES OF THE SPACE SECTOR
Scott Schneider, Australia

SCREEN #59

13:00-13:10 IAC-24/E6/IPB/90521
VIMANA AEROTECH AND THE DEVELOPMENT OF A TAIL-SITTER VTOL DRONE FOR RESEARCH AS WELL AS COMMERCIAL FACILITATION
Abhishek Kanodia

13:10-13:20 IAC-24/E6/IPB/82213
BUSINESS SOLUTIONS FOR SUSTAINABLE CLOTHING MANAGEMENT IN LONG-TERM SPACE MISSIONS
Omar Mohamed, Egypt

Wednesday 16 October 2024

13:20-13:30 IAC-24/E6/IPB/90935
BEYOND INCUBATION: SHAPING EUROPEAN SPACE AGENCY'S
SUPPORT FRAMEWORKS FOR SPACE VENTURES
Zuzanna Filipecka

SCREEN #60

12:50-13:00 IAC-24/E6/IPB/90480
UNPACKING CORPORATE SUSTAINABILITY LAW: ALIGNING
FINANCIAL AND NON-FINANCIAL DOUBLE MATERIALITY WITHIN
THE CSRD AND ESRs REGULATORY FRAMEWORKS FOR THE SPACE
INVESTMENTS
Jamila Mendoza, Norway

13:00-13:10 IAC-24/E6/IPB/87194
IMPACT AND IMPLICATIONS OF COVID-19 ON KOREA'S
AEROSPACE INDUSTRY
Chang Ho LIM, Korea, Republic of

13:10-13:20 IAC-24/E6/IPB/91470
SPACE ENTREPRENEURSHIP: A COMPREHENSIVE GUIDE TO
LAUNCHING A SPACE BUSINESS IN INDIA
Lokesh kumar G, India

13:20-13:30 IAC-24/E6/IPB/82648
TRAILBLAZER PROGRAM AS PPP MODEL FOR AUSTRALIA'S SPACE
INDUSTRY GROWTH
Jacqui Tyack, Australia

SCREEN #61

12:50-13:00 IAC-24/E6/IPB/90199
SANDBOXES AS AN INCENTIVE TOOL FOR ENTREPRENEURSHIP IN
THE SPACE SECTOR
Fernanda Lima, Brazil

13:00-13:10 IAC-24/E6/IPB/86158
INITIATIVES TO ENSURE LEGAL SECURITY IN SPACE
INVESTMENTS: THE ROLE OF THE GENERAL ATTORNEY OFFICE
(AGU)
Michele Cristina Silva Melo, Brazil

13:10-13:20 IAC-24/E6/IPB/87251
ENTREPRENEURSHIP IN THE SPACE SECTOR AND DEFORESTATION
MONITORING ACTIVITIES IN THE BRAZILIAN LEGAL AMAZON
LEILA MORAIS, Brazil

13:20-13:30 IAC-24/E6/IPB/88532
THE QUILOMBOLA CONFLICT AND THE ALCÂNTARA SPACE
CENTER (CEA): THE GENERAL ATTORNEY OFFICE (AGU)
MEDIATION EXPERIENCE IN RESOLVING THE CONFLICT AND
ITS IMPACTS ON THE DEVELOPMENT OF ACTIVITIES IN THE
BRAZILIAN SPACE SECTOR
LEILA MORAIS, Brazil

SCREEN #62

12:50-13:00 IAC-24/E6/IPB/84730
UNLOCKING THE VALUE OF SATELLITE SYSTEMS THROUGH
MODULARITY: A REFERENCE FRAMEWORK
Victoria Krivova

13:00-13:10 IAC-24/E6/IPB/88423
PREPARING FOR THE UNKNOWN: STRATEGIC RISK
MANAGEMENT IN SPACE AND DEFENCE OPERATIONS
Ozge Aydin, Canada

13:10-13:20 IAC-24/E6/IPB/83937
FOSTERING INNOVATION: EXPLORING THE SYNERGIES BETWEEN
SPACE STARTUPS AND UNIVERSITY INCUBATORS IN THE SPACE
ECONOMY
Claudio Loporcaro

13:20-13:30 IAC-24/E6/IPB/89188
THE EMERGENCE OF SPACE INNOVATION HUBS: A CASE STUDY
OF GRAND FORKS, USA.
Francisco Del Canto Viterale, United States

SCREEN #63

12:50-13:00 IAC-24/E6/IPB/83762
APPLYING THE INTERSECTIONAL ANTIRACISM TECHNOLOGY
FRAMEWORK TO AN EDUCATION OUTREACH PROGRAM IN
AEROSPACE
Yiyun Zhang

13:00-13:10 IAC-24/E6/IPB/88373
SPACE ENTREPRENEURSHIP IN THE NETHERLANDS: A
COMPREHENSIVE ANALYSIS OF PERSONAS, NEEDS, AND
ECOSYSTEM OPTIMIZATION THROUGH THE ONESPACEHUB
PROJECT
Ruth Euniki Vraka, The Netherlands

13:10-13:20 IAC-24/E6/IPB/85791
OPTIMIZING ORGANIZATIONAL STRUCTURE AND PROJECT
MANAGEMENT: A CASE STUDY OF AGH SPACE SYSTEMS
Łukasz Gliwiński, Poland

13:20-13:30 IAC-24/E6/IPB/82096
FRAMEWORK TO ENABLE NON-GOVERNMENT ENTITIES TO
PARTICIPATE IN THE SPACE SECTOR: INDIAN CASE STUDY
Mustafa Shahid, India

SCREEN #64

12:50-13:00 IAC-24/E6/IPB/88539
AGENDA 2030 : VOLODIA RING - A 1,000 PEOPLE SPACE-4-ALL
ARTIFICIAL PLANET TO HELP MOTHER EARTH
Guy Pignolet, France

13:00-13:10 IAC-24/E6/IPB/87672
DEEP-TECH SPACE-EARTH SYNERGIES FOR FUTURE EXPLORATION
AND TERRESTRIAL APPLICATIONS
Stella Tkatchova, Belgium

13:10-13:20 IAC-24/E6/IPB/86022
FUTURES THINKING: A MINDSET FOR DRIVING
ENTREPRENEURSHIP AND INNOVATION IN NEWSPACE
Kaori Becerril

13:20-13:30 IAC-24/E6/IPB/85727
THE IMPACT OF MACHINE LEARNING ON ORGANIZATIONAL
BEHAVIOR: A FRAMEWORK FOR SPACE AGENCIES
Muneera Almalki, Bahrain

SCREEN #65

12:50-13:00 IAC-24/E7/IPB/87268
IMPLEMENTATION OF THE OUTER SPACE TREATY THROUGH
BLOCKCHAIN-BASED SYSTEMS
Krisztina Tilinger, Hungary

13:00-13:10 IAC-24/E7/IPB/90622
EXPLORING THE ROLE OF PATENT POOLS IN FOSTERING
INNOVATION AND COLLABORATION IN THE EU SPACE SECTOR
Antonia Kardamaki

13:10-13:20 IAC-24/E7/IPB/90728
INTEGRATING INDIGENOUS OUTLOOK IN INTERNATIONAL SPACE
LAW:

A RELATIONAL APPROACH TO THE ENVIRONMENT
Giuliana Rotola, Italy

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BY SYMPOSIUM

Wednesday 16 October 2024

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12:50-13:00 IAC-24/E7/IPB/90320
INTERNATIONAL SPACE LAW AND THE RIGHT TO HEALTH IN SPACE
TELEMEDICINE APPLICATIONS FOR EARTH REMOTE AREAS
Antonio Pallotti, Italy

13:20-13:30 IAC-24/E7/IPB/84648
AI IN THE COSMOS: TOWARD AN ADAPTIVE LEGAL FRAMEWORK FOR SPACE GOVERNANCE
Yangzi Tao

SCREEN #67

12:50-13:00 IAC-24/E7/IPB/83973
LAW AMONG THE STARS: A COMPREHENSIVE REVIEW OF INTERNATIONAL SPACE STATION REGULATIONS
Naghiyeva Nazrin, Azerbaijan

13:00-13:10 IAC-24/E7/IPB/89581
QUESTIONING THE INTERNATIONAL LEGAL FRAMEWORK FOR A RESPONSIBLE AND SUSTAINABLE SPACE TOURISM ACTIVITY
Caroline Thro

13:10-13:20 IAC-24/E7/IPB/87656
THE RECOMMENDATIONS OF THE COPUOS LSC WG 5TRE ON REGISTERING SPACE OBJECTS FORMING PART OF A SATELLITE CONSTELLATION
Franziska Knur, Germany

13:20-13:30 IAC-24/E7/IPB/88362
ASSESSMENT OF THE DEFINITION OF SAFETY ZONES TO BE UTILIZED AS AN OPERATIONAL FRAMEWORK FOR LUNAR ENVIRONMENT.
Sanjal Gavande, United States

SCREEN #68

12:50-13:00 IAC-24/E7/IPB/81946
LIFE SCIENCE BEYOND EARTH: EXPLORING THE LEGAL LANDSCAPE IN OUTER SPACE EXPLORATION
Marie-Claire de Bruijn, Germany

13:00-13:10 IAC-24/E7/IPB/86261
FREEDOM AND RESTRICTIONS ON SCIENTIFIC INVESTIGATION OF SPACE RESOURCES UNDER THE PRINCIPLES OF INTERNATIONAL LAW
Joh NAGATA

13:10-13:20 IAC-24/E7/IPB/83084
SPACE SUSTAINABILITY AS A COMMON CONCERN
Maria Elena De Maestri, Italy

13:20-13:30 IAC-24/E7/IPB/82726
STATE PRACTICES REGARDING LIABILITY FOR DAMAGE CAUSED BY SPACE OBJECTS AND THEIR IMPACT ON INTERNATIONAL SPACE LAW
Merve ERDEM BURGER, Switzerland

SCREEN #69

12:50-13:00 IAC-24/E7/IPB/82295
ARE DISPUTE SETTLEMENT MECHANISMS READY TO DEAL WITH SPACE-RELATED DISPUTES?
Laura Denise Jaroslavsky Consoli, Switzerland

SCREEN #70

12:50-13:00 IAC-24/E7/IPB/80792
REMOVE BEFORE LAUNCH: COLLISIONS BETWEEN SPACE ACTIVITIES REGULATED UNDER THE OUTER SPACE TREATY AND THE ANTARCTIC TREATY SYSTEM.
Victoria Valdivia, Chile

13:00-13:10 IAC-24/E7/IPB/84184
THERE IS NO SPACE LAW WITHOUT SPACE SCIENCE
Ayten-Selin Dogan, United Kingdom

13:10-13:20 IAC-24/E7/IPB/81686
A COMPARATIVE STUDY OF PATENT INFRINGEMENT IN CYBERSPACE AND IN OUTER SPACE - BEYOND THE LIMITS OF TERRITORIAL JURISDICTION
Hisako Moriguchi, Japan

SCREEN #71

12:50-13:00 IAC-24/E7/IPB/88942
THE RISK OF REPLACING THE CONSENSUS PRINCIPLE IN SPACE WITH ALTERNATIVE RULE SETTING: A COMPARISON OF SPACE MINING WITH DEEP SEA MINING
Scott Scoular

13:00-13:10 IAC-24/E7/IPB/87347
ADDRESSING THE LEGAL GAP OF RESPONSIBILITY OF NON-STATE ACTORS FOR SPACE POLLUTION
Matthew Gillett

SCREEN #72

12:50-13:00 IAC-24/E7/IPB/87785
TAXATION OF INCOME RESULTING FROM SPACE RELATED ACTIVITIES: THE NEED FOR A CLEAR AND SUSTAINABLE TAX POLICY FOR THE SPACE INDUSTRY
Stefano Versino, Italy

SCREEN #73

12:50-13:00 IAC-24/E7/IPB/90698
SPACE GOVERNANCE FOR SUBORBITAL FLIGHTS: CHALLENGES AND OPPORTUNITIES FOR DEVELOPING NATIONS
Beauler Wozhele, Zimbabwe

SCREEN #74

13:20-13:30 IAC-24/E7/IPB/87686
RECONNAISSANCE OR SPY SATELLITES; LEGAL CHALLENGES AND IMPLICATIONS FOR INTERNATIONAL LAW
GEORGIOS CHATZICHARALAMPOUS

SCREEN #75

12:50-13:00 IAC-24/E9/IPB/87659
CYBER ATTACKS AGAINST SPACE ASSETS: THE RIGHT TO SELF-DEFENCE
Denitza Petrounova

13:00-13:10 IAC-24/E9/IPB/87903
NORMS OF RESPONSIBLE BEHAVIOUR IN OUTER SPACE AND THE LAW OF ARMED CONFLICT
Denitza Petrounova

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13:10-13:20 IAC-24/E9/IPB/80873

THE MITIGATION OF GLOBAL UNCERTAINTY THROUGH THE ESTABLISHMENT OF TRANSPARENCY AND CONFIDENCE-BUILDING MEASURES: A PROPOSAL FOR CROSS-INSPECTIONS OF GROUND SPACE FACILITIES TO PREVENT THE WEAPONIZATION OF OUTER SPACE ACTIVITIES.

Victoria Valdivia

13:20-13:30 IAC-24/E9/IPB/89472

ENSURING LONG-TERM SUSTAINABILITY OF OUTER SPACE ACTIVITIES DURING CHANDRAYAAN-3 MISSION

Bulbul Mukherjee, India

SCREEN #76

12:50-13:00 IAC-24/E9/IPB/87032

ITU CONTRIBUTIONS TO THE COLLECTIVE EFFORTS ON SPACE SUSTAINABILITY, FROM RESPONSIBLE USE OF SPECTRUM TO LOW EARTH ORBITS.

Jorge Ciccorossi, Switzerland

13:00-13:10 IAC-24/E9/IPB/85228

SECURING THE FINAL FRONTIER: MITIGATING CYBER SECURITY THREATS TO SPACE MISSIONS

Orkhan Jabbarzade, Azerbaijan

SCREEN #77

12:50-13:00 IAC-24/E9/IPB/85923

INCENTIVIZING ADOPTION OF Cislunar ORBITAL DEBRIS MITIGATION POLICIES VIA NORMS OF BEHAVIOUR

Arjun Chhabra, United States

13:00-13:10 IAC-24/E9/IPB/87250

TOWARDS A LEGAL FRAMEWORK FOR SPACE TRAFFIC MANAGEMENT: INTERNATIONAL AND REGIONAL INITIATIVES

Maria Vittoria Massarin, Italy

13:10-13:20 IAC-24/E9/IPB/88720

ESTABLISHING THE YOUTH'S POSITION ON RESPONSIBLE BEHAVIOUR IN OUTER SPACE

Clémence Poirier, Switzerland

13:20-13:30 IAC-24/E9/IPB/90556

AN OVERVIEW OF THE UK SPACE AGENCY'S SUSTAINABILITY ACTIVITIES

Elizabeth Cox, United Kingdom

SCREEN #78

12:50-13:00 IAC-24/E9/IPB/88162

IDENTIFICATION OF COMMUNICATION SPACECRAFTS AND VALIDATION OF THEIR ORBITAL PARAMETERS WITH RESPECT TO MASTER INTERNATIONAL FREQUENCY REGISTER OF ITU

Timur Kadyrov

13:00-13:10 IAC-24/E9/IPB/81744

CURRENT STATUS AND FUTURE PLANS FOR STM IN KOREA

Jong-Bum Kim, Korea, Republic of

13:10-13:20 IAC-24/E9/IPB/84931

SCRUTINIZING CYBERATTACKS IN THE FINAL FRONTIER: EVALUATING AUSTRALIA'S LEGAL AND POLICY READINESS IN SAFEGUARDING THE SPACE SECTOR

Vinicius Guedes Gonçalves de Oliveira

SCREEN #79

13:10-13:20 IAC-24/E9/IPB/84172

A TECHNICAL COMPARISON OF THE PUBLIC SSA SERVICES IN THE UNITED STATES AND THE EUROPEAN UNION

Mariel Borowitz, United States

SCREEN #81

12:50-13:00 IAC-24/E10/IPB/85974

DEFINING ELIGIBLE INITIATIVES FOR A PLANETARY DEFENSE STRATEGY IN BRAZIL BY APPLYING THE STRATEGIC CHOICE APPROACH (SCA) OF SOFT OPERATIONAL RESEARCH

ANA LUCIA PEGETTI, Brazil

13:00-13:10 IAC-24/E10/IPB/87863

APPLYING SYSTEMATIC REVIEW AS A TOOL FOR THE ANALYSIS AND CLASSIFICATION OF PAPERS PUBLISHED IN JOURNALS AND CONFERENCES RELATED TO PLANETARY DEFENSE

ANA LUCIA PEGETTI, Brazil

13:20-13:30 IAC-24/E10/IPB/82703

FUTURE PLANETARY DEFENSE FROM THE MOON

Claudio Maccone, Italy

SCREEN #82

12:50-13:00 IAC-24/E10/IPB/83987

STUDY OF SIZE SCALE EFFECT IN THE ASTEROID DEFLECTION DUE TO HYPERVELOCITY IMPACT

Taishi Satou, Japan

13:00-13:10 IAC-24/E10/IPB/83770

EXPLORING THE IMPACT OF NON-CENTRAL COLLISIONS ON THE ASTEROID DEFLECTION MISSION

Lee Kin Thong, China

SCREEN #83

12:50-13:00 IAC-24/E10/IPB/88855

SMALLSAT-BASED NEAR-EARTH OBJECT (NEO) DETECTION USING TRANSFORMER AI MODEL FOR IMPROVED PLANETARY DEFENSE

Nishita Sanghvi, Germany

13:00-13:10 IAC-24/E10/IPB/84546

NEAR-EARTH ASTEROID CAPTURE MISSION DESIGN METHOD BASED ON THE ORBITAL DYNAMICS IN THE PLANAR-CIRCULAR RESTRICTED THREE-BODY PROBLEM

Kohei Yamaguchi, Japan

13:20-13:30 IAC-24/E10/IPB/89160

ANALYSIS OF PLANETARY DEFENSE TECHNIQUES AND THE ROLE OF SPACE TECHNOLOGY IN THE FUTURE EXERCISES

Rania Toukebri, Germany

SCREEN #84

13:00-13:10 IAC-24/E10/IPB/90554

EVALUATING THE LEGALITY OF NUCLEAR EXPLOSIVE DEVICES (NEDS) FOR PLANETARY

DEFENSE

DAFNI POLITIKOU, Greece

Wednesday 16 October 2024

SCREEN #85

12:50-13:00 IAC-24/E11/IPB/88218
ANALYSIS OF INFLUENTIAL FACTORS TO INCREASE SPACE CAREERS IN EMERGING SPACE COUNTRIES
Hasel Ramírez Cortés, Mexico

13:00-13:10 IAC-24/E11/IPB/86990
FROM BALKANS TO BEYOND: ENDUROSAT'S JOURNEY AND LESSONS FOR EMERGING SPACE INDUSTRIES
Anja Nakarada Pecujlic

13:10-13:20 IAC-24/E11/IPB/82937
COLOMBIAN EDUCATIONAL AND RESEARCH DEVELOPMENT: INSIGHTS FROM THE FIRST AEROSPACE ENGINEERING BACHELOR
David Andres Diaz Alvarez, Colombia

13:20-13:30 IAC-24/E11/IPB/81273
INTRODUCING THE INTERPLANETARY CHAMBER OF COMMERCE
Tony LaRosa, United States

SCREEN #86

12:50-13:00 IAC-24/E11/IPB/81678
A PROPOSAL FOR A STATE SPACE SECRETARIAT: WHY DOES IT MAKE SENSE FOR THE STATE OF SÃO PAULO?
Bruno Nunes Vaz, Brazil

13:00-13:10 IAC-24/E11/IPB/80796
A FRAMEWORK OF TRADITIONAL BRAZILIAN SPACE INDUSTRY AND THE NEW SPACE SCENARIO FOR INTEGRATING TECHNOLOGICAL INNOVATION TO STRATEGY FOR ENTREPRENEURSHIP
Bruno Nunes Vaz, Brazil

13:10-13:20 IAC-24/E11/IPB/84348
ESTABLISHING A GLOBAL SPACE ENABLERS NETWORK
Emeline Dulce Paat-Dahlstrom, New Zealand

13:20-13:30 IAC-24/E11/IPB/91466
NEW OPPORTUNITIES IN THE NEW SPACE ECOSYSTEM: A ONE HEALTH PERSPECTIVE
Stefano Ferretti, Austria

SCREEN #87

12:50-13:00 IAC-24/E11/IPB/86945
ADVANCING SUSTAINABILITY IN SPACE: AN EXTENDED DIGITAL FRAMEWORK FROM NSSA'S EXPERIENCE
MOHAMED ALASEERI, Bahrain

13:10-13:20 IAC-24/E11/IPB/81808
NEW ZEALAND'S PLACE IN SPACE: AN EMERGING SPACE NATION IN THE PACIFIC OCEAN HEADING TOWARDS THE COSMOS
Fay Ghani, United States

13:20-13:30 IAC-24/E11/IPB/83338
ESTABLISHING A TUNISIAN SPACE AGENCY: A STRATEGIC IMPERATIVE FOR NATIONAL EMPOWERMENT AND GLOBAL ENGAGEMENT
Oussema Jouini, Tunisia

SCREEN #88

12:50-13:00 IAC-24/E11/IPB/81865
URUGUAY; THE JEWEL OF LATIN AMERICA ON THE STAGE OF NEW SPACE 2.0
Mariana Garcia, Uruguay

13:10-13:20 IAC-24/E11/IPB/80993
FOSTERING WORKFORCE CAPABILITY AND VIABILITY IN EMERGING SPACE NATIONS
Dharshun Sridharan, Australia

13:20-13:30 IAC-24/E11/IPB/91046
THE GREEK 'SPACE ECOSYSTEM': STARTING SMALL TO TEST THE WATERS
Dimitra Stefoudi, The Netherlands

SCREEN #89

12:50-13:00 IAC-24/E11/IPB/85208
THE CENTRAL AMERICAN SPACE CONGRESS (CEC) - CONNECTING GOVERNMENTS, INDUSTRY, AND ACADEMIA IN CENTRAL AMERICA WITH THE WORLD
Luis Zea

13:20-13:30 IAC-24/E11/IPB/81115
SPACETIME PROTOCOL: TWO-WAY INTERCONNECTIVITY AS A COLLABORATIVE LEARNING MECHANISM
Ashley Kosak, United States

SCREEN #90

13:10-13:20 IAC-24/E11/IPB/91393
A REVIEW OF THE PERUVIAN AEROSPACE ECOSYSTEM: THE DEVELOPMENT OF PERUVIAN AEROSPACE PROJECTS AND INITIATIVES
George Steve Fajardo Soria, Peru

13:20-13:30 IAC-24/E11/IPB/90840
ASU MILO SPACE SCIENCE INSTITUTE: AT-SCALE CAPACITY BUILDING TO ENABLE STEM WORKFORCE GROWTH FOR EMERGING SPACE ECOSYSTEMS
Sheri Klug Boonstra, United States

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SCREEN #1

13:30-13:40 IAC-24/A1/IPB/83990

MODELLING THE IRRADIATION EXPERIMENTS OF MICROBIC FILMS WITHIN THE BOREALIS PAYLOAD
Nunzio Burgio

13:40-13:50 IAC-24/A1/IPB/91691

A TRANSCRIPTOMIC APPROACH TO UNDERSTAND PHARMACOGENETICS OF MICE EXPOSED TO SPACEFLIGHT CONDITIONS
Jette Ritz

13:50-14:00 IAC-24/A1/IPB/90843

EXPLORING THE HUMAN ELEMENT OF SPACE EXPLORATION
Tuncay Isgenderli, Azerbaijan

14:00-14:10 IAC-24/A1/IPB/86166

EFFECT OF MICROGRAVITY ON TITANIUM DEVICE-INDUCED BONE REMODELING: PRECLINICAL STUDY USING C57BL/6 MICE
Andrea Cariz Quezada, Chile

SCREEN #2

13:30-13:40 IAC-24/A1/IPB/87376

A RE-EVALUATION OF THE EARLY EFFECTS OF WEIGHTLESSNESS
Jay Buckey

13:40-13:50 IAC-24/A1/IPB/90245

EFFECTS OF A SLEEP AID MEDICATION ON FLATWORM BEHAVIOR IN SPACE FLIGHT ANALOGS
Virginia Wotring, France

13:50-14:00 IAC-24/A1/IPB/88234

PULSED ELECTROMAGNETIC FIELD (PEMF) AS A VALID COUNTERMEASURE AGAINST INFLAMMATION IN INTERVERTEBRAL DISC DEGENERATION ALSO DURING SPACE EXPOSURE
Stefania Elena Navone, Italy

14:00-14:10 IAC-24/A1/IPB/81937

HORIZONTAL RUNNING BOUTS INSIDE A CIRCULAR WALL ON THE MOON AS A COUNTERMEASURE TO PROLONGED LOW GRAVITY DECONDITIONING OF BONE, MUSCLE AND CARDIO-VASCULAR FITNESS. IMPLICATIONS FOR HABITAT DESIGN.
Alberto Minetti, Italy

SCREEN #3

13:30-13:40 IAC-24/A1/IPB/80954

AN INVESTIGATION OF THE EFFECTS OF SOUNDING ROCKET TRAVEL IN THE IONOSPHERE ON THE STRUCTURE, ELEMENTAL COMPOSITION AND PHOTOSYNTHETIC VIABILITY OF CYANOBACTERIA NOSTOC.
Catherine James, United Kingdom

13:40-13:50 IAC-24/A1/IPB/82894

THE POTENTIAL EFFECTS OF SUBORBITAL SPACEFLIGHT STRESSORS ON PASSENGERS WITH CARDIOVASCULAR COMORBIDITIES: A SYSTEMATIC REVIEW.
Sarah Gaier, United Kingdom

13:50-14:00 IAC-24/A1/IPB/90058

OLFACTORY ENHANCEMENT FOR ASTRONAUT WELL-BEING IN CONFINED SPACE HABITATS
Bartosz Choiński, Poland

14:00-14:10 IAC-24/A1/IPB/82156

EFFECTS OF ARTIFICIAL GRAVITY ON THE MUSCULOSKELETAL SYSTEM
Francesc Casanovas Gassó, Spain

14:30-14:40 IAC-24/A1/IPB/87469

POTENTIAL HABITABLE ENVIRONMENT FOR CULTIVATING ALGAE: PROXIMA CENTAURI B
Bilal Sayın, Türkiye

14:40-14:50 IAC-24/A1/IPB/87574

MULTI-STAGE ADAPTIVE FILTERING OF COSMIC RAY SIGNAL DATA - APPLICATION AND CONFIGURATION FOR ULTRA-HIGH-ENERGY COSMIC RAY STUDY AT PIERRE AUGER OBSERVATORY
Diana Pawlicki, Poland

SCREEN #4

13:30-13:40 IAC-24/A1/IPB/81776

BIOSPACE: VIRTUAL REALITY COLLABORATION PLATFORM FOR SUSTAINABLE PSYCHOPHYSIOLOGICAL TRAINING IN SPACE
Acatzin Benítez Salgado, Mexico

13:40-13:50 IAC-24/A1/IPB/83666

THE EFFECT OF SHORT-TERM EXPOSURE TO SIMULATED MICROGRAVITY ON CIRCADIAN CLOCK GENE EXPRESSION IN MOUSE EMBRYONIC FIBROBLASTS
Devjoy Dev, United Arab Emirates

13:50-14:00 IAC-24/A1/IPB/83069

SUSTAINABILITY IN SPACE MISSIONS: INNOVATION IN RADIATION PROTECTION USING RECYCLED WATER
Rivaldo Carlos Duran Aquino, Peru

14:00-14:10 IAC-24/A1/IPB/88977

IMPROVED MORPHOLOGY AND BIOCHEMICAL PROPERTIES OF CARROT'S ROOTS AFTER SIMULATED MICROGRAVITY IMPACT
Funmilola Adebisi Oluwafemi, Nigeria

14:10-14:20 IAC-24/A1/IPB/87994

IDENTIFYING AND CHARACTERISING PERSONAL "STYLES" ON EVA OPERATIONS.
Giuseppe Scavo, France

14:20-14:30 IAC-24/A1/IPB/80940

THE MARTIANAUT PROJECT: STUDYING THE PHYSICAL, PSYCHOLOGICAL AND PHYSIOLOGICAL OUTCOMES AND UNDERSTANDING ISOLATION CHALLENGES IN AN I.C.E ANALOG SIMULATION IN A PIONEERING ONE-PERSON MISSION; A PILOT CASE STUDY
Susan Ip-Jewell, United States

14:30-14:40 IAC-24/A1/IPB/91086

EXPLORING THE PSYCHOSOCIAL IMPACTS OF SPACE TOURISM: CHALLENGES AND OPPORTUNITIES
Elza Salimli, Azerbaijan

SCREEN #5

13:30-13:40 IAC-24/A1/IPB/84228

THE EFFECT OF SPACEFLIGHT AND MICROGRAVITY ON THE HUMAN BRAIN
Alizada Ravan, Azerbaijan

13:40-13:50 IAC-24/A1/IPB/90190

COGNITIVE BEHAVIORAL THERAPY FOR LONELINESS AND ISOLATION OF ASTRONAUTS IN SPACE MISSION
Elza Salimli, Azerbaijan

13:50-14:00 IAC-24/A1/IPB/89987

EXPLORING THE PSYCHOLOGICAL IMPACT OF MENSTRUATION IN SPACE ON FEMALE ASTRONAUTS
Nargiz Aliyarli, Azerbaijan

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14:00-14:10 IAC-24/A1/IPB/90497
ANOREXIA NERVOSA IN SPACE ENVIRONMENTS
Fidan Huseynzada, Azerbaijan

14:10-14:20 IAC-24/A1/IPB/90357
MITIGATING BONE LOSS IN ASTRONAUTS THROUGH THE APPLICATION OF THE 'AGGREGATION OF MARGINAL GAINS' APPROACH
Erik Seedhouse

14:30-14:40 IAC-24/A1/IPB/81677
EXPLORATION OF THE BIOMECHANICAL STRESS ON THE BODY WHILE PERFORMING FUNCTIONAL AND OPERATIONALLY RELEVANT MOVEMENT PATTERNS UNDER VARIABLE GRAVITATIONAL STRESS
Devjoy Dev, United Arab Emirates

14:40-14:50 IAC-24/A1/IPB/88472
GALVANIC VESTIBULAR STIMULATION AS A COUNTERMEASURE TO MOTION SICKNESS FOLLOWING GRAVITY TRANSITIONS IN ASTRONAUTS
Aaron Allred, United States

SCREEN #6

13:30-13:40 IAC-24/A1/IPB/81796
HUMAN PERFORMANCE OF A COLOMBIAN AEROSPACE FORCE CREW IN EXTRAVEHICULAR SPACE ANALOG IN THE ILMAH HABITAT IN NORD DAKOTA (ATLAS)
Jeimmy Nataly Buitrago Leiva, Colombia

13:40-13:50 IAC-24/A1/IPB/85655
TERRESTRIAL AND SPACE APPLICATIONS OF INNOVATIONS IN TELEMEDICINE AND BIOMEDICAL MONITORING FOR EXTREME AND REMOTE ENVIRONMENTS
Antonio Pallotti

13:50-14:00 IAC-24/A1/IPB/88304
ASSISTED REPRODUCTIVE TECHNOLOGIES IN SPACE IMPROVE LIFE ON EARTH
Angelo C.J. Vermeulen, The Netherlands

14:00-14:10 IAC-24/A1/IPB/87014
ADAPTIVE VERTICAL FARM FOR SPACE CULTIVATION: A FIRST PROOF OF CONCEPT
Patrizia Bagnerini

14:10-14:20 IAC-24/A1/IPB/87675
SIMULATED MICROGRAVITY INDUCES ANTIOXIDANT BARRIER ENZYMES IMPAIRMENT AND CIRCADIAN CLOCK GENES Deregulation
Marika Berardini, Italy

SCREEN #7

13:30-13:40 IAC-24/A1/IPB/85781
DEEP LEARNING OPTIMIZATION IN CARDIOVASCULAR DECONDITIONING MODELLING FOR LONG-TERM HUMAN SPACE MISSIONS.
Antoni Perez-Poch

13:40-13:50 IAC-24/A1/IPB/88538
POSSIBLE FACTORS IN THE CASCADE OF EVENTS WHERE THE CREB1 GENE MAY MODULATE THE ADVERSE EFFECTS OF MICROGRAVITY ON ASTRONAUT HEALTH
Laura Rosa Cornejo-Roldán

14:00-14:10 IAC-24/A1/IPB/84436
ASTRONAUT PARAPSYCHIC TRAINING
ANIBAL BENTES, Brazil

14:30-14:40 IAC-24/A1/IPB/90912
EMSI SUIT: ELECTRICAL MUSCLE SIMULATION SUIT FOR COUNTERING MUSCULOSKELETAL CHANGES IN MICROGRAVITY THROUGH INTERACTION WITH POSTURAL MUSCLES.
Giorgio Lorini, Italy

14:40-14:50 IAC-24/A1/IPB/82799
CARDIOPULMONARY RESUSCITATION (CPR) IN MICROGRAVITY: EFFECTIVENESS OF USING THE MMM VS. THE CMRS – CPR SIMULATION IN NEUTRAL BUOYANCY.
Arkadiusz Trzos, Poland

SCREEN #8

13:30-13:40 IAC-24/A1/IPB/91701
EVALUATION OF CALCIUM SALTS IN DIETARY SUPPLEMENTS AND NUTRACEUTICALS: PROPOSAL FOR TREATMENT OF BONE DEMINERALIZATION IN ASTRONAUTS
Katherine del Socorro Luna Abundis

14:00-14:10 IAC-24/A1/IPB/81143
BREATH-ACTUATED VR EXPERIMENTAL PROTOCOL COUNTERMEASURES: A REPORT CONTEXTUALIZING AN ANALOG ASTRONAUT HCI USER-STUDY
Sarah Jane Pell, Australia

SCREEN #9

13:30-13:40 IAC-24/A3/IPB/80879
COMEJÉN: AN INTELLIGENT AUTONOMOUS GEOLOGICAL SURVEYOR AND REGOLITH PROCESSOR FOR LUNAR INFRASTRUCTURE CONSTRUCTION
Rogelio Morales, Venezuela

13:40-13:50 IAC-24/A3/IPB/85817
AFRICA2MOON: A LOW COST, LOW FREQUENCY RADIO ASTRONOMY ARRAY ON THE MOON
Adriana Marais, South Africa

14:00-14:10 IAC-24/A3/IPB/90222
A SYNTHETIC COMET AND ASTEROID IMAGE DATASET FOR NEURAL NETWORK TRAINING AND SYSTEM VERIFICATION
Ric Dengel, Estonia

14:30-14:40 IAC-24/A3/IPB/91528
MINIATURE SEMICONDUCTOR WATER MAPPING NEUTRON SPECTROMETER HARDPIX
Robert Filgas, Czech Republic

SCREEN #10

13:30-13:40 IAC-24/A3/IPB/88302
TESTING FOR THE DEVELOPMENT, VERIFICATION AND VALIDATION OF LARGE ROBOTIC INTERFACES FOR THE LUNAR GATEWAY
Kirtan Dhunnoo, Canada

13:40-13:50 IAC-24/A3/IPB/85801
DESIGN OF INFLATABLE MULTI-PURPOSE TOWER FOR SUPPORT OF ROBOTIC AND CREWED LUNAR SURFACE OPERATIONS
Krunali Shah, United States

14:00-14:10 IAC-24/A3/IPB/89101
ECONOMICAL LUNAR SAMPLE RETURN MISSION WITH SOIL PENETRATION DARTS
Viduranga Landers, Sri Lanka

14:10-14:20 IAC-24/A3/IPB/84096
DESIGN AND DEVELOPMENT OF A COMPACT LEGGED DRONE FOR UNDERGROUND PLANETARY EXPLORATION
Irene Terlizzi, Italy

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14:30-14:40 IAC-24/A3/IPB/88485
NOVEL METHODS FOR QUALIFYING ROVERS - IN-ORBIT
DEMONSTRATION AND VERIFICATION FOR MOON ROVERS
Maximilian von Unwerth, Germany

SCREEN #11

13:30-13:40 IAC-24/A3/IPB/87350
PHYSICALLY ACCURATE AND VISUALLY REALISTIC LUNAR
SURFACE SIMULATOR FOR MOON EXPLORATION MISSIONS
Louis Burtz, Japan

13:40-13:50 IAC-24/A3/IPB/83782
FLI-ME: A NOVEL APPROACH TO LUNAR EXPLORATION USING
FLYING IMAGERS
Muhammad Rizwan Mughal, Oman

13:50-14:00 IAC-24/A3/IPB/83872
SENSORPOD: A COMPACT AND LIGHTWEIGHT AUTONOMOUS
SENSOR SUITE MODULE FOR LUNAR SURFACE EXPLORATION
Zach Ioannou, Oman

14:00-14:10 IAC-24/A3/IPB/85667
MULTI-OBJECTIVE DECISION ANALYSES ON DEPLOYING LUNAR
IN-SITU
RESOURCE UTILIZATION PLANTS UNDER RESOURCE AND
OPERATIONAL UNCERTAINTY
Kosuke Ikeya, United Kingdom

14:10-14:20 IAC-24/A3/IPB/84022
DECISION SUPPORT SYSTEMS FOR LUNAR IN-SITU RESOURCE
UTILIZATION DESIGN AND OPERATIONS UNDER UNCERTAINTY
Luka Malone, United Kingdom

14:20-14:30 IAC-24/A3/IPB/89760
WHAT DOES LUNAR ICE LOOK LIKE? THE LUNAR REGOLITH ICE
AND SUBLIMATION EXPERIMENT (LRISE)
Zach Ioannou, Oman

14:40-14:50 IAC-24/A3/IPB/91487
SHADOW-INVARIANT FEATURE EXTRACTOR USING BINARY
NEURAL NETWORKS AND SUN-TRACKERS
Arion Zimmermann, Switzerland

SCREEN #12

13:30-13:40 IAC-24/A3/IPB/87125
INDOOR ANALOGUE FACILITIES, FROM MARS TO THE MOON:
NEW CHALLENGES AND INNOVATIVE SOLUTIONS TO REPRODUCE
WITH HIGH FIDELITY THE LUNAR ENVIRONMENT EXPLOITING
CAPABILITIES AND SKILLS ACQUIRED FROM THE MARS TERRAIN
SIMULATOR DESIGN EXPERIENCES
Maurizio Deffacis, Italy

13:40-13:50 IAC-24/A3/IPB/83974
LASER-INDUCED BREAKDOWN SPECTROSCOPY INSTRUMENT
FOR ACCURATE IN-SITU PROSPECTION OF SPACE RESOURCES
Pavel Porizka, Czech Republic

13:50-14:00 IAC-24/A3/IPB/91407
LUNAR VOYAGE 1: LUNAR OUTPOST'S MAPP ROVER AND
PLANNED OPERATIONS FOR THE FIRST COMMERCIAL ROVER
EXPLORATION OF THE LUNAR SOUTH POLE
Forrest Meyen, United States

14:00-14:10 IAC-24/A3/IPB/84306
A HYBRID GAMMA-RAY AND NEUTRON DETECTOR FOR IN-SITU
RESOURCE UTILIZATION
Anja Kohfeldt, Norway

14:10-14:20 IAC-24/A3/IPB/91453
GRANULAR VIBRATION PUMPING SYSTEM FOR LIFTING LUNAR
REGOLITH
Masato Adachi, Japan

14:20-14:30 IAC-24/A3/IPB/82320
CONCEPTUAL ROVER DESIGN FOR TURKISH LUNAR MISSION
Beste Boybaşı, Türkiye

14:30-14:40 IAC-24/A3/IPB/81614
EFFECT OF REACTIVE BINDERS ON REGOLITH MANUFACTURING
PROCESSES
Asher Perez, United States

14:40-14:50 IAC-24/A3/IPB/87128
MOON EXPLORATION: THE ITALIAN INTEGRATED GROUND
FACILITY TO SUPPORT TECHNOLOGIES TESTING AND LUNAR
OPERATIONS PREPARATIONS, VALIDATION AND EXECUTION IN A
REPRESENTATIVE LUNAR ENVIRONMENT
Diego Bussi, Italy

SCREEN #13

13:30-13:40 IAC-24/A3/IPB/80813
HOW DECISION MAKING LESSONS FROM THE ANTARCTIC CAN BE
APPLIED TO MARS MISSIONS
Erik Seedhouse, United States

13:40-13:50 IAC-24/A3/IPB/86633
RETHINKING ROVER DESIGN WITH RECONFIGURABLE ROBOTICS
Rithesh Murarishetty, India

14:10-14:20 IAC-24/A3/IPB/88197
DEVELOPMENT OF A LOW-COST REUSABLE ROBOTIC LANDER
PROTOTYPE WITH COLD GAS PROPULSION SYSTEM
Emre Aklan, Türkiye

14:20-14:30 IAC-24/A3/IPB/87973
PATH PLANNING FOR AN AUTONOMOUS ROVER ON LUNAR
SURFACE
Jeroen Schimmel, The Netherlands

14:30-14:40 IAC-24/A3/IPB/90438
AI-POWERED AUTONOMY SUITE FOR INTELLIGENT DECISION-
MAKING IN CHALLENGING ENVIRONMENTS THROUGH
HETEROGENEOUS AUTONOMOUS SYSTEMS
Pradyumna Nanda Vyshnav, Finland

SCREEN #14

13:30-13:40 IAC-24/A3/IPB/82639
THE METHOD FOR CREATING ICY SOIL IN A VACUUM CHAMBER
Taeil Chung, Korea, Republic of

13:40-13:50 IAC-24/A3/IPB/90729
PALE POLARIZED DOTS: SPECTROPOLARIMETRY OF THE EARTH
AS AN EXOPLANET WITH LOUPE
Chris van Dijk, The Netherlands

14:00-14:10 IAC-24/A3/IPB/90327
IMPROVED DESIGN AND CONTROL FOR SLIDING LOCOMOTION
FOR LEGGED ROVERS
ON STEEP TERRAIN DURING SPACE EXPLORATION
Claudio Semini, Italy

14:10-14:20 IAC-24/A3/IPB/90427
CONNECTING SCIENCE GOALS TO PAYLOADS FOR TITAN
EXPLORATION: A FOCUS ON GEOMORPHOLOGY
Alisa Zaripova

14:30-14:40 IAC-24/A3/IPB/89175
SELENE: A NOVEL CONCEPT FOR AUTOMATIC TRANSPORT
SYSTEM FROM LOP-G TO THE
MOON
Gennaromaria Crispino, Italy

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13:30-13:40 IAC-24/A3/IPB/86118
INNOVATIVE HUMAN-OPERATED PLANETARY SURFACE
EXPLORATION SMART TOOL FOR ARTEMIS LUNAR MISSION
Aaron Persad, United States

14:30-14:40 IAC-24/A3/IPB/89820
GENETIC ALGORITHM FOR LUNAR FLOWER CONSTELLATION
Giacomo Porcarelli, Italy

SCREEN #16

13:30-13:40 IAC-24/A3/IPB/87805
INTEGRATED APPROACH FOR WATER PRODUCTION AND
ADDITIVE MANUFACTURING USING MAGNETICALLY-
BENEFICIATED LUNAR REGOLITH
Ivan Troisi, Italy

14:30-14:40 IAC-24/A3/IPB/85497
IRADICAL: A MONOLITHIC INORGANIC SCINTILLATOR AND THIN
SCINTILLATORS TO MEASURE LOW ENERGY ELECTRON, PROTON
AND HEAVY ION ALBEDO SPECTRUMS FROM LUNAR SURFACE
Ali Behcet ALPAT, Italy

14:40-14:50 IAC-24/A3/IPB/82990
POSITION, VELOCITY AND TIME COMPUTATION BASED ON
MULTIPLE DATA SOURCES IN THE LUNAR ENVIRONMENT.
Ghislain Dard, Italy

SCREEN #17

13:30-13:40 IAC-24/A3/IPB/91212
SURVIVING SOLITUDE: THE ELPIS MISSION - A CASE STUDY
ON ASTRONAUT RESILIENCE, RESOURCE MANAGEMENT, AND
TRAINING FOR ISOLATION IN EXOSPEHAB-X HABITAT
Agnieszka Elwertowska, Poland

13:40-13:50 IAC-24/A3/IPB/89216
MOON-GAR
Valentina Azzeloni, Mexico

13:50-14:00 IAC-24/A3/IPB/84892
KINEMATIC AND STRUCTURAL ANALYSIS OF TERRAIN-ADAPTIVE
WHEELED ROVERS FOR MARS EXPLORATION
Sarkhan Aghadadashov, Azerbaijan

14:00-14:10 IAC-24/A3/IPB/85807
PARAMETRIC ANALYSIS OF ROTARY VTOL AEROBOT DESIGN
CONFIGURATIONS TO FLY ON TITAN
Vishal Youhanna, United Kingdom

14:10-14:20 IAC-24/A3/IPB/82608
DEVELOPMENT AND CONTROL OF A SOLAR TRACKER SYSTEM
FOR SPACE EXPLORATION VEHICLES
Carlos Alfredo Aguilera Manriquez, Russian Federation

14:20-14:30 IAC-24/A3/IPB/86698
A TERRAIN FEATURES LINKED PATH PLANNING METHOD BASED
ON POINT CLOUD CARTOGRAPHY FOR COMPLEX LUNAR
ENVIRONMENT
Chenhao Ouyang, China

14:30-14:40 IAC-24/A3/IPB/86984
RESEARCH ON TASK ALLOCATION METHOD FOR MULTI-AGENT
SYSTEMS ON THE MOON WITH A DISTRIBUTED ARCHITECTURE
Yingbo Zhang, China

14:40-14:50 IAC-24/A3/IPB/83156
INVESTIGATING LUNAR DUST INTERACTION: CUBESAT
EXPERIMENT TO ANALYZE SUBSTANCE RESPONSE ON THE
MOON'S SURFACE
Sara Altrawneh, Jordan

SCREEN #18

13:40-13:50 IAC-24/A3/IPB/91140
Enea: CHARACTERIZATION OF NEAR EARTH OBJECTS THROUGH
THE DEVELOPMENT OF AN ASTEROID HOPPING MISSION
Dario Scimone, Italy

14:00-14:10 IAC-24/A3/IPB/88445
HOW TO DO ENGINEERING OF LUNAR PROPELLANT REFINING
PLANT
Masaaki Nii, Japan

SCREEN #19

14:40-14:50 IAC-24/A3/IPB/87344
RECYCLING OF ALUMINUM FOR A MULTI-TOOL

IN A LUNAR OR MARTIAN SETTLEMENT
Matvei Andreev, Germany

SCREEN #20

14:40-14:50 IAC-24/A3/IPB/85569
LUNAR LAUNCHPAD TO COSMIC FRONTIERS: NAVIGATING
INTERPLANETARY EXPLORATION FROM THE MOON
Gourav Mohanan, India

SCREEN #25

13:30-13:40 IAC-24/A6/IPB/82995
ON THE "SPACE DEBRIS AND LONG-TERM SUSTAINABILITY" ASI-
INAF AGREEMENT
Alessandra Di Cecco, Italy

13:40-13:50 IAC-24/A6/IPB/84087
EFFECTS OF USING POWER SUPPLY IN DEORBITING WITH
ELECTRODYNAMIC TETHERS
Giovanni Anese, Italy

13:50-14:00 IAC-24/A6/IPB/88858
USING FROZEN ORBITS AND WELL-DEFINED CONTROL BOXES
FOR CONSTELLATION SEPARATION
Ryan W. Shepperd, United States

14:00-14:10 IAC-24/A6/IPB/82378
THE ROLE OF AI IN SPACE SITUATIONAL AWARENESS:
MITIGATING RISKS AND ENHANCING OPERATIONS
Nasib Karimov, Azerbaijan

14:20-14:30 IAC-24/A6/IPB/87285
ADVANCING SATELLITE SAFETY THROUGH AI/ML, MULTI-AGENT
SYSTEMS, AND PRIVACY ENHANCEMENT TECHNIQUES
Dan-Andrei Stanculescu

14:30-14:40 IAC-24/A6/IPB/87603
DYNAMIC ORBITAL RISK ASSESSMENT IN A CHANGING SPACE
DEBRIS ENVIRONMENT
Francisco Javier Simarro Mecinas, United Kingdom

14:40-14:50 IAC-24/A6/IPB/84748
ARTIFICIAL INTELLIGENCE-BASED PHYSICS INFORMED
ALGORITHM FOR ORBIT DETERMINATION FROM VERY SHORT
ARCS
Gilberto Goracci, Italy

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SCREEN #26

13:30-13:40 IAC-24/A6/IPB/88750
INITIAL POSE ACQUISITION PHASE FOR ACTIVE DEBRIS REMOVAL MISSIONS

Bronislovas Razgus, Lithuania

13:40-13:50 IAC-24/A6/IPB/84856
LEVERAGING EVENT-BASED CAMERAS FOR ENHANCED SPACE SITUATIONAL AWARENESS: A NANOSATELLITE MISSION ARCHITECTURE STUDY

Vincenzo Messina, Germany

13:50-14:00 IAC-24/A6/IPB/86706
MULTI-COLOR PHOTOMETRY AND CLASSIFICATION FOR MULTI-PLATFORM GEO OBJECTS

He Zhao

14:00-14:10 IAC-24/A6/IPB/88872
DESIGN OF A HARDWARE-IN-THE-LOOP TESTBED FOR THE ATTITUDE CONTROL SUBSYSTEM OF THE ELSA-M SPACECRAFT

Anton Liegert, Germany

14:30-14:40 IAC-24/A6/IPB/88820
SHORT-TERM RECONSTRUCTION OF FRAGMENTATION EVENTS IN LOW EARTH ORBIT USING UNCERTAINTY PROPAGATION

Francesca Ottoboni, Italy

SCREEN #27

13:30-13:40 IAC-24/A6/IPB/83244
UPGRADE OF ESA'S DRAMA 4.0 - INTRODUCING THE NEW SPACE SURVEILLANCE AND TRACKING ANALYSIS CAPABILITY

Alessandra Gallucci

13:40-13:50 IAC-24/A6/IPB/91741
IN-ORBIT SPACE DEBRIS RECYCLING FOR ADDITIVE MANUFACTURING FEEDSTOCK

Sakshi Patil

13:50-14:00 IAC-24/A6/IPB/86687
FAIR SHARED COLLISION AVOIDANCE MANOEUVRE FOR ACTIVE VS ACTIVE CONJUNCTIONS

Jorge Rubio Antón, Spain

14:00-14:10 IAC-24/A6/IPB/82884
AN ANALYSIS OF STUDENT FOCUS AND ATTENTION SPAN IN THE CHARACTERIZATION OF DEBRISAT FRAGMENTS

Jasmin Schauer, United States

14:10-14:20 IAC-24/A6/IPB/90648
AUTONOMOUS COLLISION AVOIDANCE ON-ORBIT EXPERIMENT IN THE E.CUBE MISSION

Juan Luis Gonzalo

14:20-14:30 IAC-24/A6/IPB/90020
EVALUATION OF THE INTRODUCTION OF A NEURAL NETWORK INTO THE OBJECTS DETECTION PROCESS ON ASTRONOMICAL IMAGES

Mascia Bucciarelli, Italy

14:30-14:40 IAC-24/A6/IPB/82739
THE USE OF SPACE-TO-SPACE NON-EARTH IMAGERY (NEI) TO UNDERPIN AND DE-RISK SPACE-DEBRIS OPERATIONS

Toby Harris, United Kingdom

14:40-14:50 IAC-24/A6/IPB/87679
HIGH-PRECISION ORBIT PROPAGATOR TOOL FOR SATELLITE IN-ORBIT COLLISION VERIFICATION AFTER RELEASE

Marco Pustorino, Italy

SCREEN #28

13:30-13:40 IAC-24/A6/IPB/85219
ELLIPSOID APPROXIMATION OF A SPACE OBJECT AND ROTATION DETERMINATION USING OPTICAL MEASUREMENTS

Dmitrii Petrov

13:40-13:50 IAC-24/A6/IPB/89796
SPACE WEATHER EFFECT OF RECENTLY LAUNCHED ROTATING SPACE DEBRIS VIA PHOTOMETRIC OBSERVATIONS

Katarína Sabolová, Slovak Republic

13:50-14:00 IAC-24/A6/IPB/88651
SATELLITE AND RSO DETECTION, TRACKING AND ORBIT-DETERMINATION BY COMMERCIAL STAR TRACKERS IN REAL-SKY PERFORMANCE DEMONSTRATIONS AND ANALYTICAL CAPACITY ASSESSMENT FOR IN-ORBIT SSA APPLICATIONS

Andreas Hornig, Germany

14:00-14:10 IAC-24/A6/IPB/83063
NOVEL MULTI-PURPOSE SOFT GRIPPER WITH TUNABLE STIFFNESS FOR SPACE GRASPING

Alfredo Puente-Flores, Japan

14:10-14:20 IAC-24/A6/IPB/91640
ROBUST ORBIT-ATTITUDE COUPLED CONTROL FOR PROXIMITY OPERATIONS OF MULTIPLE SPACE DEBRIS

Zhirun Xue

14:20-14:30 IAC-24/A6/IPB/91411
NAVIGATING THE LEGAL FRONTIER: CANADA'S APPROACH TO SPACE SUSTAINABILITY

Grecia Olano O'Brien, Canada

14:30-14:40 IAC-24/A6/IPB/88778
A NOVEL MACHINE-LEARNING APPROACH FOR DETECTION AND AVOIDANCE OF SPACE DEBRIS COLLISIONS

ANURAG GUPTA, India

14:40-14:50 IAC-24/A6/IPB/81206
DEBRIS TRACKING FROM STAR TRACKER OBSERVATIONS

Alexander Vandenbergh, Belgium

SCREEN #29

13:30-13:40 IAC-24/A6/IPB/86784
SHOOTING APPROACH IN OPTIMIZED BOUNDARY VALUE ORBIT DETERMINATION

Alessandro Vananti

13:40-13:50 IAC-24/A6/IPB/88756
TARGETS SEQUENCE OPTIMISATION FOR LOW THRUST MULTIPLE ACTIVE DEBRIS REMOVAL MISSIONS WITH DYNAMIC PROGRAMMING

Michael Lucchi, Italy

14:00-14:10 IAC-24/A6/IPB/89822
A MODULAR 1U DETECTOR FOR IN-SITU MONITORING OF THE SUB-MILLIMETRIC SPACE DEBRIS ENVIRONMENT

Rok Sesko, Germany

14:40-14:50 IAC-24/A6/IPB/87416
PLAN AND EXECUTE A COLLISION AVOIDANCE STRATEGY FOR GALILEO GSAT0219

Pedro PINTOR, Germany

SCREEN #30

13:30-13:40 IAC-24/A6/IPB/86270
LEGAL FRAMEWORK OF ON-ORBIT ROBOTIC ARM FOR ACTIVE DEBRIS CAPTURE AND REMOVAL

Yianni Hudon-Castillo, Canada

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INTEGRATING ORBITAL CARRYING CAPACITY INTO INTERNATIONAL POLICY CONSTRUCTS: LEVERAGING BEST PRACTICES FROM AVIATION'S RISK-BASED NORMS.
Ruth Stilwell

14:00-14:10 IAC-24/A6/IPB/87837
COMMERCIAL OPERATORS' PRAGMATIC, INCREMENTAL APPROACH TO SPACE SAFETY AND SUSTAINABILITY
Lorenzo Arona, United Kingdom

14:30-14:40 IAC-24/A6/IPB/89275
ORBITA EVOLUTION OF A MOLNIYA FRAGMENTATION
Elisa Maria Alessi, Italy

14:40-14:50 IAC-24/A6/IPB/88483
INNOVATIVE SPACE DEBRIS MITIGATION: MECHANICAL DESIGN OF A PAYLOAD CONTAINING AN ELECTRODYNAMIC TETHER INTEGRATED WITH A CARBON NANOTUBE COLD CATHODE FOR EFFECTIVE DEORBITING OF NANOSATELLITES
Lovejivan Sidhu

SCREEN #31

13:30-13:40 IAC-24/A6/IPB/87437
INCORPORATING ORBITAL DEBRIS RISK ANALYSIS INTO Cislunar ORBITAL PROCEDURES AND POST-MISSION DISPOSAL
Amlan Sinha, United States

13:40-13:50 IAC-24/A6/IPB/90492
ERROR ANALYSIS OF BULK-DENSITY MEASUREMENTS FOR DEBRISAT FRAGMENTS
Cesar Carrasquilla, United States

14:00-14:10 IAC-24/A6/IPB/88924
LONG-TERM COLLISION RISK ASSESSMENT OF SPACECRAFT BASED ON THREE-DIMENSIONAL SPACE GRID
Yurun Yuan, China

14:30-14:40 IAC-24/A6/IPB/87337
OPTICAL OBSERVATIONS OF Cislunar RSO USING IMAGE STACKING
Rong-Yu Sun, China

14:40-14:50 IAC-24/A6/IPB/88829
NUMERICAL IMPLEMENTATION OF EMPIRICAL DISTRIBUTION MODELS FOR SPACECRAFT FRAGMENTATION
Giovanni Ieranò, Italy

SCREEN #32

13:40-13:50 IAC-24/A6/IPB/81422
POLYURETHANE-FOAM BASED SPACE DEBRIS REMEDIATION: A COST-EFFECTIVE AND EFFICIENT APPROACH
Léonie Gasteiner

14:00-14:10 IAC-24/A6/IPB/85154
IDENTIFYING OPERATIONAL PATTERNS IN LEO SATELLITE ORBITS THROUGH TIME SERIES CLUSTERING
Marta Guimaraes, Portugal

14:40-14:50 IAC-24/A6/IPB/82802
DESIGNING DEORBIT STRATEGY USING BRAKING SAIL WITH MULTIPLE ELECTRODYNAMIC TETHER ATTACHED
heng jiang, China

SCREEN #33

13:30-13:40 IAC-24/A6/IPB/88830
EVOLUTION OF ORBITAL PARAMETERS OF SPACE DEBRIS CONSIDERING ORBITAL MANEUVERS AND GROUND-BASED LASER.
Jorge Kennety Silva Formiga

13:40-13:50 IAC-24/A6/IPB/91573
RESPONSE OF A WIRE PROBE ANTENNA THAT SIMULATES THE ACTUAL SHAPE AFFECTED SUBJECTED TO HIPER-VELOCITY IMPACTS
Kumi Nitta

14:00-14:10 IAC-24/A6/IPB/83005
THE RESEARCH OF INTELLIGENT PARALLEL APPROACH FOR SPACE DEBRIS GRASPING MANIPULATOR TRAJECTORY PLANNING
Jinyu Zhang

14:40-14:50 IAC-24/A6/IPB/83711
REENTRY PREDICTION OF SPACE OBJECTS WITH ARTIFICIAL INTELLIGENCE TECHNIQUES
Okchul Jung, Korea, Republic of

SCREEN #34

13:30-13:40 IAC-24/B1/IPB/86697
OPTIMIZED FPGA-BASED REAL-TIME ONBOARD PROCESSING FOR ENHANCED MARITIME SURVEILLANCE
Aysha Alharam, Bahrain

13:50-14:00 IAC-24/B1/IPB/84536
SPACEBORNE ARTIFICIAL INTELLIGENCE (AI) FOR VESSEL DETECTION APPLICATIONS
Muhammad Rizwan Mughal, Oman

14:00-14:10 IAC-24/B1/IPB/91200
CLARREO PATHFINDER PAYLOAD AND MISSION OVERVIEW
Jonathan Mihaly, United States

14:10-14:20 IAC-24/B1/IPB/82994
EXPLORING AND PROCESSING LARGE DATA SETS IN EARTH OBSERVATION ON HPC-SYSTEMS WITH HEAT
Fabian Hoppe, Germany

14:30-14:40 IAC-24/B1/IPB/84134
CUBEHAPS. SYNCHRONIZED HAPS-SATELLITE EARTH OBSERVATION
Victor Miherea, Italy

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Yuval Lorig, Israel

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Vassilios Silaidis, Italy

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VIRTUAL REALITY DISPLAYS FOR SPACEFLIGHT OPERATIONS AND
TRAINING
Savannah Buchner, United States

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13:30-13:40 IAC-24/B6/IPB/86629
EFFICIENT ASTRONOMICAL OBSERVATION MISSION PLANNING
STRATEGY IN THE EINSTEIN PROBE SATELLITE MISSIONS
Zhun Feng, China

13:40-13:50 IAC-24/B6/IPB/85071
CABLE DRIVEN ROBOT FOR SPACE OPERATION
Carlo Canali, Italy

14:40-14:50 IAC-24/B6/IPB/89504
METHODS FOR OPTIMIZING A MONTE CARLO CAMPAIGN FOR
AN AEROSPACE MODEL: SAMPLING AND REPRESENTATIVENESS
CONSIDERATIONS
Rocco Larocca, Italy

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13:30-13:40 IAC-24/B6/IPB/87236
"XIYUAN" SPACE DEBRIS REMOVAL DEMONSTRATION MISSION
Jing Yuan, China

13:40-13:50 IAC-24/B6/IPB/88957
MULTI-PURSUER MULTI-TARGET ENCIRCLEMENT STRATEGY
BASED ON MULTI-AGENT DEEP DETERMINISTIC POLICY
GRADIENT
Chuang Liu, China

14:30-14:40 IAC-24/B6/IPB/90069
ADVANCING SATELLITE NETWORK CONSENSUS THROUGH
OPTIMAL ORBITAL CONFIGURATIONS
Robert Cowlshaw, United Kingdom

14:40-14:50 IAC-24/B6/IPB/89505
AN APPROACH FOR SATELLITE CONSTELLATION DESIGN FOR
SPACE OBJECT OBSERVATION
Andrey Belyaev, Russian Federation

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13:30-13:40 IAC-24/C1/IPB/86341
CONTINUOUS ESTIMATOR FOR SPACE LOGISTICS NETWORK
OPTIMIZATION WITH MULTIPLE VEHICLES
Liqiang Hou

13:40-13:50 IAC-24/C1/IPB/89229
LONG-TERM STATION KEEPING AROUND EARTH-MOON SYNODIC
RESONANT HALO ORBITS USING SOLAR SAILS IN HIGH-FIDELITY
DYNAMICS MODEL
Toshihiro Chujo

13:50-14:00 IAC-24/C1/IPB/83548
REINFORCEMENT LEARNING FOR REAL-TIME LOW-THRUST
RELATIVE ORBITAL RENDEZVOUS DESIGN
Longwei Xu

14:00-14:10 IAC-24/C1/IPB/83549
SATELLITE FORMATION CONTROL USING MULTI-AGENT DEEP
REINFORCEMENT LEARNING
Zicen Xiong

14:10-14:20 IAC-24/C1/IPB/88679
OPTICAL AND RADIO DATA FUSION FOR SPACECRAFT
NAVIGATION AND GEOPHYSICAL INVESTIGATIONS
Martina Ciambellini, Italy

14:20-14:30 IAC-24/C1/IPB/90567
SYSTEMATIC ANALYSIS OF Cislunar ESCAPE OPPORTUNITIES
FOR EXPLORATION AND PLANETARY DEFENCE MISSIONS
Andrea Pasquale, Germany

14:30-14:40 IAC-24/C1/IPB/86384
COUPLED RENDEZVOUS AND DOCKING MANEUVER CONTROL
OF SPACECRAFT USING FAST FIXED-TIME SLIDING MODE
CONTROLLER
Rakesh Kumar Sahoo, India

14:40-14:50 IAC-24/C1/IPB/86811
REACHABLE SET OF INVARIANT MANIFOLD WITH LOW THRUST
Yang Wang

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13:30-13:40 IAC-24/C1/IPB/85981
FEASIBILITY STUDY OF AN ALL-ELECTRIC RENDEZVOUS MISSION IN GEO ORBIT
Damiana Losa, France

13:40-13:50 IAC-24/C1/IPB/86769
CONSTRAINED ATTITUDE CONTROL OF SPACECRAFT UNDER ANGULAR VELOCITY CONSTRAINTS AND INPUT SATURATION
Ming LU

13:50-14:00 IAC-24/C1/IPB/87429
UNSATURATED MAINTENANCE AND RECONSTRUCTION OF HIGH SPECIFIC IMPULSE SPACECRAFT FORMATION
Lin Chen

14:00-14:10 IAC-24/C1/IPB/91671
EXHAUSTIVE PARAMETRIC ANALYSIS OF MINIMUM-ENERGY COPLANAR LOW-THRUST TRANSFERS
Mikhail Ovchinnikov

14:10-14:20 IAC-24/C1/IPB/89289
ORBIT-ATTITUDE COUPLED GUIDANCE AND CONTROL FOR CONSTRAINED TRAJECTORY GENERATION AND TRACKING DURING FINAL APPROACH TO NON-COOPERATIVE SPACECRAFT
Agostino Madonna, Italy

14:20-14:30 IAC-24/C1/IPB/85292
A ROBUST APPROACH MERGING DEEP LEARNING AND UNSCENTED KALMAN FOR VISION BASED SPACE RENDEZ-VOUS
thomas chambon

14:30-14:40 IAC-24/C1/IPB/85163
ENHANCED CONVEX OPTIMIZATION STRATEGIES IN 6-DOF NON-COPLANAR ORBITAL MANEUVER TRAJECTORY DESIGN
Haobo Kang, China

14:40-14:50 IAC-24/C1/IPB/91560
A COMPREHENSIVE EXAMINATION OF THE INTEGRATION OF MACHINE LEARNING WITH GNC SYSTEMS FOR OPTIMIZED ENTRY, DESCENT, AND LANDING MISSIONS
Sahil Parmar

SCREEN #66

13:30-13:40 IAC-24/C1/IPB/83809
OPTIMIZATION OF ELECTROSPRAY THRUSTER CONFIGURATION AND CONTROL ALLOCATION FOR SPACECRAFT ATTITUDE CONTROL
Riccardo Gatti

13:40-13:50 IAC-24/C1/IPB/84492
ROBUST POWERED DESCENT GUIDANCE USING SUCCESSIVE CONVEXIFICATION AND TUBE MODEL PREDICTIVE CONTROL
Duozhi Gao

13:50-14:00 IAC-24/C1/IPB/86470
APPROXIMATE ANALYTICAL SOLUTION TO SPACECRAFT OPTIMAL DOCKING USING KOOPMAN OPERATOR THEORY
Ming Xu, China

14:00-14:10 IAC-24/C1/IPB/84269
MODEL PREDICTIVE CONTROL STRATEGY WITH A DECREASING HORIZON INTERVAL FOR A REUSABLE LAUNCHER IN A LANDING SCENARIO
Guillermo Zaragoza Prous

14:10-14:20 IAC-24/C1/IPB/89339
DEEP LEARNING BASED RESOLUTION OF ATTITUDE AMBIGUITIES FOR RELATIVE POSE ESTIMATION OF UNKNOWN AND UNCOOPERATIVE TARGETS
Matteo Rosa

14:20-14:30 IAC-24/C1/IPB/86912
EUCLID FINE GUIDANCE SENSOR: DESIGN AND GROUND VALIDATION
Chiara Finocchietti

14:30-14:40 IAC-24/C1/IPB/89416
A NOVEL APPROACH FOR AUTONOMOUS SPACECRAFT RECOVERY TO SUN POINTING ORIENTATION
KanuPriya Govila, India

14:40-14:50 IAC-24/C1/IPB/81483
COMPLEX ANALYSIS OF A MISSION TO VENUS WITH GRAVITY ASSIST AND RESONANT ORBITS UNDER THE LANDER-ORBITER CONSTRAINTS
Vladislav Zubko

SCREEN #67

13:30-13:40 IAC-24/C1/IPB/84443
OBSERVABILITY-BASED ORBITER AIDED COOPERATIVE NAVIGATION FOR ASTEROID LANDING
Wenbo Xiu

13:40-13:50 IAC-24/C1/IPB/88546
ONBOARD PERCEPTION-BASED AUTONOMOUS VISUAL NAVIGATION AROUND SMALL CELESTIAL BODIES
Avijit Banerjee, Sweden

13:50-14:00 IAC-24/C1/IPB/87920
TRANSFER TO ASTEROIDS DURING CLOSE ENCOUNTER USING FINITE-TIME LYAPUNOV EXPONENT FIELDS
Tianji Chen, China

14:00-14:10 IAC-24/C1/IPB/90541
LUNAR CONSTELLATION DEPLOYMENT TECHNIQUES LEVERAGING NATURAL PERTURBATIONS
Andrea Pasquale, Germany

14:10-14:20 IAC-24/C1/IPB/88645
SYNTHETIC VARIABLE-BASELINE VARIABLE-ORIENTATION STEREO CAMERA SYSTEM FOR RELATIVE NAVIGATION IN CLOSE PROXIMITY
Niccolò Faraco

14:20-14:30 IAC-24/C1/IPB/82506
IONOSPHERIC PLASMA DRAG ON SMALL SATELLITES IN LOW-EARTH ORBIT
Simone Di Fede, Singapore, Republic of

14:30-14:40 IAC-24/C1/IPB/87509
INSPECTION OF SPACE RIDER WITH A 12U CUBESAT: ENSURING SAFETY AND EFFICIENCY
Luca Bartolucci, Italy

14:40-14:50 IAC-24/C1/IPB/87154
AN ORBITAL GAME CONTROL ALGORITHM FOR ON-BOARD APPLICATION BY BEHAVIOUR CLONING
Simeng Huang, China

SCREEN #68

13:40-13:50 IAC-24/C4/IPB/88207
SRAD CAPACITIVE LEVEL SENSOR FOR PROPELLANT MEASUREMENT OF A LIQUID ROCKET
Sheikha Al-Nasser, Norway

13:50-14:00 IAC-24/C4/IPB/82039
DEVELOPMENT AND PRELIMINARY EVALUATION OF PLUGIM ELECTROSPRAY THRUSTER: FOCUS ON THE FUEL MANAGEMENT SYSTEM AND POWER PROCESSING UNIT
Blanca Pavón-Castillo, Spain

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14:00-14:10 IAC-24/C4/IPB/81227

OPTIMISATION AND DURABILITY ASSESSMENT OF RF HELICON-BASED PLASMA THRUSTER (K-2) FOR VERY LOW EARTH ORBIT AIR-BREATHING ELECTRIC PROPULSION

Adrià Barceló, Spain

14:10-14:20 IAC-24/C4/IPB/82275

EXPERIMENTAL TESTING AND NUMERICAL SIMULATION VALIDATION OF AN AIR INTAKE FOR AIR-BREATHING ELECTRIC PROPULSION (ABEP) SYSTEMS

Max Amer, Spain

14:20-14:30 IAC-24/C4/IPB/85015

OPTIMAL TRAJECTORIES FOR A SPACECRAFT PROPELLED BY AN E-SAIL WITH PIECEWISE INERTIALLY-FIXED ATTITUDE

Lorenzo Niccolai, Italy

14:30-14:40 IAC-24/C4/IPB/91448

MULTIDISCIPLINARY DESIGN OPTIMIZATION OF A SUPERSONIC WIND TUNNEL

Antonella Ingenito, Italy

14:40-14:50 IAC-24/C4/IPB/82413

MODELING, SIMULATION AND TESTING OF AN INNOVATIVE ENGINEERING MODEL WATER-BASED PROPULSION UNIT FOR CUBESATS

Francesco Marino, Italy

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13:30-13:40 IAC-24/C4/IPB/82204

A LEVITATED DISPLACEMENT INTERFEROMETER THRUST STAND FOR CHARACTERIZATION OF PROPELLANTLESS PROPULSION CONCEPTS

Samuel Feldman, United States

13:50-14:00 IAC-24/C4/IPB/91557

NUMERICAL MODEL OF RAREFIED GAS INTERACTION WITH CHARGED PARTICLES

Martin Mačák

14:10-14:20 IAC-24/C4/IPB/91823

INVESTIGATING IGNITION LEAD TIMES ACROSS FUEL VARIATIONS IN HYBRID ROCKET MOTORS

İlknur Akkaya

13:30-14:40 IAC-24/C4/IPB/90623

HYDROLYTIC SPACE PROPULSION: A NEW OPPORTUNITY FOR CUBESAT MISSIONS

Filippo Maggi, Italy

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13:30-13:40 IAC-24/C4/IPB/91444

A SMALL LAUNCHER INCLUDING A DUAL MODE RAMJET AS SECOND STAGE

Lakshmi Narayana Phaneendra Peri

13:40-13:50 IAC-24/C4/IPB/89543

NUMERICAL AND EXPERIMENTAL ANALYSIS OF NEW PROPELLANT FORMULATIONS FOR HYBRID ROCKETS

Antonella Ingenito, Italy

13:50-14:00 IAC-24/C4/IPB/89631

SOLID MICROROCKETS FOR LOW THRUST APPLICATIONS

Antonella Ingenito

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13:50-14:00 IAC-24/C4/IPB/89718

INFLUENCE OF SURFACE AREA AND PROPELLANT MATERIAL ON THE IMPULSE BIT IN ABLATIVE PULSE PLASMA ACCELERATOR

Denis Egoshin, Russian Federation

SCREEN #72

14:00-14:10 IAC-24/C4/IPB/81167

IMPROVING ROCKET NOZZLE EFFICIENCY WITH ROUGH SURFACES

Claudio Antonio Morales Benítez, Mexico

SCREEN #73

14:00-14:10 IAC-24/C4/IPB/91838

DUAL FLAME HOLDER DESIGN FOR ENHANCED EFFICIENCY AND BLOWOUT CONTROL IN LIQUID PROPELLANT ROCKET AFTERBURNERS

Kavya Dichwalkar

SCREEN #75

13:30-13:40 IAC-24/D2/IPB/82563

LOW-THRUST MINIMUM-TIME ORBITAL TRANSFER USING PICARD-CHEBYSHEV HOMOTOPY METHOD

Syed Shan Ali Shah, China

13:40-13:50 IAC-24/D2/IPB/85895

PRELIMINARY DESIGN AND MISSION ANALYSIS FOR THE ASCENT PHASE OF A SINGLE-STAGE-TO-ORBIT VEHICLE

Roberta Fusaro, Italy

13:50-14:00 IAC-24/D2/IPB/89885

COLOMBIAN AEROSPACE LAUNCH SYSTEM (SILAC)

David Andres Diaz Alvarez, Colombia

14:00-14:10 IAC-24/D2/IPB/83243

CONVERSION OF A TWO-STAGE EXPENDABLE ROCKET INTO A REUSABLE SYSTEM AND ANALYSIS OF ITS RE-ENTRY DYNAMICS

Alessandro Mazzone

14:10-14:20 IAC-24/D2/IPB/84361

A TRANSFORMATIONAL NATIONAL SECURITY SPACE LAUNCH STRATEGY FOR ONBOARDING NEW COMMERCIAL LAUNCH SYSTEMS

Akhil Gujral, United States

14:40-14:50 IAC-24/D2/IPB/88991

A CONCEPTUAL DESIGN TOOL FOR PRELIMINARY SIZING OF SUBORBITAL TRANSATMOSPHERIC VEHICLES

Giulio Avanzini, Italy

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13:30-13:40 IAC-24/D2/IPB/86015

NAVIGATING THE SPACE MAZE: OPTIMIZING LAUNCH SERVICE SELECTION

Zahra Imanova

13:40-13:50 IAC-24/D2/IPB/90323

SENSORS HYBRIDIZATION FOR DISTRIBUTED LAUNCHER SYSTEM NAVIGATION DEVELOPMENT: FIRST RESULTS OF THE NIBBIO PROJECT

Tommaso Pantalani

13:50-14:00 IAC-24/D2/IPB/87227

COMPUTATIONALLY EFFICIENT LANDING GUIDANCE FOR REUSABLE ROCKET

Cong Zhou, China

14:00-14:10 IAC-24/D2/IPB/91483

FROM DREAM TO REALITY: ASSESSING THE PRACTICALITY OF HYPERSONIC TRANSPORTATION

Yuvanesh Naveen, India

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14:10-14:20 IAC-24/D2/IPB/84285
REAL-TIME ADAPTIVE APOGEE PREDICTION FOR A SUBORBITAL STUDENT ROCKET
Jack Johnston

14:40-14:50 IAC-24/D2/IPB/88150
COMPREHENSIVE SIMULATION OF ROCKET FLIGHT TRAJECTORIES WITH ACTIVE CANARD CONTROL FOR DESCENT PATH CORRECTION
Ahmet Nuri Yilmaz

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13:30-13:40 IAC-24/D2/IPB/81667
FROM MYTH TO REALITY: THE SEA DRAGON'S REBIRTH AS EARTH'S ZERO-DEBRIS LAUNCH TITAN
Joachim Imran Reinhold, Germany

13:40-13:50 IAC-24/D2/IPB/90354
FROM LUNAR ORBITAL PLATFORM-GATEWAY TO INTERPLANETARY TRANSPORT SPACECRAFT-GETAWAY (M-ITS DEVELOPMENT UPDATE 2024)
Rok Kete, Slovenia

14:10-14:20 IAC-24/D2/IPB/90313
REQUIREMENT TO THRIVE: EMBRACING THE NEW ERA IN NEW SPACE - A DIGITALIZATION APPROACH TO LAUNCH PROCESSES AND MANAGEMENT
Ceyda Yarimbatman

14:30-14:40 IAC-24/D2/IPB/84280
FEASIBILITY ANALYSIS OF AN INNOVATIVE CANNON-BASED LAUNCH SYSTEM FOR ORBITAL INJECTION
Davide Cozzi, Italy

14:40-14:50 IAC-24/D2/IPB/87409
STANDARD DOCKING INTERFACE DEVELOPMENT FOR ESA'S POC1 MISSION
Isacco Pretto, Italy

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13:30-13:40 IAC-24/E3/IPB/91160
THE BOOMING GLOBAL SPACE MARKET AND THE DEMAND FOR INTERNATIONAL SPACE REGULATION-ARBITRATION ALIGNMENT
I. Pessoa-Lopes, Portugal

13:50-14:00 IAC-24/E3/IPB/89637
AVOIDING THE KESSLER SYNDROME: PERSPECTIVE ON IMPLEMENTATION OF TAX MEASURES ON PAYLOAD LAUNCHES INTO LOW EARTH ORBIT AND SUSTAINABLE DEVELOPMENT OF LEO
Jakub Leś, Poland

14:00-14:10 IAC-24/E3/IPB/88841
INTERNATIONAL COOPERATION IN USING SPACE FOR SUSTAINABLE DEVELOPMENT: THE "SPACE2030" AGENDA
Leyla Hasanova

14:10-14:20 IAC-24/E3/IPB/90978
SPACE BASED DATA POLICIES AND THE NEW CHALLENGES OF OPEN DATA AND BIG DATA
Philippe Clerc, France

14:20-14:30 IAC-24/E3/IPB/91063
ON THE SIGNIFICANT BENEFITS OF OPEN SOURCE AS OBSERVED IN OTHER INDUSTRIES THAT THE SPACE SECTOR DOES NOT BENEFIT OF – YET – AND WHY
Sebastian M. Ernst, Germany

14:30-14:40 IAC-24/E3/IPB/84718
THE SPACE LAW BODY AND PRIVATE LUNAR ACTIVITIES: THE CASE OF LUNAR RESOURCES UTILISATION.
Giulia Bordacchini

14:40-14:50 IAC-24/E3/IPB/90097
FOSTERING INNOVATIVE EARTH OBSERVATION SOLUTIONS THROUGH COMMERCIALISATION: ESA'S ZERO-EQUITY FUNDING PROGRAM
Domenico Barretta, Italy

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13:40-13:50 IAC-24/E5/IPB/84617
DEVELOPMENT OF DIGITAL SIMULATION OF LUNAR ENVIRONMENT FOR LUNAR HABITAT DESIGN
Kim Hansaem, Korea, Republic of

14:00-14:10 IAC-24/E5/IPB/82915
MODULAR SPACE MANUFACTURING CONCEPTS AND ARCHITECTURES FOR A DEEP SPACE CIS-LUNAR INFRASTRUCTURE
Paolo Mangili, United States

14:20-14:30 IAC-24/E5/IPB/86894
IN-BETWEEN: RETHINKING HABITABILITY IN LUNAR ENVIRONMENTS
Mariapia Mammìno, Italy

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13:40-13:50 IAC-24/E5/IPB/86091
«PROPOSITION FOR MODULAR SPACE HABITAT»
Christina Balomenaki, Greece

13:50-14:00 IAC-24/E5/IPB/84602
MEXICO'S JOURNEY IN SPACE EXPLORATION: A HISTORICAL REVIEW AND FUTURE PROSPECTS
Diana Guzmán, Mexico

14:10-14:20 IAC-24/E5/IPB/83712
HOUSE – HABITATIONS ORGANISATION FOR HUMAN SETTLEMENT IN EXTRATERRESTRIAL ENVIRONMENT. AN AUTOMISED AND PERFORMANCE DRIVEN FRAMEWORK OF MODULAR UNITS LAYOUT GENERATION.
Zhelun Zhu, China

14:30-14:40 IAC-24/E5/IPB/88737
MODULAR LUNAR VILLAGE CONCEPT DESIGN FOR LONG-TERM HABITATION LOCATED IN LAVA TUBE
Xinle Tian, China

SCREEN #81

13:40-13:50 IAC-24/E5/IPB/88568
EXTENDED REALITY FOR HUMAN-ROBOT COLLABORATION IN LUNAR CONSTRUCTION: A PRISMA SYSTEMATIC REVIEW
Albert Rajkumar, Australia

13:50-14:00 IAC-24/E5/IPB/84530
LUNAR CONCRETE WITH VISUAL INDICATOR OF RADIATION DAMAGE
Marcos Francisco Esparza Posadas, Mexico

14:00-14:10 IAC-24/E5/IPB/81840
ROCKET REALITIES: NAVIGATING SOCIAL AND ECOLOGICAL TRIALS IN THE NEW SPACE ERA
Casey Domingo, Australia

14:20-14:30 IAC-24/E5/IPB/86733
NOMADIC SETTLEMENTS: FUTURE MARS EXPLORATION WITH ANT-INSPIRED SWARM ROBOTS
Isadora Frutuoso, Ireland

14:40-14:50 IAC-24/E5/IPB/91152
ANALOGUE MISSIONS IN THE MALDIVES: CONCEPTS, LIMITATIONS, AND OPPORTUNITIES
Louis Le Breuille, United Kingdom

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THE STATE OF USER-CENTERED DESIGN IN THE SPACE DOMAIN THROUGH A LITERATURE SCAN OF THE PAST IAF PUBLICATIONS.
Aleksandra Kozawska, Poland

14:20-14:30 IAC-24/E6/IPB/84043

A COMPREHENSIVE STUDY OF THE ENTREPRENEURIAL ECOSYSTEM IN INDIA: SPACE TECHNOLOGY LANDSCAPING
Darpan Byahatti, India

14:30-14:40 IAC-24/E6/IPB/86068

STUDENT ASSOCIATIONS AS AN INNOVATION CATALYST FOR COMPANIES AND START-UPS: THE POLISPACE CASE
Giorgio Crescenzo, Italy

14:40-14:50 IAC-24/E6/IPB/84843

REASSESSING INTELLECTUAL PROPERTY RIGHTS IN LUNAR EXPLORATION
Giulia Bordacchini, Italy

SCREEN #83

13:30-13:40 IAC-24/E6/IPB/91130

THE AFTERMATH ON EUROPEAN STRATEGIC AUTONOMY OF THE GATEKEEPING POWER OF U.S. BIG PRIVATE SPACE CORPORATIONS.
Costanza Ludovica Crivelli Visconti, Austria

13:40-13:50 IAC-24/E6/IPB/90872

INNOVATIVE PARTNERSHIP: FOSTERING UNIVERSITY RELATIONS FOR FUTURE SUCCESS
mariana almeida, Brazil

13:50-14:00 IAC-24/E6/IPB/82483

EMERGING PRACTICES IN NORTH AFRICA FOR POTENTIAL PARTNERSHIPS IN THE SPACE INFRASTRUCTURES : THE EXAMPLES OF SPACE PORTS
Djamel Metmati, France

14:00-14:10 IAC-24/E6/IPB/91620

LEADERSHIP'S ROLE IN WOMEN'S EMPOWERMENT IN THE SPACE INDUSTRY. INSIGHTS FROM THE WOMEN IN COPERNICUS INITIATIVE
Alina Vizireanu

14:10-14:20 IAC-24/E6/IPB/86612

FROM LAB TO MARKET: UNLOCKING THE COMMERCIALIZATION POTENTIAL OF UNIVERSITY-BASED SPACE TECHNOLOGY RESEARCH FOR SUSTAINABLE DEVELOPMENT IN ASIA
Ron Chiong, Hong Kong

14:20-14:30 IAC-24/E6/IPB/86526

THE BLUE-SKY APPROACH: A UNIQUE INNOVATION METHOD IN HERITAGE SPACE ORGANIZATIONS
Ryan Udell, United States

14:40-14:50 IAC-24/E6/IPB/80967

SPACE FOR BUSINESS VS SPACE FOR SCIENCES
Dharshun Sridharan, Australia

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13:30-13:40 IAC-24/E6/IPB/86521

FORESIGHT FOR ENHANCING THE MEXICAN SPACE SECTOR: CRITICAL UNCERTAINTIES, SCENARIOS, AND PUBLIC-PRIVATE PARTNERSHIPS
Kaori Becerril, Mexico

13:40-13:50 IAC-24/E6/IPB/85362

SPACE TECH REPORT: UNVEILING THE METHODOLOGY TO ESTABLISH A KEY TOOL FOR SPACE SECTOR ANALYSIS
Beatrice Sigurtà, Italy

14:20-14:30 IAC-24/E6/IPB/88033

HOW YOUNG PROFESSIONALS CAN MAKE A BIG IMPACT IN A HERITAGE ORGANIZATIONS.
Kojo Sarkodie, United States

14:40-14:50 IAC-24/E6/IPB/91714

UNVEILING NASA'S AGILE PROJECTS, SUCCESSSES, CHALLENGES, AND TRANSFORMATIVE INSIGHTS
Jon Holladay

SCREEN #85

13:30-13:40 IAC-24/E9/IPB/88349

TACKLING THE LEGAL AND POLICY HURDLES OF ACTIVE DEBRIS REMOVAL: ADDRESSING THE USE OF AI AND AUTONOMOUS TECHNOLOGIES.
Mila Spence, United Kingdom

13:40-13:50 IAC-24/E9/IPB/88943

SPACE MINING - AN ECONOMIC BOON, BUT A POTENTIAL RISK TO SPACE SUSTAINABILITY: SETTING OUT LEGAL CONSIDERATIONS OF DEBRIS GENERATED BY SPACE MINING
Scott Scoular, United Kingdom

13:50-14:00 IAC-24/E9/IPB/84369

JAPAN'S SSA/SDA POLICY AND INTERNATIONAL COOPERATION IN THE NEW NATIONAL SECURITY ENVIRONMENT
Kota Umeda, Japan

14:00-14:10 IAC-24/E9/IPB/84786

BEYOND JUST RULES: HOW TO INCENTIVISE AND INSPIRE THE RESPONSIBLE AND SUSTAINABLE USE OF SPACE
Vicky Anderson, United Kingdom

14:10-14:20 IAC-24/E9/IPB/89165

NAVIGATING THE DEBRIS FIELD: A RISK ASSESSMENT OF ASAT TESTING ON OUTER SPACE SUSTAINABILITY
Federico Bonarota, Italy

14:20-14:30 IAC-24/E9/IPB/91474

CYBERSECURITY IN COSMIC SPACE
Narmina Gahirmanova, Azerbaijan

14:30-14:40 IAC-24/E9/IPB/90650

ANALYSIS AND INDUSTRIAL INSIGHTS FOR DEVELOPING SAFE RENDEZVOUS AND PROXIMITY OPERATIONS STANDARDS
Diya Jose

14:40-14:50 IAC-24/E9/IPB/80995

THE EVOLVING PRINCIPLES OF DUE REGARD AND SPACE GOVERNANCE: HAZARDOUS RISK AND HARM INHERENT TO SPACE AS INDEPENDENT VARIABLE
Sanghoon Lee

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13:30-13:40 IAC-24/E9/IPB/88519

ARE NORMS OF RESPONSIBLE BEHAVIOR COMPATIBLE WITH (SPACE)POWER COMPETITION BETWEEN STATES?
Beatrice Hainaut, France

13:40-13:50 IAC-24/E9/IPB/88435

THE ROLE OF INTERNATIONAL DISCUSSION FORUMS IN FOSTERING A COHERENT AND COMPREHENSIVE APPROACH TO NORMS OF RESPONSIBLE BEHAVIOR.
Beatrice Hainaut, France

13:50-14:00 IAC-24/E9/IPB/91716

ZERO DEBRIS CHARTER: IS IT SOFT LAW ENOUGH FOR SPACE SUSTAINABILITY?
Paula Silveira

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TECHNICAL SESSIONS BY SYMPOSIUM

Thursday 17 October 2024

14:00-14:10 IAC-24/E9/IPB/87986

LIABILITY INSURANCE AS A PREVENTIVE TOOL IN THE DEBRIS MITIGATION STRATEGY

Katarzyna Malinowska, Poland

14:10-14:20 IAC-24/E9/IPB/90879

LIABILITY ASPECTS OF ACTIVE DEBRIS REMOVAL: PERSPECTIVES FROM THE LAW OF THE SEA

David Eagleson, United Kingdom

14:20-14:30 IAC-24/E9/IPB/90467

SP(Е)ACE: MAPPING THE PATH OF GROWING SPACE MILITARIZATION AND WEAPONIZATION

Gaia Ravazzolo, Italy

14:30-14:40 IAC-24/E9/IPB/84585

THE POLLUTING POTENTIAL OF SPACE DEBRIS DEMISE IN THE ATMOSPHERE: TRENDS AND PATHS TOWARDS SPACE SUSTAINABILITY

José Pedro Ferreira, United States

14:40-14:50 IAC-24/E9/IPB/91352

BEYOND NATIONALISM: A CALL FOR UNIFIED GOVERNANCE IN THE NEW SPACE AGE

Omar Reyes, Mexico

SCREEN #87

13:30-13:40 IAC-24/E10/IPB/90193

ASSESSING INTERNATIONAL COOPERATION FOR PLANETARY DEFENSE: A COMPARATIVE ANALYSIS OF SPACE POLICY FRAMEWORKS

Fotios Kotzakioulafis, Germany

13:40-13:50 IAC-24/E10/IPB/88631

WHERE ARE WE NOW AFTER DART?: AN ANALYSIS OF CURRENT STATUS OF PLANETARY DEFENSE TECHNOLOGIES AND POLICIES?

Erin Austen, Canada

14:40-14:50 IAC-24/E10/IPB/88564

IMAGE-BASED MULTI-TARGET TRACKING FOR ASTEROID AND DEBRIS AFTER A KINETIC IMPACT

Fangyuan Shi, China

SCREEN #88

13:30-13:40 IAC-24/E11/IPB/81983

MILO INSTITUTE AMBASSADORS: A MODEL FOR CONNECTING SPACE ECOSYSTEMS

Kirsten Armstrong, United States

13:40-13:50 IAC-24/E11/IPB/89117

THE ROLE OF LATIN AMERICAN IN SPACE GOVERNANCE: IS THERE A PLACE FOR A LATIN AMERICAN SPACE AGENCY?

Thaís Zandoná, Brazil

14:00-14:10 IAC-24/E11/IPB/91004

DESIGNING THE FUTURE: A COMPREHENSIVE ECOSYSTEM FOR SPACE STARTUPS

Salman Ali Thepdawala, Austria

14:10-14:20 IAC-24/E11/IPB/90366

LEVERAGING THAILAND SPACE ECOSYSTEM BY DEVELOPING SPACE-GRADE SOLAR PANELS LOCALLY.

Teerapat Charoenpru, Thailand

14:30-14:40 IAC-24/E11/IPB/82313

APPLICATION OF THE MODIFIED SPACE TECHNOLOGY LADDER (MSTL) FRAMEWORK: EVOLUTION OF THE COLOMBIAN SPACE DEVELOPMENT AND FUTURE VISION

JENNY CAROLINA ROBLEDÓ ASENSIO, Colombia

14:40-14:50 IAC-24/E11/IPB/86072

STRATEGY FOR THE ANALYSIS OF NEEDS OF SPACE TECHNOLOGIES AND THEIR APPLICATIONS IN COLOMBIA

Juan Daniel Meneses, Colombia

SCREEN #89

13:30-13:40 IAC-24/E11/IPB/82221

QUADRUPLE HELIX MODEL FOR ADVANCING THE EVOLUTION OF THE SPACE SECTOR IN LATIN AMERICAN COUNTRIES

Leonardo Leyva, Mexico

13:40-13:50 IAC-24/E11/IPB/82324

HOW TO MEXICO HAS BEEN IMPLEMENTED THE PUBLIC USE OF SATELLITE INTERNET

Itzel Rocillo, Mexico

14:00-14:10 IAC-24/E11/IPB/82095

AFRICAN NATIONS IN THE SPACE SECTOR: EXPLORING PRIORITIES ACROSS THE SPACE VALUE CHAIN

Osvaldo Porto

14:10-14:20 IAC-24/E11/IPB/82711

'SPACE POLITICAL AWARENESS' AND ITS ROLE IN THE EMERGENCE OF NEW SPACE ECOSYSTEMS IN DEVELOPING REGION.

Victoria Valdivia, Chile

14:30-14:40 IAC-24/E11/IPB/82537

SPACE TECHNOLOGIES AS A CATALYST FOR TERRITORIAL AND SOCIOECONOMIC INTEGRATION: THE CASE OF CROATIA

Luisa Santoro, Italy

14:40-14:50 IAC-24/E11/IPB/89526

SPACE ECONOMY: EMERGING SPACE ECOSYSTEMS. CHALLENGES AND OPPORTUNITIES

Shamil Mamedov, Azerbaijan

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SCREEN #1

12:50-13:00 IAC-24/A1/IPB/87921

MODELLING OF HEPATIC ALTERATIONS HEALTH RISKS IN LONG-TERM HUMAN SPACE MISSIONS
Antoni Perez-Poch, Spain

13:00-13:10 IAC-24/A1/IPB/87704

A WEARABLE-BASED SYSTEM TO REDUCE SPACE MOTION SICKNESS BY MULTI-SENSORY PRE-HABITUATION
Carole-Anne Vollette, Switzerland

13:10-13:20 IAC-24/A1/IPB/84205

SYNTHESIZING THE FUTURE OF ASTROPHARMACY: ENABLING ON-DEMAND PROTEIN PRODUCTION IN SPACE THROUGH CELL-FREE SYSTEMS
Marialina Tsinidis

13:20-13:30 IAC-24/A1/IPB/88082

NONVERBAL COMMUNICATION IN ZERO GRAVITY: EXPLORING THE LEGIBILITY AND COMPREHENSION OF AMERICAN SIGN LANGUAGE IN ZERO GRAVITY
Sheila Xu, United States

SCREEN #2

12:50-13:00 IAC-24/A1/IPB/84202

ASTROPHARMACY AND ASTROMEDICINE: INVESTIGATION OF POTENTIAL METHODS FOR MEDICATION PRODUCTION IN LONG-TERM SPACE MISSIONS VIA AN ISS EXPERIMENT
Marialina Tsinidis, United Kingdom

13:00-13:10 IAC-24/A1/IPB/89976

HUMAN PHYSIOLOGY AND HEALTH IN SPACE MISSIONS: CHANGES, EFFECTS, AND COPING STRATEGIES
Nargiz Aliyarli, Azerbaijan

13:10-13:20 IAC-24/A1/IPB/90707

FROM EARTH TO SPACE: EMOTIONAL INTELLIGENCE AND INTERPERSONAL DYNAMICS AMONG ASTRONAUTS
Elza Salimli, Azerbaijan

13:20-13:30 IAC-24/A1/IPB/87873

EXPOSURE TO MARS GRAVITY IS NOT SUFFICIENT TO PROVIDE MITIGATING EFFECTS ON ORTHOSTATIC INTOLERANCE UPON RETURN TO EARTH.
Antoni Perez-Poch

SCREEN 03

13:00-13:10 IAC-24/A1/IPB/90370

PHYSICAL AND MENTAL HEALTHY OF ASTRONAUTS
Vusale Kazimova, Azerbaijan

SCREEN #4

12:50-13:00 IAC-24/A2/IPB/85282

MICROALGAE CULTIVATION FACILITY WITH INTEGRATED RAMAN SPECTROSCOPY: A PATH TOWARDS OPTIMIZED BIOPRODUCTION IN MICROGRAVITY
Vaclav Havlicek, Czech Republic

13:00-13:10 IAC-24/A2/IPB/89827

ORBITAL'S ASTROBOT: A NOVEL APPROACH TO MANUFACTURING LARGE ANTENNAS IN SPACE
Irma Moran, United States

13:10-13:20 IAC-24/A2/IPB/89032

COMPACT GERMPASM BANK (CGB): A TOOL TO ASSIST IN MICROGRAVITY STUDIES OF IN VITRO PLANTS IN SPACE AND ON EARTH.

Paulo Rodrigues, Brazil

13:20-13:30 IAC-24/A2/IPB/91597

GAUGE SYMMETRY AND PARTICLE COHERENCE IN LOOP QUANTUM GRAVITY BLACK HOLE EMISSION
Swapnil Singh

SCREEN #5

12:50-13:00 IAC-24/A3/IPB/90456

NAVIGATING THE COMPLEXITIES OF INTERSTELLAR DEEP SPACE
Swapnil Singh, India

13:00-13:10 IAC-24/A3/IPB/90645

A FEDERATED, SELF-SCALING ARCHITECTURE FOR THE LUNAR INTERNET OF SATELLITES
Guillaume Brault, France

SCREEN #6

12:50-13:00 IAC-24/A3/IPB/85083

EARTH TO MARS INTERPLANETARY TRANSFER TRAJECTORY DESIGN FOR LAUNCH OF A KOREAN MARS ORBITER
SANG-WOOK KANG, Korea, Republic of

13:00-13:10 IAC-24/A3/IPB/84950

PERFORMANCE ANALYSIS OF LANDMARK EXTRACTION BY FLIGHT ALTITUDE FOR EFFECTIVE TERRAIN RELATIVE NAVIGATION ON MARS
Jae-In Kim, Korea, Republic of

13:10-13:20 IAC-24/A3/IPB/86529

COMMUNICATION SYSTEM DEVELOPMENT FOR KOREA MARS ORBITER MISSION
Joongpyo Kim, Korea, Republic of

13:20-13:30 IAC-24/A3/IPB/83813

THE STUDY ON THE LONGTERM ROADMAP AND INITIAL SIZING ON MARS DRONE(HELICOPTER) OF KOREAN MARS EXPLORATION
Deog-Kwan Kim, Korea, Republic of

SCREEN #7

12:50-13:00 IAC-24/A3/IPB/84553

ORBITER PAYLOAD COMPOSITION STRATEGY FOR MARS EXPLORATION
Byounggyun Lim, Korea, Republic of

13:00-13:10 IAC-24/A3/IPB/82810

A MULTI-FACETED EXPLORATION OF POTENTIAL LIFE-HOLDING ENVIRONMENTS IN OUTER SPACE: UNVEILING THE TAPESTRY OF HABITABILITY BEYOND EARTH
Mahima Gehlot, India

SCREEN #8

12:50-13:00 IAC-24/A3/IPB/85977

DYNAMICS AND CONTROL OF SMART BOOMERANGS
Davide Di Santis, Italy

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SCREEN #10

12:50-13:00 IAC-24/A3/IPB/83859
DESIGN AND PERFORMANCE ANALYSIS OF A SPHERICAL UGV POWERED BY PENDULUM AND CONTROL MOMENT GYROSCOPES FOR PLANETARY EXPLORATION
Matteo Melchiorre, Italy

SCREEN #11

12:50-13:00 IAC-24/A3/IPB/84670
MACHINE LEARNING MODEL FOR DETECTING THE SHADOWED AREAS ON THE MOON
Reem Senan, Bahrain

13:00-13:10 IAC-24/A3/IPB/84774
DEVELOPMENT AND VALIDATION OF ROBUST CONTROL SOFTWARE FOR LUNAR AND DEEP SPACE MISSIONS
Yusuf Alqattan, Bahrain

SCREEN #12

12:50-13:00 IAC-24/A3/IPB/91455
MAGNETIC CLEANING AND BENEFICIATION OF LUNAR REGOLITH
Masato Adachi, Japan

13:00-13:10 IAC-24/A3/IPB/91065
A MISSION ARCHITECTURE FOR LUNAR ROBOTICALLY BASED REGOLITH INCORPORATED CONSTRUCTION: LUNAR-BRIC.
Julia Empey, Canada

SCREEN #14

13:00-13:10 IAC-24/A3/IPB/88502
EXPLORING THE PRACTICAL APPLICATION OF MINERALOGICAL DATA OBTAINED FROM HYPERSPECTRAL MAPS OF MARS
Ekaterina Faber, Russian Federation

SCREEN #19

13:20-13:30 IAC-24/A4/IPB/91807
THE PLANETARY CLASSIFICATION CATALOGUE – PLANETARY CLASSIFICATION BY HABITABILITY, THROUGH THE CREATION OF SOFTWARE, CHARACTERISATION OF EXOPLANETS AND A CATALOGUE OF CELESTIAL BODIES, NAMED THE PLANETARY CLASSIFICATION CATALOGUE.
Mélissa Azombo

SCREEN #20

12:50-13:00 IAC-24/A5/IPB/87978
COSMICA PROJECT: ADVANCING ASTRONAUT SURVIVAL AND WELL-BEING THROUGH MICROALGAE-BASED DESIGN
Luigi Renzulli, Italy

13:20-13:30 IAC-24/A5/IPB/87728
USING A MODEL BASED SYSTEM ENGINEERING APPROACH FOR THE DESIGN OF LUNAR MISSIONS TO TEST AND VALIDATE KEY TECHNOLOGIES AND CAPABILITIES IN PREPARATION FOR FUTURE HUMAN EXPLORATION OF MARS
Alfredo Gili, Italy

SCREEN #22

13:20-13:30 IAC-24/A5/IPB/88562
PROSPECTS OF ARTIFICIAL INTELLIGENCE APPLICATION FOR FINDING OPTIMAL SCENARIOS OF SUSTAINABLE DEVELOPMENT ON THE MOON AND MARS.
Ekaterina Faber, Russian Federation

SCREEN #24

13:00-13:10 IAC-24/A6/IPB/82746
MACHINE LEARNING TO IMPROVE TWO-LINE ELEMENT ANALYSIS UTILIZING ANALYTIC CONTINUATION PROPAGATED FRAGMENTS
Katharine Larsen, United States

SCREEN #25

13:20-13:30 IAC-24/A6/IPB/91089
ASI-SDLR: A SPACE DEBRIS LASER RANGING STATION WITH ADVANCED ADAPTIVE OPTICS
Roberto Biasi, Italy

SCREEN #26

13:00-13:10 IAC-24/A6/IPB/90608
POST-DOCKING SPACECRAFT SYSTEM IDENTIFICATION TO ENHANCE STACK ATTITUDE CONTROL
Giordano Benedetto Ugoli

SCREEN #27

13:00-13:10 IAC-24/A7/IPB/90885
USE OF ADDITIVE MANUFACTURING TECHNOLOGY AND QUALIFICATION APPROACH IN HEPD-02 INSTRUMENT
Marianna Rinaldi

13:10-13:20 IAC-24/A7/IPB/81410
STEP II: PRECISION NARROW-ANGLE SPACE ASTROMETRY MISSION ON SAIL
Ding Chen, China

SCREEN #28

13:00-13:10 IAC-24/B1/IPB/88293
PEATLANDS' RESTORATION MONITORING THROUGH A CUBESAT MISSION
Marialina Tsinidis, United Kingdom

13:10-13:20 IAC-24/B1/IPB/82820
STUDY OF AUTONOMOUS SATELLITE PLANNING METHODS USING ARTIFICIAL INTELLIGENCE TECHNIQUES
Sigfrido Valentino Bortolotti, Italy

SCREEN #29

13:20-13:30 IAC-24/B1/IPB/82728
MAJOR CHALLENGES AND OPPORTUNITIES TO ACCELERATE SPACE-BASED EARTH OBSERVATION ACTIVITIES; A CASE STUDY OF TÜRKİYE
Tamer Özalp, Türkiye

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SCREEN #30

13:20-13:30 IAC-24/B1/IPB/83307
HIGH DATA VOLUME/THROUGHPUT PDT SYSTEM TASKS FOR NEXT GENERATION COPERNICUS MISSIONS
Giovanni Galiero, Italy

SCREEN #31

12:50-13:00 IAC-24/B2/IPB/89053
DIGITAL C-BAND QPSK TRANSMITTER DESIGN USING SPARTAN-7 FPGA WITH ONBOARD DATA RATE RECONFIGURABILITY FOR CUBESATS
Sirash Sayanju

13:00-13:10 IAC-24/B2/IPB/90077
IONOSPHERIC TOTAL ELECTRON CONTENT (TEC) FROM GPS RECEIVERS AT KUALA LUMPUR INTERNATIONAL AIRPORT, MALAYSIA
Brelveenraj Kaur Rajwant Singh, Malaysia

SCREEN #32

12:50-13:00 IAC-24/B3/IPB/83662
SPACE ANALOGS: RECORDING, COMPARING AND IMPROVING
Argyro Tsilia, Greece

13:20-13:30 IAC-24/B3/IPB/89891
ANALYSIS OF ASTRONAUT TRAINING METHODS AND TECHNIQUES
Avid Roman-Gonzalez

SCREEN #33

12:50-13:00 IAC-24/B4/IPB/88032
BOOSTING SPACE RESEARCH IN MEXICO: DESIGN AND IN-ORBIT VALIDATION OF AN ENVIRONMENTAL MONITORING SATELLITE
Dulce Fernanda Lopez Salvador, Mexico

13:00-13:10 IAC-24/B4/IPB/86854
DESIGN OF POCKETQUBE FOR OBSERVING NOCTILUCENT CLOUDS (NLCS) IN UV SPECTRUM
Shivam Kumar Singh, Luxembourg

13:10-13:20 IAC-24/B4/IPB/81535
SAGITTA TO SCORPIO: EVOLUTION OF A NEW SPACE STAR TRACKER TO SPACE-QUALIFIED COMPONENT
Alexander Vandenberghe, Belgium

13:20-13:30 IAC-24/B4/IPB/85899
CLIMATE CHANGE MONITORING THROUGH COASTAL CHANGES
Marialina Tsinidis, United Kingdom

SCREEN #34

12:50-13:00 IAC-24/B5/IPB/90961
SPACE APPLICATIONS AT THE SERVICE OF FOOD SECURITY: POLICY RECOMMENDATIONS
Gabriele Redigonda, Italy

13:00-13:10 IAC-24/B5/IPB/84901
INSURTECH MARKET OPPORTUNITIES FOR BUSINESS APPLICATIONS POWERED BY ARTIFICIAL INTELLIGENCE APPLIED ON SATELLITE DATA: NEEDS, OPPORTUNITIES AND USE CASES
Valerio Roscani, Italy

13:10-13:20 IAC-24/B5/IPB/84007
USE OF SATELLITE WIND DATA TO MONITOR DYNAMIC CHANGES IN TURBULENCE FOR AVIATION
Marianna Valente, Italy

SCREEN #35

12:50-13:00 IAC-24/B6/IPB/84881
ENHANCING ROBUSTNESS IN GROUND SEGMENT AS A SERVICE (GSAAS) SCALING UP THROUGH STOCHASTIC MODELING AND BY LEVERAGING ON AUTOMATIC CONFLICT SOLVER
Stefan-Vlad Tudor, Italy

SCREEN #37

12:50-13:00 IAC-24/C4/IPB/87532
EXPERIMENTAL STUDY AND MODELLING OF RISE TIME IN HAN BASED MONOPROPELLANT THRUSTER AND ITS EFFECT ON CHAMBER PRESSURE OSCILLATIONS
Vishal Singh, India

13:00-13:10 IAC-24/C4/IPB/87553
FUNDAMENTAL INVESTIGATION OF MICRO-EXPLOSIVE IN ALUMINUM-LITHIUM ALLOY PARTICLE AT THE ATOMIC SCALE
Yintao Zhou, China

13:10-13:20 IAC-24/C4/IPB/88367
LIFE EVALUATION OF LIQUID ROCKET ENGINE REGENERATIVE COOLING SYSTEM: A COMPARISON OF HARDENING MODELS
matteo crachi, Italy

13:20-13:30 IAC-24/C4/IPB/89938
LOW-COST INNOVATIVE EXPERIMENTAL SETUP FOR ASSESSING LASER-DRIVEN PROPULSION IN NEAR-ULTIMATE VACUUM CONDITIONS
Basel Altawil, United Arab Emirates

SCREEN #38

13:00-13:10 IAC-24/D2/IPB/84453
ENVIRONMENTAL SUSTAINABILITY ASSESSMENT OF SPACE PROJECTS AND VENTURES
Emeline Dulce Paat-Dahlstrom, New Zealand

SCREEN #39

12:50-13:00 IAC-24/D3/IPB/82864
RADIATION SHIELDING FOR LONG-TERM LUNAR SETTLEMENTS WITH REGOLITH AND OTHER ISRU OPTIONS
Lauren Savage, United States

13:00-13:10 IAC-24/D3/IPB/89948
SUSTAINABLE LUNAR SETTLEMENT DESIGN CHARRETTE: OFF-WORLD ANTHROPOLOGICAL SPACE INFRASTRUCTURE SETTLEMENT (OASIS)
Gary Barnhard, United States

13:20-13:30 IAC-24/D3/IPB/89596
SCHUMANN: DESIGN AND DEVELOPMENT OF A FUNCTIONAL SATELLITE MODULE FOR REFUELING APPLICATIONS
Pierre Letier, Belgium

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12:50-13:00 IAC-24/D4/IPB/85660
REGULATORY FRAMEWORKS FOR LUNAR RESOURCES
EXPLOITATION AND INSIGHTS FROM DEEP SEA MINING
PRACTICES
Ilenia Bruseghello, Italy

13:00-13:10 IAC-24/D4/IPB/89897
EXPLORING THE VAST POTENTIAL: OPPORTUNITIES IN SPACE
MINING
Avid Roman-Gonzalez, Peru

SCREEN #41

12:50-13:00 IAC-24/D5/IPB/90971
QUANTUM TECHNOLOGIES FOR SAFE SPACE COMMUNICATION
Nigar Safarova

13:10-13:20 IAC-24/D5/IPB/83448
STAKEHOLDERS' FRAMEWORK, A SUCCESSFUL OUTCOME AND
RISK PERCEPTION FACTORS TO DEFINE RISK TOLERABILITY
LIMITS FOR LONG-TERM MARS COLONIES, DESIGN AND
OPERATION.
Szymon Matkowski, Poland

SCREEN #42

12:50-13:00 IAC-24/E1/IPB/91168
IMPACT OF ANTI-COLONIAL PRACTICE IN SPACE EXPLORATION
ON THE SUSTAINABLE, EQUITABLE DEVELOPMENT ON EARTH
Judy Park, United States

13:00-13:10 IAC-24/E1/IPB/83283
SPACE FOR SPACE
Anita Alfano, Italy

13:20-13:30 IAC-24/E1/IPB/88267
EDUCATIONAL STRATEGIES FOR PROMOTION OF SOLAR POWER
SATELLITE TECHNOLOGY
Simon Maillot, France

SCREEN #43

12:50-13:00 IAC-24/E1/IPB/82219
CONNECTING THE WORLD THROUGH THE APRSAF ONLINE AND
ONSITE STARGAZING EVENT
Hiroko Tsuzuki

13:10-13:20 IAC-24/E1/IPB/91375
PIONEERING NAVIGATION: THE SPECIALIZED MS GNSS
PROGRAM AT INSTITUTE OF SPACE TECHNOLOGY, PAKISTAN
Najam Naqvi

13:20-13:30 IAC-24/E1/IPB/82022
THE ASTRA PROGRAM: SPEARHEADING PEER-LED WORKFORCE
DEVELOPMENT IN AUSTRALIA'S SPACE SECTOR
Georgina Coddington, Australia

SCREEN #44

12:50-13:00 IAC-24/E1/IPB/85482
THE DISTRETTO VIRTUALE - ASI TOP SCORER 2023 RANKING.
A CHALLENGE TO THE WIDE AUDIENCES TO PROJECT
TECHNOLOGICAL IDEAS IN AND OUT OF THE SPACE
ENVIRONMENT
Giacomo Primo Sciortino

13:20-13:30 IAC-24/E1/IPB/84911
THE ENTREPRENEUR DU PROGRAMME: AN EDUCATIONAL
AND SCALABLE MODEL FOR ENHANCING THE EUROPEAN
ENTREPRENEURIAL ECOSYSTEMS
Valerio Roscani

SCREEN #45

12:50-13:00 IAC-24/E2/IPB/87474
INVESTIGATION ON THERMAL BEHAVIOUR OF A RF HELICON
PLASMA THRUSTER WITH COUPLED ELECTROMAGNETIC AND
THERMAL MODELS
Christopher Vogt

13:00-13:10 IAC-24/E2/IPB/84958
OPTICAL AND LIDAR SYSTEM FOR ON-ORBIT \\
SPACE DEBRIS DETECTION
Emilio Juarez, Italy

13:10-13:20 IAC-24/E2/IPB/86604
ADVANCED POWER BUDGET ESTIMATION THROUGH MULTI-
DOMAIN SIMULATION FOR A 1U CUBESAT
Angelo Boceda

13:20-13:30 IAC-24/E2/IPB/85285
JAMSAIL: A CUBESAT DEMONSTRATION MISSION FOR GNSS
INTERFERENCE MAPPING AND A REFRACTIVE SOLAR SAIL
Luis Cormier

SCREEN #46

12:50-13:00 IAC-24/E3/IPB/88000
FUTURE PROSPECTS OF SPACE TOURISM SUSTAINABILITY BASED
ON CURRENT STATUS AND AVIATION TOURISM DEVELOPMENT
HISTORY
Eva Yi-Wei Chang, Korea, Republic of

13:00-13:10 IAC-24/E3/IPB/80791
ADDRESSING OUTER SPACE ACTIVITIES AS A PUBLIC CONCERN:
COMPARATIVE EXPERIENCES IN LATIN AMERICA REGARDING THE
INTEGRATION OF OUTER SPACE ACTIVITIES INTO THE PUBLIC
AGENDA
Victoria Valdivia, Chile

13:10-13:20 IAC-24/E3/IPB/85721
THE FUTURE OF SPACE EXPLORATION AND INNOVATION
Azer İsmayilzade

13:20-13:30 IAC-24/E3/IPB/83396
WOMEN, SPACE LAW AND POLICY, AND THE SDGS: PAVING THE
PATH FOR A BETTER TOMORROW
Ishita Das, India

SCREEN #47

12:50-13:00 IAC-24/E5/IPB/90981
FEAR AND HOPE IN SPACE STORYTELLING: WHAT SCIENCE
FICTION CAN TELL US ABOUT PUBLIC VIEWS ON SPACE.
Leah Farrar, United States

13:00-13:10 IAC-24/E5/IPB/89220
COMMERCIAL SPACE SUIT R&D CENTER ASTRAX WAER LAB" 2024
Taichi Yamazaki, Japan

13:10-13:20 IAC-24/E5/IPB/87956
INHABIT:SPACE - NOTES ON HABITABILITY FROM EARTH TO
SPACE AND VICE VERSA
Giacomo D'Amico, Italy

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SCREEN #48

13:00-13:10 IAC-24/E7/IPB/84106
LEGAL PROTECTION OF DATA IN INTERNATIONAL COOPERATION OF CHINA'S SPACE STATION - EXPERIENCES AND COMPARISONS FROM ISS
yunping Liu, Italy

13:10-13:20 IAC-24/E7/IPB/89263
REGISTRATION IN THE 21ST CENTURY - ENSURING ADEQUATE REGISTRATION UNDER THE EXISTING LEGAL REGIME
Martin Reynders, Germany

13:20-13:30 IAC-24/E7/IPB/81124
(TAXING) TO THE MOON AND BACK
Erika Isabella Scuderi, Austria

SCREEN #49

13:00-13:10 IAC-24/E9/IPB/88327
POLICY CONSIDERATIONS AND RECOMMENDATIONS FOR SPACE TRAFFIC MANAGEMENT OF LOW LUNAR ORBIT
Courtney Kirkpatrick, United States

13:10-13:20 IAC-24/E9/IPB/83122
INTRODUCING SPACE FOOTPRINT: CASE STUDY ON THE SUSTAINABILITY OF GEO RESOURCE
Gurpreet Singh, Canada

SCREEN #51

12:50-12:58 IAC-24/B2/IPB/88888
A PHYSIC-INFORMED NEURAL NETWORK-BASED THRUST MODELING AND ORBIT DETERMINATION METHOD FOR LOW THRUST SPACECRAFT PROPULSION
Ai Gao

12:58-13:06 IAC-24/C1/IPB/88540
GLOBAL TRAJECTORY OPTIMIZATION WITH ALPHAZERO: A NOVEL APPROACH APPLIED TO THE GTOC 11 CHALLENGE
Andrea Forestieri, Italy

13:06-13:14 IAC-24/A2/IPB/86712
EFFECT OF CORROSION PROCESSES ON THE PERFORMANCE OF SCREEN PHASE SEPARATORS IN REUSABLE SPACE SYSTEMS WITH LONG SERVICE LIFE
Anatolii Lohvynenko, Ukraine

13:14-13:22 IAC-24/D1/IPB/86185
OPEN-SOURCE SOFTWARE SUITE FOR EFFECTIVE SPACECRAFT RESEARCH AND DEVELOPMENT: INTRODUCTIONS AND CASE STUDIES
Satoshi Ikari, Japan

SCREEN #52

12:50-12:58 IAC-24/A2/IPB/91831
A COMPUTATIONAL ANALYSIS OF EFFECTS OF MICROGRAVITY ON A BIO FABRICATED BONE
Arjun Dabas

12:58-13:06 IAC-24/E2/IPB/89879
CLUSTER SPACECRAFT INTENT RECOGNITION UNDER MULTI-MODE MANEUVERS
Xuduo Tong

13:06-13:14 IAC-24/C1/IPB/90631
DESIGN, TEST, AND VERIFICATION OF A REACTION WHEEL FOR CUBESATS
Zayed Alkatheeri, United Arab Emirates

13:14-13:22 IAC-24/E2/IPB/87229
STRATEGIC PROJECT MANAGEMENT IN STUDENT-LED CUBESAT MISSIONS: A COMPREHENSIVE ANALYSIS AND ENHANCEMENT FRAMEWORK
Maxime Dargent

SCREEN #53

12:50-12:58 IAC-24/B2/IPB/83257
INTEGRATION AND TESTING CAMPAIGN OF AN EDUCATIONAL SATELLITE GROUND STATION
Luisa Iossa

12:58-13:06 IAC-24/D1/IPB/89529
STATE OBSERVER-BASED FINITE-TIME SLIDING MODE CONTROL FOR SPACECRAFT SIX-DEGREE-OF-FREEDOM CLOSE-PROXIMITY UNDER SAFE CONSTRAINT
Hao Guo, China

13:06-13:14 IAC-24/A5/IPB/83601
TERRARIUMS: BUILDING PERMANENT SUSTAINABLE ECOSYSTEMS
Amirmohsen Pazireh, Poland

13:14-13:22 IAC-24/C1/IPB/85980
LSTM-BASED FAST PREDICTIVE GUIDANCE FOR AUTONOMOUS SAFE DOCKING WITH PATH AND CONTROL CONSTRAINTS
Kumud Darshan Yadav, Spain

SCREEN #54

12:50-12:58 IAC-24/A4/IPB/81942
THE "OVERFLY OF THE MERIDIANS" EXPERIENCE
Philippe Coue, France

12:58-13:06 IAC-24/A2/IPB/85698
MICROGRAVITY TESTING OF A NEWLY DEVELOPED AIR-BREATHING ELECTROSTATIC THRUSTER
Akram Abdellatif, Germany

13:06-13:14 IAC24 IPB AIDAA-14
Politorbital
Martina Chiacchiaro,

13:14-13:22 IAC-24/A6/IPB/90075
CUBESAT-BASED LASER ABLATION DEBRIS REMOVAL CONCEPT
afnan Malik

SCREEN #55

12:50-12:58 IAC-24/A2/IPB/91231
MACHINE LEARNING OPTIMIZED PROCESS CONTROL AND YIELD OF ARTIFICIAL RETINA IN-SPACE MANUFACTURING
Ioana Cozmata, United States

12:58-13:06 IAC-24/A2/IPB/89988
G-SPACE: AN AI/ML MICROGRAVITY DOE PLATFORM TO ENABLE PROFITABLE IN SPACE MANUFACTURING
Ioana Cozmata

13:06-13:14 IAC-24/E2/IPB/91044
DEVELOPMENT APPROACH TOWARDS THE IN-HOUSE DESIGN, MANUFACTURING, AND TESTING OF AN E-PUMP FOR A STUDENT-LED LIQUID FUELLED REUSABLE SOUNDING ROCKET.
Alessandro Battegazzore

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12:50-12:58 IAC-24/B4/IPB/85763
VCUB1 BRAZILIAN CUBESAT THERMAL VACUUM TESTS CAMPAIGN
Shirley Silva, Brazil

12:58-13:06 IAC-24/C2/IPB/89249
EXPLORING SIC POLISHING FOR ENHANCED LARGE APERTURE OPTICAL SYSTEMS: MATERIAL CHARACTERISTICS AND CRYOGENIC PREPARATION TECHNIQUES
Jeong-Yeol Han, Korea, Republic of

SCREEN #57

12:50-12:58 IAC-24/E1/IPB/91021
ESTABLISHMENT OF NATIONAL CENTER OF GIS & SPACE APPLICATIONS: THE FIRST STEP TOWARDS ACHIEVING THE UN SDGS THROUGH SPACE
Najam Naqvi, Pakistan

SCREEN #58

12:50-12:58 IAC-24/E2/IPB/89905
QHAPAQ ÑAN PROJECT: DEVELOPMENT OF THE ENGINEERING MODEL OF A PAYLOAD FOR THE MEASUREMENT OF THE EARTH'S MAGNETIC FIELD BY APRS COMMUNICATION IN A CUBESAT.
Salvador Eduardo Romero de la Roca, Peru

SCREEN #59

12:50-12:58 IAC-24/D1/IPB/85884
DEVELOPMENT OF AN INTEGRATED MULTI-FIDELITY TOOL FOR THE PRELIMINARY DESIGN OF A SINGLE-STAGE-TO-ORBIT VEHICLE
Tommaso Molinari

SCREEN #60

12:50-12:58 IAC-24/B6/IPB/87703
ENHANCING SPACE MISSION PLANNING EFFICIENCY: A COMPREHENSIVE OVERVIEW OF THE ARGOTEC MISSION PLANNING TOOL AND ITS CORE COMPONENT, EAGLE
Giulia Sala, Italy

SCREEN #61

12:50-12:58 IAC-24/A3/IPB/86182
ARC-CONSISTENCY TEMPORAL CONSTRAINT REASONING METHOD WITH UNCERTAINTY FOR LUNAR ROVERS' MISSION PLANNING
Shizhen Li, China

SCREEN #62

12:50-12:58 IAC-24/B6/IPB/84603
A DISTRIBUTED T-HTN PLANNING METHOD FOR MULTIPLE SPACECRAFT BASED ON TIME INFORMATION HEURISTICS
Bang Wang, China

SCREEN #63

12:50-12:58 IAC-24/B6/IPB/85244
HEURISTIC TASK ALLOCATION METHOD FOR HETEROGENEOUS LUNAR ROBOTS UNDER DYNAMIC RESOURCE COST
Junhui Zhou, China

SCREEN #64

12:50-12:58 IAC-24/B2/IPB/86940
PRESENT AND FUTURE OF LEONARDO ATOMIC CLOCKS FOR SPACE AND GROUND APPLICATIONS
Annamaria Campa, Italy

SCREEN #66

13:14-13:22 IAC-24/E2/IPB/91887
REGIME FOR THE RESOLUTION OF NEAR-SPACE DISPUTES: THE CREATIVE USE OF ADR MECHANISMS
Yiwen Yang

SCREEN #67

12:50-12:58 IAC-24/B5/IPB/90108
EXPERIMENTAL DEMONSTRATION OF WILDFIRE PREVENTION USE CASE THAT INTEGRATES LEO SATELLITES WITH IOT COMMUNICATIONS
Marcel Marin-de-Yzaguirre, Spain

SCREEN #69

13:14-13:22 IAC-24/C2/IPB/89515
AEROSPIKE: MISSION SIMULATION AND OPTIMAL DESIGN
Roberto Carbone

SCREEN #74

12:50-12:58 IAC-24/B1/IPB/90318
LEVERAGING SPACE INFORMATION-SHARING ECOSYSTEMS FOR MARKETPLACE-LIKE CLIMATE ACTION AND SUSTAINABLE DEVELOPMENT
Nathaniel Dailey, United States

SCREEN #77

12:50-12:58 IAC-24/D6/IPB/88868
HOLISTIC SUBORBITAL-SPECIFIC OPERATION RISK ASSESSMENT METHODOLOGY.
Giovanni Di Antonio

SCREEN #82

12:50-12:58 IAC-24/A3/IPB/87552
SPECTROSCOPY ANALYSIS OF MARTIAN ANALOGUE SAMPLES
Caitlin Robertson, The Netherlands

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SCREEN #88

12:58-13:06 IAC-24/B1/IPB/91299
SECURING EARTH OBSERVATION AND RADIO FREQUENCY
SATELLITES: CHALLENGES AND STRATEGIES
Sanjana Niranjana Karkera, India

13:14-13:22 IAC-24/C1/IPB/85291
RCDS-BASED FEEDBACK CONTROL OF A SOLAR SAIL SPACECRAFT
AT THE EARTH-SUN L1 POINT WITH DUAL POINTING
REQUIREMENTS
Hongyi Xie

SCREEN #89

12:50-12:58 IAC-24/B1/IPB/91298
SECURING EARTH OBSERVATION AND RADIO FREQUENCY
SATELLITES: CHALLENGES AND STRATEGIES
Sanjana Niranjana Karkera

13:14-13:22 IAC-24/E6/IPB/91223
ENABLERS AND BARRIERS FOR ENTREPRENEURSHIP IN
DIFFERENT REGIONS
Sanjana Niranjana Karkera

SCREEN #90

13:06-13:14 IAC-24/C1/IPB/86275
SPACECRAFT DYNAMIC WINDOW ATTITUDE PLANNING METHOD
FOR PLANETARY APPROACH DETECTION
CongCong Luo, China

13:14-13:22 IAC-24/D1/IPB/90828
SUNSHADE PRODUCTION IN SPACE: INITIAL ASSESSMENTS FOR
A MODULAR AND SCALABLE IN-SPACE MANUFACTURING AND
ASSEMBLY FACILITY
Mario Butscher, Germany

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6 Technical Papers by Symposium

Technical Papers as of September 2024.

Please check the IAF App to get the latest updates on the Technical Papers.

A1. IAF/IAA SPACE LIFE SCIENCES SYMPOSIUM

Coordinator(s): Peter Graef, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany; Oleg Orlov, Institute of Biomedical Problems (IBMP), Russian Academy of Sciences (RAS), Russian Federation

Support(s): Elena Fomina, State Scientific Center of Russian Federation, Institute of Biomedical Problems, Russian Academy of Sciences, Russian Federation

A1.1. Behaviour, Performance and Psychosocial Issues in Space

October 14 2024, 15:30 — Yellow Hall 2

Co-Chair(s): Nick Kanas, University of California, San Francisco (UCSF), United States; Gro M. Sandal, University of Bergen, Norway

IAC-24.A1.1.1

TEAMS THAT SIRIUSLY GO THE DISTANCE: EFFECT OF ISOLATION AND CONFINEMENT ON TEAM PERFORMANCE
Noshir Contractor, Northwestern University, Evanston, United States

IAC-24.A1.1.2

SOCIAL ACTION RESEARCH: COMPARISON OF EMOTIONAL EXPERIENCE AND PSYCHOLOGICAL STATE OF CREWS SIRIUS-19 AND SIRIUS-21 DURING SIMULATED SPACEFLIGHT
Matylda Klosova, Prague, Czech Republic

IAC-24.A1.1.3

LUNAR COLONIES: PSYCHOLOGICAL AND SOCIOLOGICAL ISSUES
Nick Kanas, University of California, San Francisco (UCSF), San Francisco, CA, United States

IAC-24.A1.1.4

ARCHITECTURAL PROPERTIES' IMPACT ON STRESS AND COGNITION – PRELIMINARY RESULTS FROM A STUDY CONDUCTED ON SPACE ANALOGUES AND THE ISS.
Michail Magkos, Royal Institute of Technology (KTH), Huddinge, Sweden

IAC-24.A1.1.5

PERSONAL VALUES AMONG CREW MEMBERS DURING LONG-DURATION SPACE MISSIONS: TEMPORAL PATTERNS AND IMPLICATIONS FOR CREW TENSION
Gro M. Sandal, University of Bergen, Bergen, Norway

IAC-24.A1.1.6

SPACECRAFT DOCKING PILOTING PERFORMANCE ASSESSMENT BY MEANS OF VIRTUAL REALITY AND EYE-TRACKING A THE SIRIUS-21 SPACE ANALOG
Miquel Bosch Bruguera, Institute of Space Systems, University of Stuttgart, Stuttgart, Germany

IAC-24.A1.1.7

LEADING THE CREW TO MARS: EVIDENCE FROM NASA HERA ANALOG CREWS
Leslie DeChurch, Northwestern University, Evanston, United States

IAC-24.A1.1.8

EXPLORING HUMAN ADAPTATION AND PERFORMANCE DYNAMICS IN DEEP SPACE ANALOGUES: INSIGHTS FROM LUNARES MISSION SIMULATION

Matej Poliacsek, DLR (German Aerospace Center), Bratislava, Slovak Republic

IAC-24.A1.1.9

THE VIRTUAL OVERVIEW EFFECT: EXPLORING THE POTENTIAL OF VIRTUAL REALITY SIMULATIONS OF EARTH-GAZING TO INDUCE AWE AND MEASURABLE CHANGES IN HEART RATE VARIABILITY
Christopher Richardson, International Space University (ISU), Palmyra, United States; David F Guajardo, International Institute for astronautical Sciences (IIAS), Houston, United States

IAC-24.A1.1.10

EXPLORING THE RELATIONSHIP BETWEEN CREW INTERPERSONAL DYNAMICS AND MENTAL WORKLOAD: SIRIUS-21

Wakako Migaki, University of Tsukuba, Tsukuba-shi, Japan; Tsukasa Takahashi, University of Tsukuba, Tsukuba, Japan

A1.2. Human Physiology in Space

October 15 2024, 10:15 — Yellow Hall 2

Co-Chair(s): Elena Fomina, State Scientific Center of Russian Federation, Institute of Biomedical Problems, Russian Academy of Sciences, Russian Federation; Jens Jordan, Institute of Aerospace Medicine (DLR), Germany

Rapporteur(s): Alain Maillet, MEDES - IMPS, France; Angelique Van Ombergen, European Space Agency (ESA), The Netherlands

IAC-24.A1.2.1

NEW ROUTES TO ADVANCE KNOWLEDGE IN MICROGRAVITY RESEARCH: THE ASI RESEARCH PORTFOLIO FOR AX-3
Serena Pezzilli, ASI - Italian Space Agency, Rome, Italy

IAC-24.A1.2.2

DYNAMICS OF THE LEVEL OF FUNCTIONAL RESERVES OF COSMONAUTS IN A LONG SPACE FLIGHT ACCORDING TO THE RESULTS OF THE "INDIVIDUAL STRATEGIES" TEST
Elena Fomina, State Scientific Center of Russian Federation, Institute of Biomedical Problems, Russian Academy of Sciences, Moscow, Russian Federation

IAC-24.A1.2.3

NASA'S HUMAN RESEARCH PROGRAM: EVOLVING COLLABORATIONS TO ENABLE THE FUTURE OF HUMAN SPACEFLIGHT
Jancy McPhee, The Aerospace Corporation, Houston, TX, United States; David Baumann, National Aeronautics and Space Administration (NASA), Johnson Space Center, Houston, United States

IAC-24.A1.2.4

REDUCED POSTURAL STABILITY IN 55- TO 65-YEAR-OLD MEN AND WOMEN EXPOSED TO 14-DAY HEAD-DOWN BED REST
Jeremy Rabineau, University of Waterloo, Waterloo, Canada

IAC-24.A1.2.5

PRECISION HEALTH FOR CHILDREN TAKES FIRST STEPS IN SPACE
Simona Ferraro, Buzzi Children's Hospital, Milan, Italy

IAC-24.A1.2.6

ADVANCED AUDIOLOGICAL TOOLS FOR NON-INVASIVE MONITOR OF INTRACRANIAL PRESSURE IN MICROGRAVITY
Arturo Moleti, Università di Roma "Tor Vergata", Roma, Italy

IAC-24.A1.2.7

ABNORMAL MITRAL VALVE-RELATED PARAMETERS FOLLOWING LONG-DURATION SPACEFLIGHT.

Cyril Tordeur, Université Libre de Bruxelles, Forest, Belgium

IAC-24.A1.2.8

T-MINI MEETS EVERYWEAR: ENHANCING SPACE HEALTH THROUGH SEAMLESS INTEGRATION

Oliver Opatz, Center for Space Medicine Berlin (ZWMB), Berlin, Germany

IAC-24.A1.2.9

VALIDATION AND VERIFICATION OF A CONTINUOUS GLUCOSE MONITOR IN A PRESSURIZED IVA SUIT IN MICROGRAVITY

Shawna Pandya, International Institute for astronautical Sciences (IIAS), Sherwood Park, Canada

IAC-24.A1.2.10

MODIFICATION OF HEMATOPOIETIC NICHE UNDER LONG-TERM SIMULATED MICROGRAVITY IN VITRO

Ludmila Buravkova, State Scientific Center of Russian Federation, Institute of Biomedical Problems, Russian Academy of Sciences, Moscow, Russian Federation

IAC-24.A1.2.11

CARDIAC PARAMETER EXTRACTED DURING DEEP BREATHING AS A POTENTIAL SLEEP APNEA INDICATOR IN CONCORDIA STATION

Paniz Balali, Université Libre de Bruxelles, Bruxelles, Belgium

IAC-24.A1.2.12

LOWER BODY NEGATIVE PRESSURE MAY NOT BE A SUITABLE COUNTERMEASURE FOR SANS

Mimi Lan, Dartmouth College, Hanover, United States

IAC-24.A1.2.13

EFFECTS OF LONG-TERM EXPOSURE TO HYPOBARIC HYPOXIA ON CARDIO-MECHANICAL ACTIVITY: PRELIMINARY RESULTS FROM THE CONCORDIA STATION

Sarah Solbiati, Politecnico di Milano, Milano, Italy

A1.3. Medical Care for Humans in Space

October 15 2024, 15:00 — Yellow Hall 2

Co-Chair(s): Satoshi Iwase, Aichi Medical University, Japan; Oleg Orlov, Institute of Biomedical Problems (IBMP), Russian Academy of Sciences (RAS), Russian Federation

Rapporteur(s): Hasan Birol Cotuk, Türkiye; Katrin Stang, DLR (German Aerospace Center), Germany

IAC-24.A1.3.1 (unconfirmed)

KEYNOTE: HUMANS IN SPACE - MULTI-PLANETARY LIFE ENABLER

Jack Lim, Boryung, Korea, Republic of

IAC-24.A1.3.2

HEALING OF EX VIVO SUTURED WOUND MODELS IN HUMAN TISSUES EXPOSED TO SPACEFLIGHT

Monica Monici, University of Firenze, Florence, Italy

IAC-24.A1.3.3

EXPLORING THE FEASIBILITY OF DRIED BLOOD SPOT (DBS) SAMPLING FOR CAFFEINE EXPOSURE ANALYSIS IN MICROGRAVITY DURING PARABOLIC FLIGHTS

Audrey Derobertmasure, INSERM, Paris, France

IAC-24.A1.3.4

COOLFLY: BEATING GRAVITY'S PULL WITH PERIPHERAL COOLING

Tomas Bothe, Charité Universitätsmedizin Berlin, Berlin, Germany

IAC-24.A1.3.5

A REVIEW EVALUATING THE EFFICACY OF NON-PHARMACOLOGICAL COUNTERMEASURES FOR SPACEFLIGHT-ASSOCIATED NEURO-OCULAR SYNDROME

Misha Iyer, Imperial College London, London, United Kingdom; Nicole Demitry, Imperial College London, London, United Kingdom; June Gitau, Imperial College London, London, United Kingdom

IAC-24.A1.3.6

SPACEFLIGHT ENVIRONMENT EFFECTS ON HUMAN SKIN MICROBIOME

Jaume Puig, University Pompeu Fabra of Barcelona, Sabadell, Spain

IAC-24.A1.3.7

THE PURSUIT FOR A "GOLD STANDARD" CARDIOPULMONARY RESUSCITATION (CPR) METHOD FOR HUMAN SPACEFLIGHT: A NOVEL CPR TESTING PLATFORM

Zoé Victoria Lord, International Institute for astronautical Sciences (IIAS), Beaconsfield, Canada

IAC-24.A1.3.8

PILOT STUDY OF A NEWLY DESIGNED MOBILE LBNP

Angélique Verrecchia, MEDES - IMPS, Toulouse, France

IAC-24.A1.3.9

NON-INVASIVE INTRACRANIAL PRESSURE MONITORING IN ASTRONAUTS USING NEAR-INFRARED IMAGING AND MACHINE LEARNING

Daniel Cieslak, Gdansk University of Technology, Rumia, Poland

IAC-24.A1.3.10

ANALOG SPACEFLIGHT MEDICINE: AN OPPORTUNITY FOR MEDICAL RESEARCH FOR HUMAN SPACEFLIGHT ON TERRESTRIAL ANALOG STATIONS

Oscar Ojeda, Cydonia Foundation, Bogota, Colombia

IAC-24.A1.3.11

CREATING SURGICAL CAPABILITIES FOR EXPLORATION SPACEFLIGHT

George Pantalos, The University of Louisville, Louisville, United States

IAC-24.A1.3.12

AUTOMATED PHAGE SUSCEPTIBILITY TESTING IN MICROGRAVITY USING DIGITAL MICROFLUIDICS TO ADVANCE SPACE HEALTHCARE IN LONG-TERM MISSIONS

Bernadette Ng, University of Toronto, Brossard, Canada

IAC-24.A1.3.13

APHRODITE: A LAB-ON-CHIP BIOSENSOR FOR CHEMILUMINESCENCE IMMUNODETECTION OF SALIVARY BIOMARKERS ONBOARD THE INTERNATIONAL SPACE STATION

Mara Mirasoli, Alma Mater Studiorum - University of Bologna, Bologna, Italy

IAC-24.A1.3.14

PERSPECTIVES FOR FUTURE SPACE BIOMEDICAL RESEARCH TO ENSURE CREW HEALTH AND PERFORMANCE FOR FUTURE HUMAN SPACE EXPLORATION MISSIONS BEYOND LOW-EARTH ORBIT, A MULTIDISCIPLINARY APPROACH

Lucia Vicente Martinez, Institute for Space Medicine and Physiology/ MEDES, Toulouse, France

IAC-24.A1.3.15

UNDERSTANDING OF THE EFFECTS OF SPACEFLIGHT ON HUMAN HEALTH: FUTURE CONTRIBUTION OF THE ITALIAN SPACE AGENCY

Serena Perilli, ASI - Italian Space Agency, Rome, Italy

A1.4. Medicine in Space and Extreme Environments

October 16 2024, 15:00 — Yellow Hall 2

Co-Chair(s): Oleg Orlov, Institute of Biomedical Problems (IBMP), Russian Academy of Sciences (RAS), Russian Federation; Hanns-Christian Gunga, Charité Universitätsmedizin Berlin, Germany

Rapporteur(s): Jeffrey R. Davis, Exploring 4 Solutions, United States; Alexander Choukér, University of Munich, Germany

IAC-24.A1.4.1

ANTIMICROBIAL RESISTANCE: THE LESSON FROM WORD AND ITS APPLICATION IN SPACE

Omer Aydin, Erciyes University, Kayseri, Türkiye

IAC-24.A1.4.2

ASTRO-PSYCHIATRY: A NOVEL SOLUTION FOR MENTAL HEALTH IN SPACE EXPLORATION

Susan Ip-Jewell, Lancaster, United States

IAC-24.A1.4.3

CIRCADIAN RHYTHM CHANGES OF CORE BODY TEMPERATURE DURING LONG-DURATION SPACEFLIGHT (CIRCADIAN RHYTHM PROJECT)

Martina Anna Maggioni, Charité Universitätsmedizin Berlin, Berlin, Germany

IAC-24.A1.4.4

CIRCADIAN RHYTHMS ALTERATIONS DURING OVERWINTERING AT THE HIGH-ALTITUDE ANTARCTIC STATION CONCORDIA (CARDICORTEX PROJECT)

Martina Anna Maggioni, Charité Universitätsmedizin Berlin, Berlin, Germany

IAC-24.A1.4.5

EPIGENETICS AND ZERO GRAVITY : A COMPLEX INTERPLAY RELEVANT TO ADAPTATION IN SPACE

Radhia Rhaïem, University, Sfax, Tunisia

IAC-24.A1.4.6

VIRTUAL REALITY SIMULATION RESCUE TRAINING - ADDRESSING THE PROBLEM OF RETENTION OF SKILLS IN EXTREME ENVIRONMENTS

Carole Dangoisse, London, United Kingdom

IAC-24.A1.4.7

UV LIGHT FOR SPACE LAUNDRY: MITIGATING MICROBIAL RISKS ON LONG-DURATION CREWED MISSIONS

Charlotte Pouwels, International Space University (ISU), De Lie, The Netherlands

IAC-24.A1.4.8

UTILIZING VIRTUAL, HYBRID, AND AUGMENTED REALITY TO ENHANCE SURGICAL TRAINING AND PREPAREDNESS FOR LONG-DURATION SPACE MISSIONS

Danielle Carroll, University of Colorado Boulder, BOULDER, United States

IAC-24.A1.4.9

OVERVIEW OF MULTILAYERED DATA MONITORING IN THE APICES SPACE ANALOGUE MISSION

Charlotte Pouwels, International Space University (ISU), De Lie, The Netherlands

IAC-24.A1.4.10

FA4SANS-GAN: GENERATIVE AI TO UNDERSTAND OPHTHALMIC CHANGES IN SPACEFLIGHT ASSOCIATED NEURO-OCULAR SYNDROME (SANS)

Ethan Waisberg, University of Cambridge, Cambridge, United Kingdom

IAC-24.A1.4.11

ON THE CIRCADIAN CYCLE MODIFICATIONS OF THE MEMBERS OF THE FIRST LATIN AMERICAN ANALOGOUS MISSION FOR RESEARCH OF MARS

Sagrario Linares Melo, Benemerita Universidad Autonoma de Puebla, Puebla, Mexico

IAC-24.A1.4.12

MITOPHAGY REGULATES CIRCADIAN RHYTHMS DISTURBANCE INDUCED BY SIMULATED SPACE ENVIRONMENTS

Lina Qu, Astronaut Center of China, Beijing, China

IAC-24.A1.4.13

LEVERAGING AMPUTEE BODY PLANS FOR SPACEFLIGHT

Mark Rosenberg, Medical University of South Carolina, Charleston, United States

A1.5. Radiation Fields, Effects and Risks in Human Space Missions

October 17 2024, 10:15 — Yellow Hall 2

Co-Chair(s): Lawrence Pinsky, University of Houston, United States; Guenther Reitz, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

Rapporteur(s): Premkumar Saganti, Prairie View A&M University, United States

IAC-24.A1.5.1

ENGINEERING HUMAN CELL-BASED RADIORESISTANCE TO BOLSTER ASTRONAUT HEALTH ON LONG-TERM SPACE MISSIONS

Aaron Rosenstein, University of Toronto, Toronto, Canada

IAC-24.A1.5.2

ADAPTIVE HEPATIC GENE EXPRESSION PATTERNS IN MICE IN RESPONSE TO SIMULATED OR SPACE RADIATION EXPOSURE.

Sara Reyes, INMEGEN (Instituto Nacional de Medicina Genómica), Mexico City, Mexico; Jesus Gomez Montalvo, INMEGEN (Instituto Nacional de Medicina Genómica), Mexico City, Mexico; S. Eréndira Avendaño-Vázquez, INMEGEN (Instituto Nacional de Medicina Genómica), Mexico City, Mexico

IAC-24.A1.5.3

ENGINEERED STEM CELLS AND THE SPACEFLIGHT ENVIRONMENT: WHAT HAPPENS WHEN EXPOSED TO COSMIC RADIATION?

Fay Ghani, Mayo Clinic, Jacksonville, United States

IAC-24.A1.5.4

CHARACTERIZING SPACE RADIATION INSIDE THE ISS: ANISOTROPIES AS MEASURED BY LIDAL DETECTOR IN COLUMBUS.

Luca Di Fino, ASI - Italian Space Agency, Rome, Italy

IAC-24.A1.5.5

MINIATURE RADIATION SPECTROMETER HARDPIX

Robert Filgas, Czech Technical University In Prague (CTU), Prague, Czech Republic

IAC-24.A1.5.6

WEARABLE, LIGHTWEIGHT AND FLEXIBLE IONIZING RADIATION DOSIMETERS FOR REAL-TIME CREW PERSONAL MONITORING

Prof. Beatrice Fraboni, Alma Mater Studiorum - University of Bologna, Bologna, Italy

IAC-24.A1.5.7

FIRST DATA-BASED EVALUATION OF THE RADIATION PROTECTION CAPABILITIES OF THE ASTRO RAD VEST AS FLOWN ONBOARD ARTEMIS I

Jordan Hour, StemRad, Tampa, Florida, United States

IAC-24.A1.5.8

MRADSIM (MATTER-RADIATION INTERACTIONS SIMULATIONS)

Ali Behcet ALPAT, National Institute of Nuclear Physics - INFN, Perugia, Italy

IAC-24.A1.5.9

ACTIVE SHIELDED MARS BASE

Marco Peroni, FAENZA, Italy

IAC-24.A1.5.10

ERFNET – DH: ENHANCING THE SPACE RADIATION RESEARCH FOR FUTURE HUMAN SPACE TRAVELS

Lorenzo Scavarda, ALTEC Spa, Torino, Italy

A1.6. Advancements in Astrobiology and Space Exploration

October 17 2024, 15:00 — Yellow Hall 2

Co-Chair(s): Fathi Karouia, NASA Ames Research Center, Blue Marble Space Institute Of Science; BioServe Space Technologies, University of Colorado Boulder, United States; Stephan Ulamec, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

IAC-24.A1.6.1

HABITABLE ENVIRONMENTS IN THE SOLAR SYSTEM AND THEIR FUTURE EXPLORATION

Athena Coustenis, LESIA - Observatoire de Paris, MEUDON, France

IAC-24.A1.6.2

ASTROBIOLOGY IN THE ITALIAN SPACE AGENCY: AN OVERVIEW OF ONGOING RESEARCH PROJECTS

Micol Bellucci, ASI - Italian Space Agency, Rome, Italy

IAC-24.A1.6.3

THE BIOMEX SPACE EXPERIMENT ON THE EXPOSE R2 MISSION: THE RESISTANCE OF THE ANTARCTIC BLACK FUNGUS CRYOMYCES ANTARCTICUS AND IMPLICATIONS FOR ASTROBIOLOGY
Claudia Pacelli, Agenzia Spaziale Italiana (ASI), Roma, Italy

IAC-24.A1.6.4

DESERT CYANOBACTERIA UNDER NON-EARTH CONDITIONS: IMPLICATIONS FOR ASTROBIOLOGY AND LIFE SUPPORT
Daniela Billi, University of Rome Tor Vergata, Rome, Italy

IAC-24.A1.6.5

EXTREMOPHILES FROM SAUDI ARABIA FOR SPACE APPLICATIONS
Mohammed Baeshen, Jeddah, Saudi Arabia

IAC-24.A1.6.7

VENOM (VENTURE THE EXTRACTION OF ORGANIC MOLECULES): PRELIMINARY DESIGN AND TESTS ON THE INSTRUMENT BREADBOARD
Giacomo Colombatti, Università degli Studi di Padova, Padova, Italy

IAC-24.A1.6.8

MICROFLUIDIC: A TOOL TO UNDERSTAND THE INTERACTION BETWEEN MINERALS AND PREBIOTIC MOLECULES ON EARTH AND BEYOND
Selene Cannelli, Tokyo Institute of Technology, Shinagawa, Tokyo, Japan

IAC-24.A1.6.9

BACTERIAL GROWTH AS A CAUSE OF THE ORLAN SPACESUIT WATER COOLING SYSTEM MALFUNCTION.
Alexander Guridov, Institute of Biomedical Problems (IBMP), Russian Academy of Sciences (RAS), Moscow, Russian Federation

IAC-24.A1.6.10

PLANT MAGNETORECEPTION: QUANTUM BIOLOGY OF LIFE BEYOND THE GEOMAGNETIC FIELD
Prof. Massimo Maffei, University of Turin, Turin, Italy

A1.7. Life Support, habitats and EVA Systems

October 18 2024, 10:15 — Yellow Hall 2

Chair(s): Gisela Detrell, Technical University of Munich, Germany
Rapporteur(s): Hong Liu, School of Biological Science and Medical Engineering, Beihang University; Institute of Environmental Biology and Life Support Technology, Beihang University, China

IAC-24.A1.7.1

CENTRALIZED TESTING FACILITY UNITING FOOD SYSTEMS FOR SPACE EXPLORATION
Kyunghwan KIM, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Institute of Space Systems, Bremen, Germany

IAC-24.A1.7.3

IN-SITU MANUFACTURING OF PHOTOBIOREACTORS ON THE MOON USING LOCAL RESOURCES
Lina Salman, Technical University of Munich, Ottobrunn, Germany

IAC-24.A1.7.4

ERGONOMIC EVALUATION OF EXTRAVEHICULAR ACTIVITY (EVA) SYSTEMS ON MUSCULOSKELETAL STRAIN AND FATIGUE DURING EXTENDED LUNAR SURFACE EVAS
Zoé Victoria Lord, International Institute for astronautical Sciences (IIAS), Beaconsfield, Canada

IAC-24.A1.7.5

RISK ASSESSMENT AND MAPPING IN A SPACE ANALOG STATION: COLLABORATIONS TO ENSURE SAFETY AND MINIMIZE FAILURES
Iris Cabral, Universidade Federal do ABC - UFABC, Santo André, Brazil; Ana Santana, Universidade Federal do ABC - UFABC, Santo André, Brazil

IAC-24.A1.7.6

STUDY OF THE COMPOSITION OF GARBAGE AND ESTIMATION OF THE MASS OF WASTE FROM THE YEAR-LONG ISOLATION EXPERIMENT WITHIN THE FRAMEWORK OF THE SIRIUS PROJECT.
Irina Shumilina, Institute of Biomedical Problems (IBMP), Russian Academy of Sciences (RAS), Moscow, Russian Federation

IAC-24.A1.7.7

PRELIMINARY DESIGN OF A HUMAN HABITAT FOR THE MELISSA PILOT PLANT
Antoine Pigamo, ISAE-Supaero University of Toulouse, Toulouse, France; Gabriela Cuervo, ISAE-Supaero University of Toulouse, Toulouse, France; Pier Lorenzo Murra, ISAE-Supaero University of Toulouse, Toulouse, France

IAC-24.A1.7.8

ENHANCING SPACE MISSION EFFICIENCY THROUGH COOLING TECHNOLOGY TEXTILES
Aya Hesham, Sigma Fit, Chicago, IL, United States

IAC-24.A1.7.9

PAYLOAD RESULTS OF AN ACROSS ISS SPACED NOVEL ANTI-MICROBIAL COATING
Jason Armstrong, Boeing, Brisbane, Australia

IAC-24.A1.7.10

INTEGRATED BIOREGENERATIVE SYSTEM FOR ASTRONAUT WASTE PROCESSING AND AUTONOMOUS CULTIVATION EXPLOITING ISRU TECHNIQUES: BEATRICE PROJECT
Paolo Marzioli, Sapienza University of Rome, Rome, Italy

IAC-24.A1.7.11

HABITAT HARMONY: NEXT-GEN ASTRONAUTICS MEETS PHYSIOLOGICAL INNOVATION
Tomas Bothe, Charité Universitätsmedizin Berlin, Berlin, Germany

IAC-24.A1.7.12

LEVERAGING LESSONS FROM TRAUMA SURGERY, ROBOTICS, AND WOUND HEALING TO INFORM TECHNOLOGICAL DESIGN FOR EXPLORATION-CLASS MISSIONS TO THE MOON AND MARS
Danielle Carroll, University of Colorado Boulder, BOULDER, United States

IAC-24.A1.7.13

MOON-RICE: CEREAL CROP PRODUCTION FOR FUTURE PLANETARY BASES
Marta Del Bianco, Italian Space Agency (ASI), Rome, Italy

IAC-24.A1.7.14

PLANT BASED WATER FILTERING: TOWARDS REGENERATIVE WATER PROCESSING SYSTEMS
Antonin Lecomte, Asclepios, Toulouse, France

A1.8. Biology in Space

October 18 2024, 13:45 — Yellow Hall 2

Co-Chair(s): Didier Chaput, Centre National d'Etudes Spatiales (CNES), France; Fengyuan Zhuang, Beihang University, China
Rapporteur(s): Jancy McPhee, The Aerospace Corporation, United States

IAC-24.A1.8.1

RESEARCHES AND ACTIVITIES IN HEALTH AND LIFE SCIENCES AT THE ITALIAN SPACE AGENCY
Micol Bellucci, ASI - Italian Space Agency, Rome, Italy

IAC-24.A1.8.2

ADVANCEMENTS IN MICROSCOPIC OBSERVATION TECHNOLOGY FOR SPACE BIOLOGICAL EXPERIMENTS
Kohei Yoshioka, IDDK Co. Ltd., Koto, Japan

IAC-24.A1.8.3

GENOMIC EXPLORATION IN MICROGRAVITY: MESSAGE (MICROGRAVITY ASSOCIATED GENETICS) SCIENCE MISSION PRELIMINARY RESULTS
Cihan TAŞTAN, Üsküdar University, İstanbul, Türkiye

IAC-24.A1.8.5

ACCELERATED HEMATOPOIETIC STEM CELL AGING IN SPACE
Jessica Pham, San Diego, United States

IAC-24.A1.8.6

EXPOSURE OF CARTILAGE TISSUE MODELS TO GRAVITATIONAL TRANSITIONS ASSOCIATED WITH SPACEFLIGHT: IMPLICATIONS FOR INTERPLANETARY EXPLORATION
Giada Graziana Genchi, Bari, Italy

IAC-24.A1.8.7

BONE SCAFFOLDS IN SIMULATED MICROGRAVITY: AN EXPERIMENTAL APPROACH TO ASSESS CELL RESPONSE TO A BIOMIMETIC MICROENVIRONMENT
Eleonora Zenobi, Fondazione E. Amaldi, Rome, Italy

IAC-24.A1.8.8

POSSIBILITY TO EXPAND OPPORTUNITY AND BENEFIT WITH JAXA MOUSE HABITAT UNIT FOR THE INTERNATIONAL SPACE STATION AND BEYOND
Masashi Ohara, Mitsubishi Heavy Industries, Ltd., Kobe, Japan

IAC-24.A1.8.9

HYPERGRAVITY INDUCES CHANGES OF ERYTHROCYTE MEMBRANE AND ANTIOXIDANT POTENTIAL OF MICE HOUSED IN THE MDS FACILITY
ANGELA MARIA RIZZO, Università degli Studi di Milano, MILAN, Italy

IAC-24.A1.8.10

THE INFLUENCE OF SPACEFLIGHT AND SIMULATED MICROGRAVITY ON BIOFILM FORMATION AND THE EXCHANGE OF GENES BETWEEN MICROORGANISMS.
Camilla Urbaniak, NASA JPL, Pasadena, United States

IAC-24.A1.8.12

MYCOTOXICOLOGICAL STUDIES UNDER MICROGRAVITY: AN INNOVATION FOR FOOD SAFETY AND SECURITY
Asma Betteka, Moscow Aviation Institute (National Research Institute, MAI), Moscow, Russian Federation

IAC-24.A1.8.13

EXPLORING RETRONASAL AROMAS AND MOUTHFEEL PERCEPTION IN SIMULATED SPACE ENVIRONMENTS: IMPLICATIONS FOR ENHANCING ASTRONAUT NUTRITION AND PALATABILITY IN LONG-TERM MISSIONS.
Claudia Gonzalez Viejo, University of Melbourne, Parkville, Australia

A2. IAF MICROGRAVITY SCIENCES AND PROCESSES SYMPOSIUM

Coordinator(s): Valentina Shevtsova, University of Mondragon, Spain; Angelika Diefenbach, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

A2.1. Gravity and Fundamental Physics

October 14 2024, 15:30 — White Hall 1

Co-Chair(s): Thomas Driebe, DLR (German Aerospace Center), Germany; Vladimir Pletser, Blue Abyss, United Kingdom

IAC-24.A2.1.1 (unconfirmed)

A COVARIANT FORMULATION DESCRIBING VIOLATIONS OF THE EQUIVALENCE PRINCIPLE AND ITS CONSEQUENCES FOR EXPERIMENTS
Claus Lämmerzahl, ZARM Fab GmbH, Bremen, Germany

IAC-24.A2.1.2

A SPACE TEST OF THE EQUIVALENCE PRINCIPLE BEYOND MICROSCOPE
Manuel Rodrigues, Office National d'Etudes et de Recherches Aéropatiales (ONERA), Châtillon, France

IAC-24.A2.1.3

EXPLORING BLACK HOLES WITH HYPOTHETICAL TACHYONS: A THEORETICAL ODYSSEY BEYOND THE EVENT HORIZON
Zygimantas Vainauskas, University of Leicester, LEICESTER, United Kingdom

IAC-24.A2.1.4

NEURAL NETWORK BASED FIXED-TIME CONTROL OF A FREE-FLOATING SPACE MANIPULATOR
Jiang Lei, Fuzhou University, Nanchang, China

IAC-24.A2.1.5

SPACE EMULATION TESTBED FOR CLOSE-PROXIMITY OPERATIONS WITH TUMBLING UNCOOPERATIVE TARGETS
Juan Pablo Garcia, York University, North York, Canada

IAC-24.A2.1.6

DISPERSAL BEHAVIOR OF CELESTIAL SURFACE OBJECTS BY THRUSTER JET
Maiko Yamakawa, The Graduate University for Advanced Studies (SOKENDAI), Kyoto, Japan

IAC-24.A2.1.7 (unconfirmed)

STELLAR VARIABILITIES IN MASS TRANSFER OF BINARY STAR SYSTEM
Madhu Salavurao, Amity University Mumbai, Mumbai, India

IAC-24.A2.1.8

SELF-ASSEMBLY OF GRANULAR GAS AND THREE DIMENSIONAL PATTERN FORMATION IN A MICROGRAVITY ENVIRONMENT
Hosei O, Department of Engineering, The University of Tokyo, Tokyo, Japan

IAC-24.A2.1.9

AN UPDATED FORMALISM FOR DEGRADATION OF NEUTRON STAR'S MAGNETIC FIELD.
Sonu Yadav, Sanjan, India

IAC-24.A2.1.10

PROGNOSING HOW TIME PASSES IN A BLACK HOLE: A STUDY IN PHYSICS AND COSMOLOGY.
Tunzala Mammadova, Azerbaijan State Pedagogical University (ASPU), Baku, Azerbaijan

A2.2. Fluid and Materials Sciences

October 16 2024, 10:15 — White Hall 1

Co-Chair(s): Nickolay N. Smirnov, Lomonosov Moscow State University, Russian Federation; Satoshi Matsumoto, Japan Aerospace Exploration Agency (JAXA), Japan

Rapporteur(s): Qi Kang, National Microgravity Laboratory, Institute of Mechanics, Chinese Academy of Sciences., China

IAC-24.A2.2.1

A NEW PRESSURE DROP CORRELATION FOR TWO-PHASE FLOW UNDER MICROGRAVITY ENVIRONMENT OF SPACE MISSIONS
Hana Aouinet, saint quentin, France

IAC-24.A2.2.3

CFD OF SPACE STATION THERMAL COMFORT AND AIRFLOW BEHAVIOR UNDER MICROGRAVITY CONDITIONS
Hana Aouinet, saint quentin, France

IAC-24.A2.2.5

ENHANCING PHASE CHANGE MATERIAL (PCM) EFFICIENCY THROUGH TIMELY MELTING-SOLIDIFICATION CYCLE INTERRUPTION.
Diana Dubert, Universitat Rovira i Virgili (URV), Tarragona, Spain

IAC-24.A2.2.6

FLOW WITH TEMPERATURE DEPENDENT VISCOSITY AND THERMAL CONDUCTIVITY OVER RADIATIVE NEEDLES
Niba Kainat, Università degli Studi di Palermo, Palermo, Italy

IAC-24.A2.2.7

SYNTHESIS OF CATALYST NANOMATERIALS FOR PHOTOELECTROCHEMICAL WATER-SPLITTING IN MICROGRAVITY
Camilla Tossi, ZARM University of Bremen, Bremen, Germany

IAC-24.A2.2.9

HIGH-TEMPERATURE MATERIALS RESEARCH RACK IN CHINESE SPACE STATION

Xiuhong Pan, Shanghai Institute of Ceramics, Chinese Academy of Science (CAS), Shanghai, China

IAC-24.A2.2.10

QUALIFICATION TEST CAMPAIGN OF BARIDI-SANA FLIGHT MODEL, AN INNOVATIVE TWO-PHASE FLOW COOLING SYSTEM FOR SPACE APPLICATIONS

Andrea Delfini, Sapienza University of Rome, Roma, Italy

IAC-24.A2.2.11

SPACE FLIGHT SAFETY - DETONATION INHIBITION

Elena Mikhachenko, Scientific Research Institute for System Analysis, Russian Academy of Sciences (RAS), Moscow, Russian Federation

IAC-24.A2.2.12

MICROGRAVITY-INDUCED DOUBLE EMULSIONS: PIONEERING MULTIDISCIPLINARY APPLICATIONS IN DRUG DELIVERY, FOOD TECHNOLOGY, AND COSMETICS

RAVITEJA DUGGINENI, Adelaide, Australia

IAC-24.A2.2.14

SIMULATION OF SUPERSONIC COMBUSTION IN AN OBLIQUE SHOCK WAVE

Lyuben Stomov, Scientific Research Institute for System Analysis, Russian Academy of Sciences (RAS), Moscow, Russian Federation

A2.3. Microgravity Experiments from Sub-Orbital to Orbital Platforms

October 16 2024, 15:00 — White Hall 1

Co-Chair(s): Raffaele Savino, University of Naples "Federico II", Italy; Rainer Willnecker, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

Rapporteur(s): Vladimir Pletser, Blue Abyss, United Kingdom

IAC-24.A2.3.1

CENTRIFUGAL CASTING OF WAX-BASED FUEL GRAINS IN MICROGRAVITY: PRELIMINARY RESULTS FROM A SUB-ORBITAL LAUNCH

Scott Dorrington, Massachusetts Institute of Technology (MIT), Somerville, United States

IAC-24.A2.3.2

ELECTRODYNAMIC REGOLITH CONVEYOR SUB-ORBITAL FLIGHT EXPERIMENT

Aaron Olson, NASA John F. Kennedy Space Center, Kennedy Space Center, United States

IAC-24.A2.3.3

IMPULSE-FREE RELEASE MECHANISM AND TEST SETUP FOR ROBOTIC FREE-FLOATING EXPERIMENTS ON PARABOLIC FLIGHTS

Philip Arm, ETHZ, Zürich, Switzerland

IAC-24.A2.3.4

WELDING UNDER MICROGRAVITY CONDITIONS: EXPERIMENTAL RATIONALE, BACKGROUND, AND APPROACH BY THE UNIVERSIDAD CENTRAL DE VENEZUELA TEAM, AWARDEE OF THE 2024 DROPTES

Diana Usuga, Central University of Venezuela (UCV), Caracas, Venezuela; Maria Moreno, Central University of Venezuela (UCV), Caracas, Venezuela; Gustavo Yallonardo, Central University of Venezuela (UCV), Caracas, Venezuela

IAC-24.A2.3.5

PULSATING HEAT PIPE LABORATORY TESTS FOR A MICROGRAVITY SUB-ORBITAL EXPERIMENT

Larissa Krambeck, Universidade Federal de Santa Catarina UFSC, Florianópolis, Brazil

IAC-24.A2.3.6

MAGNETIC SURFACE STRESS PUMP DEVELOPMENT UNDER MICROGRAVITY CONDITIONS FOR SATELLITE THERMAL MANAGEMENT

Thomas Imhuele, ZARM, University of Bremen, Bremen, Germany

IAC-24.A2.3.7

SCIENTIFIC RESULTS OF FERRAS - INNOVATIONS IN FERROFLUID PUMPING SYSTEMS FOR MICROGRAVITY APPLICATIONS

Frederik Junker, KSat e.V., Stuttgart, Germany

IAC-24.A2.3.8

ENHANCING SPACECRAFT PERFORMANCE THROUGH IN-SPACE MICROVIBRATION MEASUREMENTS

Sven Thiele, Hochschule Bremen, Bremen, Germany

IAC-24.A2.3.9

SUBORBITAL EXPRESS - THE REAL RIDE-SHARE SOLUTION FOR SOUNDING ROCKET MISSIONS

Stefan Krämer, Swedish Space Corporation, Solna, Sweden

IAC-24.A2.3.10

SUBORBITAL INEXPENSIVE ROCKET (SIR) – OVERVIEW OF THE PROJECT RESULTS AND FURTHER DEVELOPMENT PLAN OF PERUN SUBORBITAL ROCKET

Adam Matusiewicz, SpaceForest, Gdynia, Poland

IAC-24.A2.3.11

PARAMETER IDENTIFICATION USING MICROGRAVITY EXPERIMENTS ON ASTEROID-RELATED SCENARIOS

Samuele Vaghi, Politecnico di Milano, Cesano Maderno, Italy

A2.4. Science Results from Ground Based Research

October 17 2024, 10:15 — White Hall 1

Co-Chair(s): Valentina Shevtsova, University of Mondragon, Spain; Antonio Viviani, Università degli Studi della Campania "Luigi Vanvitelli", Italy

Rapporteur(s): Nickolay N. Smirnov, Lomonosov Moscow State University, Russian Federation

IAC-24.A2.4.1

EFFECT OF THE INCLINATION ANGLES OF THE CAPILLARY TUBE ON THE NATURAL EVAPORATION OF ABSOLUTE ETHANOL

Prof. Bin Liu, Tianjin, China

IAC-24.A2.4.2

INFLUENCE OF GRAVITY ON DYNAMICS OF ABSORPTIVE LIBR-WATER SOLUTION

P.F. Arroia, Mondragon Unibertsitatea, Arrasate-Mondragon, Spain

IAC-24.A2.4.4

PRELIMINARY RESULTS FROM SLUGG - FRICTIONS VS MICROGRAVITY AND PRESSURE

Szymon Krawczuk, Gdansk University of Technology, Gdansk, Poland

IAC-24.A2.4.5

THE INFLUENCE OF NON-UNIFORM HEATING FROM BELOW ON THE DYNAMICS OF FLOATING DROPLETS

Antonio Viviani, Università degli Studi della Campania "Luigi Vanvitelli", Aversa, Italy

IAC-24.A2.4.6

SIMULATION OF A DETONATION COMBUSTION CHAMBER

Elena Mikhachenko, Scientific Research Institute for System Analysis, Russian Academy of Sciences (RAS), Moscow, Russian Federation

IAC-24.A2.4.7

THE MULTI-PHYSICAL FIELDS MEASUREMENT OF DROPLET THERMOCAPILLARY MIGRATION

Li DUAN, National Microgravity Laboratory, Institute of Mechanics, Chinese Academy of Sciences., Beijing, China

IAC-24.A2.4.8

THEORETICAL PERFORMANCE EVALUATION OF REBOUND MITIGATION OF A TARGET MARKER IN A MICROGRAVITY ENVIRONMENT

Tetsuya Kusumoto, Japan Aerospace Exploration Agency (JAXA), ISAS, Tokyo

IAC-24.A2.4.11

EXPERIMENTAL ANALYSIS OF VIBRATIONALLY-INDUCED FLUIDIZATION OF LUNAR REGOLITH IN HOPPERS AND CLOSED CONTAINERS

Peter Watson, University of Strathclyde, Glasgow, United Kingdom

IAC-24.A2.4.12

LEO MICROFLUIDICS EXPERIMENT MODULE

Ruben Sanchez, Concordia University, Montreal, Canada; Jonathan Bissonnette, Concordia University, Montreal, Canada; Jacob Daigle, Concordia University, Montreal, Canada

A2.5. Facilities and Operations of Microgravity Experiments

October 17 2024, 15:00 — White Hall 1

Co-Chair(s): Qiu-Sheng Liu, Institute of Mechanics, Chinese Academy of Sciences, China; Remi Canton, Centre National d'Etudes Spatiales (CNES), France

IAC-24.A2.5.1

ADVANCED MICROGRAVITY FRAMEWORK WITH THE COMBINED FACILITY IOSLAB – SPACE RIDER – IOSHEX

Inna Uwarowa, S.A.B. Aerospace Srl, Brno, Czech Republic

IAC-24.A2.5.2

INTRODUCTION TO THE ON-ORBIT OPERATION AND EXPERIMENT OF THE FLUID PHYSICS RACK (FPR) OF THE CHINA SPACE STATION

Qi Kang, National Microgravity Laboratory, Institute of Mechanics, Chinese Academy of Sciences., Beijing, China

IAC-24.A2.5.3

HIGH MICROGRAVITY LEVEL RESEARCH RACK IN CHINA SPACE STATION AND PRESENT EXPERIMENT

Shuquan Wang, Technology and Engineering Center for Space Utilization, Chinese Academy of Sciences, Beijing, China

IAC-24.A2.5.4

ADVANCES IN THE REALIZATION OF PARTIAL GRAVITY: ENHANCING THE CAPABILITIES OF THE GRAVITOWER BREMEN PRO

Anna Becker, ZARM University of Bremen, Bremen, Germany

IAC-24.A2.5.5

OPEN SOURCE SOUNDING ROCKET-BASED FREE-FALLING PLATFORM TO CONDUCT REDUCED GRAVITY RESEARCH

Benjamin Åkerlund, Department of Space Engineering, Luleå University of Technology, Kiruna, Sweden; Vincent Brückner, Luleå University of Technology, Luleå, Sweden

IAC-24.A2.5.6

EXPERIMENTAL INVESTIGATION OF ON-ORBIT FLUID MANAGEMENT BY USING VARYING-GRAVITY EXPERIMENT RACK ON SPACE STATION

Naifeng He, National Microgravity Laboratory, Institute of Mechanics, Chinese Academy of Sciences., Beijing, China

IAC-24.A2.5.7

AMP: AN AUTONOMOUS SUB-ORBITAL MICROGRAVITY PLATFORM MISSION CONCEPT

Adriano Parisi, Torino, Italy

IAC-24.A2.5.8

THE GRAVITOWER – LUNAR GRAVITY CONDITIONS ON A GROUND-BASED PARTIAL-GRAVITY PLATFORM

Merle Cornelius, ZARM Fab GmbH, Bremen, Germany

IAC-24.A2.5.9

FUTURE POSSIBILITIES FOR GRAVITY-RELATED RESEARCH AND TRAINING AT BLUE ABYSS

Vladimir Pletser, Blue Abyss, Colchester, United Kingdom

IAC-24.A2.5.10

ANALYSIS OF INTRA-VEHICULAR MANIPULATION USING ROBOTIC FREE-FLYERS

Monica Ekal, German Aerospace Center (DLR), Weßling-Oberpfaffenhofen, Germany

IAC-24.A2.5.11

STUDY ON CAPSULE RELEASE DEVICE FOR LOW GRAVITY ENVIRONMENT TEST FACILITY

I SANG YU, Korea Aerospace Research Institute (KARI), daejeon, Korea, Republic of

IAC-24.A2.5.12

ORBITAL LABS: A COST EFFECTIVE AI POWERED MICROGRAVITY EXPERIMENTATION PLATFORM FOR FUTURE RESEARCH MARKETS IN LATIN AMERICAN

Mauricio Rodriguez, Orbital Space Technologies, San Rafael, Costa Rica

A2.6. Microgravity Sciences on board of Space stations

October 18 2024, 10:15 — White Hall 1

Co-Chair(s): Angelika Diefenbach, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany; Yang Yang, Technology and Engineering Center for Space Utilization, Chinese Academy of Sciences, China

Rapporteur(s): Thomas Driebe, DLR (German Aerospace Center), Germany

IAC-24.A2.6.1

MATERIAL SCIENCE ONBOARD THE INTERNATIONAL SPACE STATION: PAYLOAD OPERATIONS AT THE MICROGRAVITY USER SUPPORT CENTER MUSC

Joachim Bonney, German Aerospace Center (DLR), Cologne, Germany

IAC-24.A2.6.2

PROGRESS AND PRELIMINARY EXPERIENCE SUMMARY OF IN-ORBIT EXPERIMENTS ON CHINA SPACE STATION

Man Fang, Technology and Engineering Center for Space Utilization, Chinese Academy of Sciences, Beijing, China

IAC-24.A2.6.3

THE FUNCTIONALITY AND UTILIZATION OF THE CONTAINERLESS MATERIAL RACK ON THE CHINA SPACE STATION

Jianding Yu, Shanghai Institute of Ceramics, Chinese Academy of Sciences, Shanghai, China

IAC-24.A2.6.4

FLOW AND HEAT TRANSFER RESEARCH IN SPACE AND TWO-PHASE SYSTEM EXPERIMENT PLATFORM ON ABOARD CHINA SPACE STATION

Qiu-Sheng Liu, Institute of Mechanics, Chinese Academy of Sciences, Beijing, China

IAC-24.A2.6.5

TRACKING THE MOTION OF AN INTRUDER PARTICLE IN A THREE-DIMENSIONAL GRANULAR BED ON-BOARD THE CHINESE SPACE STATION

Prof.Meiyang Hou, Institute of Physics, CAS, Beijing, China

IAC-24.A2.6.6

GRAVITATIONALLY TAPPING COLLOIDS IN SPACE (GTACS - SEDIMENTING COLLOIDS)

Fabio Giavazzi, Università degli Studi di Milano, Segrate, Italy

IAC-24.A2.6.7

GRAIN ANALYSIS METHOD OF METAL MATERIAL FOR AM LEVITATED AND SOLIDIFIED IN ISS

Koei KADOI, Waseda University, Tokyo, Japan

IAC-24.A2.6.8

NON-EQUILIBRIUM PHENOMENA IN SOFT MATTER AND COMPLEX FLUIDS (NESTEX)

Prof.Alberto Vailati, Università degli Studi di Milano, Milano, Italy

IAC-24.A2.6.9

CAN ACOUSTIC LEVITATION SIMULATE MICROGRAVITY IN FLUIDS?

Rivaldo Carlos Duran Aquino, Universidad Nacional Mayor de San Marcos, Lima, Peru

IAC-24.A2.6.10

PREPARING FOR DEEP SPACE EXPLORATION: RESEARCH SCENARIOS BEYOND LOW EARTH ORBIT
Gourav Mohanan, Dayananda Sagar University, Bangalore, India

IAC-24.A2.6.11

EXPERIMENTAL INVESTIGATION OF DROP EVAPORATION IN TWO-PHASE SYSTEM RACK ABOARD CHINA SPACE STATION
Yue-Qun Tao, National Microgravity Laboratory, Institute of Mechanics, Chinese Academy of Sciences., Beijing, China

A2.7. Life and Physical Sciences under reduced Gravity

October 18 2024, 13:45 — White Hall 1

Co-Chair(s): Angelika Diefenbach, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany; Remi Canton, Centre National d'Etudes Spatiales (CNES), France

Rapporteur(s): Peter Graef, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

IAC-24.A2.7.1

OPERATION OF LIFE SCIENCE FACILITIES AT THE MICROGRAVITY USER SUPPORT CENTER (MUSC)
Maria Grulich, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Cologne, Germany

IAC-24.A2.7.2

AN INVESTIGATION ON THE DIFFERENCES BETWEEN BETA AMYLOID AGGREGATES FORMED ON BOARD THE INTERNATIONAL SPACE STATION AND ON EARTH
Claudia Pacelli, Agenzia Spaziale Italiana (ASI), ROMA, Italy

IAC-24.A2.7.3

ADVANCEMENTS IN THE MINI FLUORESCENCE MICROSCOPE DEVELOPMENT: PROGRESS AND PROSPECTS
Kiira Tiensuu, Aboa Space Research Oy, Turku, Finland

IAC-24.A2.7.4

AI/ML POWERED COMMERCIAL GRADE HUMAN PERFORMANCE SYSTEM ENABLING STANDARDIZED SPACE BIOTECH RESEARCH AND DEVELOPMENT
Ioana Cozmuta, International Academy of Astronautics (IAA), Sunnyvale, United States

IAC-24.A2.7.5

BRAIN IN SPACE: A TECHNOLOGY DEMONSTRATOR TO STUDY BRAIN ARTERIES IN MICROGRAVITY BY LEVERAGING SPACE PLATFORMS FOR ADVANCED MEDICAL RESEARCH
Prisha Asher, Institut Supérieur de l'Aéronautique et de l'Espace (ISAE), Toulouse, France

IAC-24.A2.7.7

IRMA PROJECT: DEVELOPING SYSTEMS FOR DISEASE-CAUSING BACTERIA DETERMINATION ON SPACE STATIONS
Diego Adolfo Dueñas Parapar, Universidad Ricardo Palma, Lima, Peru

IAC-24.A2.7.8

RHODIUM SCIENTIFIC: ENABLING BIOTECH INDUSTRY THROUGH SPACEFLIGHT QUALITY ASSURANCES
Olivia Gámez Holzhaus, Houston, United States

IAC-24.A2.7.9

THE VINEBOT AS A LIGHTWEIGHT AND COMPACT ALTERNATIVE TO TRADITIONAL ROBOTIC MANIPULATORS IN SPACE
Nathalie Vilchis Lagunes, Mexico City, Mexico

IAC-24.A2.7.10

ENABLING A BIOPRODUCTION IN SPACE - PRELIMINARY DESIGN OF A MISSION AND CONSTRUCTION OF A BIOREACTOR CAPABLE OF LONG-TERM OPERATION IN SPACE
Wojciech Wysocki, Gdansk University of Technology, Szymbark, Poland

A2.8. In-Space Manufacturing and Production Applications

October 15 2024, 15:00 — Yellow Hall 3

Co-Chair(s): Fathi Karouia, NASA Ames Research Center, Blue Marble Space Institute Of Science; BioServe Space Technologies, University of Colorado Boulder, United States; David Estrada, Boise State University (BSU), United States

Rapporteur(s): Albert Houcine TOUATI, Université Clermont Auvergne (UCA), France

IAC-24.A2.8.1

IN-SPACE MANUFACTURING - 2024 INDUSTRY SURVEY, TRENDS, ECONOMICS AND ENABLERS
Erik Kulu, Tallinn, Estonia

IAC-24.A2.8.2

IN-SPACE MANUFACTURING: FACTS AND MYTHS
Ioana Cozmuta, International Academy of Astronautics (IAA), Sunnyvale, United States

IAC-24.A2.8.3

MANUFACTURING EXPERIMENTS ACHIEVEMENT SHARING IN MICROGRAVITY AND FUTURE PROSPECTS BY THE KEY LABORATORY OF SPACE MANUFACTURING TECHNOLOGY
YIFEI LIU, Technology and Engineering Center for Space Utilization, Chinese Academy of Sciences, Beijing, China

IAC-24.A2.8.4

MANUFACTURING BETTER DRUGS IN MICROGRAVITY
Molly Mulligan, Redwire Space, Jacksonville, United States

IAC-24.A2.8.5

A PATH TOWARDS PRINTED ELECTRONICS IN SPACE: TRANSFER AND EVAPORATION OF COLLOIDAL DROPLETS IN MICROGRAVITY
Weibin Li, National Microgravity Laboratory, Institute of Mechanics, Chinese Academy of Sciences., Beijing, China

IAC-24.A2.8.6

ONE MICROGRAVITY TECHNOLOGY, THREE HUMAN HEALTH APPLICATIONS
Sreelakshmi Sita Sonty, Space Tango, Arlington, United States

IAC-24.A2.8.7

AN EXPERIMENTAL INVESTIGATION OF MICROGRAVITY CONDITIONS ON FDM-BASED IN-SPACE ADDITIVE MANUFACTURING
Angela Huang, York University, Maple, Canada

IAC-24.A2.8.8

IN-SPACE EXPANSION OF HEMATOPOIETIC STEM CELLS: TECHNICAL PROGRESS, ECONOMIC POTENTIAL, AND COMMERCIALIZATION CHALLENGES
Fathi Karouia, NASA Ames Research Center, Blue Marble Space Institute Of Science; BioServe Space Technologies, University of Colorado Boulder, Moffett Field, United States

IAC-24.A2.8.9

ADDITIVE MANUFACTURING OF LUNAR REGOLITH VIA RESIN-BASED BINDER AND MATERIAL EXTRUSION METHOD FOR HIGH-PERFORMANCE IN-SPACE MANUFACTURING ON THE MOON
Tongcai Wang, Technology and Engineering Center for Space Utilization, Chinese Academy of Sciences., Beijing, China

IAC-24.A2.8.10

DEVELOPMENT OF IN SPACE MANUFACTURING CAPABILITIES FOR THE PRODUCTION OF PROTEIN-BASED ARTIFICIAL RETINAS
Nicole Wagner, Farmington, United States

IAC-24.A2.8.12

RHODIUM SCIENTIFIC ENABLES SPACE BIOMANUFACTURING: DEVELOPING BIOLOGICAL STRAINS AND STANDARD PROCESSES FOR LEO AND BEYOND
Heath Mills, Houston, United States

IAC-24.A2.8.13 (unconfirmed)

SUSTAINABLE SPACE STATIONS: THE INTEGRATION OF BIOREACTORS AND ADAPTIVE LABORATORY EVOLUTION FOR SUCCINIC ACID PRODUCTION

Daniela Bezdan, University of Tübingen, Stuttgart, Germany

A3. IAF SPACE EXPLORATION SYMPOSIUM

Coordinator(s): Vincenzo Giorgio, Thales Alenia Space Italia, Italy; Pierre W. Bousquet, Centre National d'Etudes Spatiales (CNES), France; Keyur Patel, National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, United States

A3.1. Space Exploration Overview

October 14 2024, 15:30 — Space Hall 1

Co-Chair(s): Kathy Laurini, Osare Space Consulting Group, United States; Keyur Patel, National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, United States
Rapporteur(s): Norbert Frischauf, TU Graz, Austria; Masaki Fujimoto, Japan Aerospace Exploration Agency (JAXA), Japan

IAC-24.A3.1.1

THE ARTEMIS ACCORDS AND ITS MULTILATERAL APPROACH: THE ROLE OF ITALY TO PROMOTE A BROADER PARTNERSHIP AND CAPACITY BUILDING TOWARDS THE FUTURE OF MOON LANDING
Alessandra Vernile, Agenzia Spaziale Italiana (ASI), Rome, Italy

IAC-24.A3.1.2

ITALY'S LEADERSHIP IN NEW SPACE: LUNAR AND BEYOND EXPLORATION THROUGH STRATEGIC PARTNERSHIPS, DIPLOMATIC INITIATIVES, AND COMMERCIAL OPPORTUNITIES
RICCARDO INGROSSO, Italian Space Agency (ASI), Roma, Italy

IAC-24.A3.1.3

THE UNITED ARAB EMIRATES SPACE EXPLORATION ECOSYSTEM – FROM THE INTERNATIONAL SPACE STATION TO THE ARTEMIS LUNAR PROGRAM
Aisha Alowais, Sharjah Academy for Astronomy, Space Sciences and Technology (SAASST), Sharjah, United Arab Emirates

IAC-24.A3.1.4

PROSPECTS FOR SPACE EXPLORATION: A STRATEGIC ASSESSMENT
Alessandro Cattaneo, Euroconsult, Courbevoie, France

IAC-24.A3.1.5

TOWARDS A MULTINATIONAL ARCHITECTURE FOR IN-SPACE SUSTAINMENT IN CISELUNAR SPACE
Matthew Sutcliffe, Institut d'Etudes Politiques de Paris, PARIS 7EME ARRONDISSEMENT, France

IAC-24.A3.1.6

ADVANCING THE COSPAR POLICY PLANETARY PROTECTION MEASURES FOR A SAFE AND SUSTAINABLE EXPLORATION
Athena Coustenis, LESIA - Observatoire de Paris, MEUDON, France

IAC-24.A3.1.7

LUNAR SURFACE INNOVATION CONSORTIUM: TECHNOLOGY DEVELOPMENT FOR THE LUNAR SURFACE
Wesley Fuhrman, Johns Hopkins University Applied Physics Laboratory, Laurel, MD, United States

IAC-24.A3.1.8

SWARM ROBOTICS: A NEW PARADIGM IN ROBOTIC SPACE EXPLORATION
Rogelio Morales, Bolivarian Agency for Space Activities (ABAE), Caracas, Venezuela

IAC-24.A3.1.9

EVOLVING PERSPECTIVES: A COMPREHENSIVE ANALYSIS AND TAXONOMY OF MODULAR SPACE ROBOTS

Amrita Suresh, University of Bremen, Bremen, Germany

IAC-24.A3.1.10

MAPPING THE PATHS OF HUMAN SPACE EXPLORATION, A LIFE SCIENCE PROSPECTIVE

Marta Del Bianco, Italian Space Agency (ASI), Rome, Italy

IAC-24.A3.1.11

ULTRA-COMPACT UNIVERSAL PLATFORM FOR SOLAR SYSTEM AND DEEP SPACE EXPLORATION.

Nikolay Vedenkin, Seongnam-si, Gyeonggi-do, Korea, Republic of

IAC-24.A3.1.13

HUMAN SPACE EXPANSION TOWARDS A SPACE CIVILISATION

Allen Jiang, University College London (UCL), London, United Kingdom

IAC-24.A3.1.14

EMBRACING RESEARCH, DEVELOPMENT, AND INNOVATION IN SPACE FARMING - A BRAZILIAN EXPERIENCE

Prof. Paulo Rodrigues, Luiz de Queiroz College of Agriculture University of Sao Paulo, Piracicaba, Brazil

A3.2A. Moon Exploration – Part 1

October 15 2024, 10:15 — Space Hall 1

Co-Chair(s): Bernard Foing, ILEWG "EuroMoonMars", The Netherlands; David Korsmeyer, National Aeronautics and Space Administration (NASA), Ames Research Center, United States
Rapporteur(s): Pierre-Alexis Joumel, Airbus Defence and Space, Germany; Nadeem Ghafoor, Avalon Space, Canada

IAC-24.A3.2A.1

KEYNOTE: SCIENCE FINDINGS FROM CHANDRAYAAN-3 IN-SITU OBSERVATIONS
D. Gowrisankar, Indian Space Research Organization (ISRO), Bangalore, India

IAC-24.A3.2A.2

DESIGNING A ROBOTIC DELIVERY SYSTEM FOR LUNAR SURFACE EXPLORATION
Nafisa Zian Imam Shafi, Sharjah Academy for Astronomy, Space Sciences and Technology (SAASST), Sharjah, United Arab Emirates

IAC-24.A3.2A.3

LEIA: NASA'S FIRST BIOLOGICAL MISSION ON THE LUNAR SURFACE SINCE 1972
Sergio Santa Maria, NASA Ames Research Center, Pittsburg, United States

IAC-24.A3.2A.4

VIPER ROVER: FLIGHT BUILD AND ENVIRONMENTAL TEST STATUS
Daniel Andrews, National Aeronautics and Space Administration (NASA), Mountain View, United States

IAC-24.A3.2A.5

SMART LANDER FOR INVESTIGATING MOON (SLIM) : RESULTS FROM THE MOON LANDING
Prof. Shinichiro Sakai, ISAS/JAXA, Sagami-hara-shi, Kanagawa, Japan

IAC-24.A3.2A.6

MOONLIGHT COMMUNICATION & NAVIGATION SERVICES AND APPLICATIONS
Wael El-Dali, European Space Agency (ESA), Didcot, United Kingdom

IAC-24.A3.2A.7

INTRODUCING ISPACE EUROPE'S MICRO-ROVER AND ITS CONTRIBUTIONS TO LUNAR SCIENCE AND PAYLOAD DELIVERY
Sophia Casanova, ispace, inc., Luxembourg, Luxembourg

IAC-24.A3.2A.8

MULTIPLE ASPECTS OF PRESERVING LUNAR SPACE HERITAGE
Todd Mosher, Morrison, United States

IAC-24.A3.2A.9

EURO2MOON: LEVERAGE LUNAR RESOURCES UTILISATION TO FOSTER INTERNATIONAL COLLABORATION AND BENEFIT SUSTAINABILITY IN SPACE AND EARTH

Pierre-Alexis Joumel, Airbus Defence and Space, Immenstaad, Germany

IAC-24.A3.2A.10

ILEWG LUNEX EUROMOONMARS RECENT HIGHLIGHTS: DATA ANALYSIS, INSTRUMENTS, UPCOMING LUNAR MISSIONS AND ASTRONAUTS PREPARATION

Bernard Foing, ILEWG "EuroMoonMars", Wassenaar, The Netherlands

IAC-24.A3.2A.11

DEVELOPMENT STATUS IN 2024 ON LUNAR POLAR EXPLORATION (LUPEX) PROJECT

Hiroyasu Mizuno, Japan Aerospace Exploration Agency (JAXA), Tsukuba, Japan

A3.2B. Moon Exploration – Part 2

October 15 2024, 15:00 — Space Hall 1

Co-Chair(s): Bernard Foing, ILEWG "EuroMoonMars", The Netherlands; David Korsmeyer, National Aeronautics and Space Administration (NASA), Ames Research Center, United States

Rapporteur(s): Pierre-Alexis Joumel, Airbus Defence and Space, Germany; Nadeem Ghafoor, Avalon Space, Canada

IAC-24.A3.2B.1

CAPSTONE: A HIGHLY SUCCESSFUL MISSION DEMONSTRATING AUTONOMOUS NAVIGATION AND OPERATIONS TECHNOLOGIES IN THE CISLUNAR DOMAIN

Thomas Gardner, Advanced Space, Westminster, United States

IAC-24.A3.2B.2

ARGONAUT LDE – EUROPEAN ACCESS TO THE MOON

Alexander Cropp, ESA, Noordwijk, The Netherlands

IAC-24.A3.2B.3

DEPLOYMENT METHOD OF THE LUNAR GLOBAL POSITIONING SATELLITE CONSTELLATION ON DRO IN CISLUNAR SPACE

Renyong Zhang, Technology and Engineering Center for Space Utilization, Chinese Academy of Sciences, Beijing, China

IAC-24.A3.2B.4

TAIWAN'S LUNAR PAYLOAD DEVELOPMENT AND ITS OUTSOURCED TRANSPORTATION SERVICES

Shin-Fa Lin, Taiwan Space Agency (TASA), Hsinchu, Taipei

IAC-24.A3.2B.5

VALIDATION OF THE LUNAR MISSION COLMENA-1 IN DEEP SPACE

Prof. Gustavo Medina Tanco, Universidad Nacional Autónoma de México (UNAM), Mexico, Mexico

IAC-24.A3.2B.6

LUWEX VALIDATION OF LUNAR WATER EXTRACTION AND PURIFICATION TECHNOLOGIES FOR IN-SITU PROPELLANT AND CONSUMABLES PRODUCTION

Monika Brandić Lipińska, Newcastle University, Gateshead, United Kingdom

IAC-24.A3.2B.7

DUST MEASUREMENT OPPORTUNITIES FROM THE LUNAR GATEWAY: A SCIENCE BASED APPROACH

Veerle Sterken, ETHZ, Bern, Switzerland

IAC-24.A3.2B.8

LUMIO: DETECTING METEOROID IMPACTS ON THE LUNAR SURFACE

Francesco Toppo, Politecnico di Milano, Milan, Italy

IAC-24.A3.2B.9

LUNAR SCIENCE PRECURSOR MISSION AND LANDER-MOUNTED SOLAR TOWER SYSTEM

Osamu Mori, Japan Aerospace Exploration Agency (JAXA), Sagami, Japan

IAC-24.A3.2B.10

LUNAR SEISMOMETERS: PAST, PRESENT AND FUTURE

Gabriel Pont, Centre National d'Etudes Spatiales (CNES), Toulouse, France

IAC-24.A3.2B.11

DEVELOPMENT OF A SEMI-AUTONOMOUS MICROROVER FOR LUNAR NIGHT SURVIVAL

Mehmed Yüksel, DFKI GmbH, Robotics Innovation Center, Bremen, Germany

IAC-24.A3.2B.12

THE CANADIAN LUNAR ROVER: A ROVER MISSION TO THE SOUTH POLE OF THE MOON

Gordon Osinski, University of Western Ontario (UWO), Canada, Canada

IAC-24.A3.2B.13

FIRST OPERATIONS IN THE ESA-DLR LUNA ANALOG FACILITY

Thomas Uhlig, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Oberpfaffenhofen, Germany

IAC-24.A3.2B.14

INTERNATIONAL LUNAR UNIVERSITY: THE DAWN OF INTERPLANETARY EDUCATION

Jacob Cohen, NASA Ames Research Center, Moffett Field, California, United States

A3.2C. Moon Exploration – Part 3

October 18 2024, 13:45 — Space Hall 1

Co-Chair(s): Bernard Foing, ILEWG "EuroMoonMars", The Netherlands; David Korsmeyer, National Aeronautics and Space Administration (NASA), Ames Research Center, United States

Rapporteur(s): Sylvie Espinasse, European Space Agency (ESA), The Netherlands; Nadeem Ghafoor, Avalon Space, Canada

IAC-24.A3.2C.1

ILOA CONTINUES PURSUIT FOR OBSERVATIONS AND COMMUNICATIONS WITH ILO-1 MISSION AFTER ILO-X PRECURSOR LANDED ON MOON

Steve Durst, International Lunar Observatory Association (ILOA), Kamuela, United States

IAC-24.A3.2C.2

DEVELOPMENT STATUS OF ORACLE, THE ISRU DEMONSTRATOR FOR OXYGEN EXTRACTION ON THE MOON

Francesco Latini, Italian Space Agency (ASI), Roma, Italy

IAC-24.A3.2C.3

REGENERATIVE FUEL CELL SYSTEM (RFCS) FOR ENERGY STORAGE AND PROVISION DURING LUNAR NIGHT SURVIVAL

CEDRIC DUPONT, Air Liquide, Sassenage, France

IAC-24.A3.2C.4

ENABLING COST-EFFECTIVE LUNAR EXPLORATION BY LEVERAGING FLEXIBLE AND MODULAR ROVER DESIGNS.

Fernando Gandía Abellán, GMV Aerospace & Defence SAU, Spain, Tres Cantos, Spain

IAC-24.A3.2C.5

ADVANCING ANALOG ASTRONAUT TRAINING AND LUNAR HABITAT RESEARCH: INSIGHTS FROM EURO MOON MARS MISSION

Upasana Mohanty, Université de Nantes, Saint Nazaire, France

IAC-24.A3.2C.7

JAXA'S CONCEPT OF A LUNAR ISRU PLANT

Jun Shimada, Japan Aerospace Exploration Agency (JAXA), Tokyo, Japan

IAC-24.A3.2C.8

LUNAR COMMUNICATIONS SERVICES – ABOUT TO TAKE OFF!

Philip Davies, Surrey Satellite Technology Ltd (SSTL), West Byfleet, Surrey, United Kingdom

IAC-24.A3.2C.9

LUNAR ZEBRO – AN AUTONOMOUS MOON ROVER
Raj Thilak Rajan, Delft University of Technology (TU Delft), Delft, The Netherlands

IAC-24.A3.2C.10

LUNARLEAPER - A MISSION CONCEPT TO EXPLORE THE LUNAR SUBSURFACE WITH A SMALL-SCALE LEGGED ROBOT
Hendrik Kolvenbach, ETHZ, Zürich, Switzerland

IAC-24.A3.2C.11

LUNEX PROSPER: THE NEXT GENERATION'S BLUEPRINT TOWARDS A SUSTAINABLE HUMAN PRESENCE ON THE MOON
Gabor Tatar, Ålta, Sweden; Natacha Hughes, University of Toronto Aerospace Team (UTAT), Oakville, Canada; Sheida Goudarzi, Space Exploration Project group, Space Generation Advisory Council (SGAC), Tehran, Iran; Paulina Valle, Space Generation Advisory Council (SGAC), Saltillo, Mexico; KangSan Kim, Space Generation Advisory Council (SGAC), Incheon, Korea, Republic of; Agnieszka Elwertowska, Space Generation Advisory Council (SGAC), Warszawa, Poland; Deep Anand, Vellore Institute of Technology, New Delhi, India

IAC-24.A3.2C.12

PHOENIX: NOVEL PORTABLE HANDHELD COMBINED SPECTROMETERS FOR LUNAR SURFACE EXPLORATION
Andoni G. Moral, National Institute for Aerospace Technology (INTA), Torrejón de Ardoz (Madrid), Spain

IAC-24.A3.2C.13

PROSPECTS FOR LUNAR EXPLORATION: TOWARDS A NEW ERA OF COLLABORATION AND COMPETITION
Candice Massucci-Templier, Euroconsult, Courbevoie, France

IAC-24.A3.2C.14

HABITABILITY TO THE MOON AND BEYOND: "LESSONS LEARNED FROM THE ASTRONAUTS"
Bernard Foing, ILEWG "EuroMoonMars", Wassenaar, The Netherlands

IAC-24.A3.2C.15

HARMONISE RECYCLING AND REPURPOSING OF HARDWARE FOR MOON AND MARTIAN HABITATS
René Waclavicek, LIQUIFER Systems Group, Vienna, Austria

A3.3A. Mars Exploration – missions current and future

October 16 2024, 10:15 — Space Hall 1

Co-Chair(s): Vincenzo Giorgio, Thales Alenia Space Italia, Italy; Pierre W. Bousquet, Centre National d'Études Spatiales (CNES), France

Rapporteur(s): Amalia Ercoli Finzi, Politecnico di Milano, Italy; Cheryl L.B. Reed, Northrop Grumman Corporation, United States

IAC-24.A3.3A.1

ROSALIND FRANKLIN MISSION: A NEW MISSION FOR EXOMARS.
Stefano Voglino, Thales Alenia Space Italia, Turin, Italy

IAC-24.A3.3A.2

EXOMARS PANCAM 3D VISION AND VISUALIZATION
Gerhard Paar, Joanneum Research, Graz, Austria

IAC-24.A3.3A.3

MA_MISS SPECTROMETR ON ROSALIND FRANKLIN ROVER FOR THE EXPLORATION OF THE MARTIAN SUBSURFACE
Maria Cristina De Sanctis, INAF - Istituto Nazionale di AstroFisica, Rome, Italy; Lorenzo Rossi, INAF-IAPS, Roma, Italy

IAC-24.A3.3A.4

THE DRILL OF THE ROSALIND FRANKLIN ROVER AS A SCIENCE INSTRUMENT TO CHARACTERIZE THE MARTIAN SUBSURFACE
Lorenzo Rossi, INAF-IAPS, Roma, Italy

IAC-24.A3.3A.5

INTERNATIONAL MARS ICE MAPPER MISSION: A STEP FORWARD TO MAP THE SUBSURFACE WATER ICE AND PREPARE FUTURE HUMAN MARS EXPLORATION
Marilena Amoroso, Italian Space Agency (ASI), MATERA, Italy

IAC-24.A3.3A.6

INSIGHTS ON MAGNETOMETER OBSERVATIONS OF MARTIAN DUST DEVILS
David Reid, University of Bristol, Bristol, United Kingdom

IAC-24.A3.3A.7

QUANTITATIVE ASSESSMENT OF THE MASS-SAVING DERIVED FROM MARS AEROCAPTURE MANEUVERS
Valerio Orlandini, University of Rome "La Sapienza", Roma, Italy

IAC-24.A3.3A.8

ACTIVITIES OF DELTADOR INTEROPERABILITY AND CROSS SUPPORT AT CHINA DEEP SPACE NETWORK
Songtao Han, Beijing Aerospace Control Center (BACC), Beijing, China

IAC-24.A3.3A.9

MARS ATMOSPHERE SOUNDING BALLOON: SCIENCE CASE AND SYSTEM DESIGN
Lars Witte, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Bremen, Germany

IAC-24.A3.3A.10

DECIPHERING THE MARTIAN RECORD: UTILIZING IN-SITU CHARACTERIZATION AND SOFTWARE MODELING FOR A COMPREHENSIVE MINERALOGICAL ANALYSIS
Sarath Raj Nadarajan Syamala, Amity University, Dubai, Dubai, United Arab Emirates

IAC-24.A3.3A.12

ENHANCING AGRICULTURAL FEASIBILITY ON MARS: MACHINE LEARNING-BASED CLASSIFICATION OF MARTIAN SOIL TYPES USING CRISM HYPERSPECTRAL MINERAL DATA
Yael E. Castrejón-Ocampo, Instituto Politécnico Nacional, Mexico City, Mexico

IAC-24.A3.3A.13

ANALYSIS OF DESIGN CONCEPTS FOR MARS UNMANNED AERIAL VEHICLES
Wei Han, Politecnico di Torino, Torino, Italy

IAC-24.A3.3A.14

NAVIGATING MARS WITH AN AIRSHIP - A NOVEL WAY TO EXPLORE THE RED PLANET
Koki Kimura, Ecole Polytechnique Fédérale de Lausanne (EPFL), Chavannes-près-Renens, Switzerland

IAC-24.A3.3A.15

SUBORBITAL FLIGHT DEMONSTRATION FOR DE-RISKING THE ENTRY, DESCENT, AND LANDING SEQUENCE OF A TUMBLEWEED MARS ROVER
Guillaume Brault, Team Tumbleweed, Paris, France

IAC-24.A3.3A.16

SYSTEMATIC SELECTION OF THE NEXT GENERATION MARTIAN ROTORCRAFT CONFIGURATIONS
Vishal Youhanna, Cranfield University, UK, Cranfield, United Kingdom

A3.3B. Mars Exploration – Science, Instruments and Technologies

October 16 2024, 15:00 — Space Hall 1

Co-Chair(s): Vincenzo Giorgio, Thales Alenia Space Italia, Italy; Pierre W. Bousquet, Centre National d'Études Spatiales (CNES), France

Rapporteur(s): Amalia Ercoli Finzi, Politecnico di Milano, Italy; Cheryl L.B. Reed, Northrop Grumman Corporation, United States

IAC-24.A3.3B.1

MARS SAMPLE RETURN – STATUS OF THE EARTH RETURN ORBITER MISSION
Tiago Loureiro, European Space Agency (ESA), Noordwijk, The Netherlands

IAC-24.A3.3B.2

KEEPING IT SIMPLE: A SINGLE LAUNCH MARS SAMPLE RETURN MISSION CONCEPT
James Green, Space Science Endeavors, Silver Spring, United States

IAC-24.A3.3B.3

RENDEZVOUS WITH ORBITING MARS SAMPLES -- SYSTEM DESIGN AND OPERATIONS APPROACH.

Tiago Loureiro, European Space Agency (ESA), Noordwijk, The Netherlands

IAC-24.A3.3B.4

SAMPLE TRANSFER ARM FOR MARS SAMPLE RETURN MISSION

Francesco Cavenago, Leonardo S.p.A, Nerviano, Italy

IAC-24.A3.3B.6

DESIGN AND IMPLEMENTATION OF RADIO OPEN-LOOP SIGNAL EXTRACTING (ROSE) SOFTWARE FOR MARS EXPLORATION

Songtao Han, Beijing Aerospace Control Center (BACC), Beijing, China

IAC-24.A3.3B.7

BRIDGING THE GAP: EXPLORING THE CHALLENGES AND OPPORTUNITIES OF EARTH-MARS COMMUNICATION

Abdalla Shaker Abdalla, Egyptian Space Agency (EgSA), Mokattam, Cairo., Egypt

IAC-24.A3.3B.9

BESIDES (BIOMOLECULAR SIGNATURE DETECTION SYSTEM): A LAB-ON-CHIP-BASED ANALYTICAL PLATFORM FOR LIFE BIOMARKERS DETECTION IN ASTROBIOLOGY INVESTIGATIONS

Mara Mirasoli, Alma Mater Studiorum - University of Bologna, Bologna, Italy

IAC-24.A3.3B.11

PLANETARY PROTECTION TRADES AND LESSONS LEARNED FROM DESIGNING MARS SAMPLE RETURN'S CAPTURE, CONTAINMENT & RETURN SYSTEM

Giuseppe Cataldo, National Aeronautics and Space Administration (NASA), Goddard Space Flight Center, Greenbelt, United States

IAC-24.A3.3B.12

A COLLABORATIVE ROBOTIC SYSTEM FOR ENTERING AND MAPPING MARTIAN CAVES

Venkata Aakanksha Devaguptapu, Cranfield University, Cranfield UK, Bedfordshire, United Kingdom; Aditi Nair, Cranfield University, Cranfield UK, Bedford, United Kingdom

IAC-24.A3.3B.13

PHASE-A DESIGN OF A MARS EXPLORATION AERIAL VEHICLE

Gennaro Barbato, Università degli Studi della Campania "Luigi Vanvitelli", Aversa, Italy

IAC-24.A3.3B.14

PROPOSAL FOR THE DESIGN OF A HEXAPOD ROBOT WITH FLIGHT CAPABILITY FOR THE EXPLORATION OF DIFFICULT TERRAIN ON MARS

Alejandro José Agapito Quiñones, Universidad Nacional de Ingeniería (Lima, Perú), Lima, Peru

IAC-24.A3.3B.15

DEVELOPMENT AND PERFORMANCE OF A DOWNHOLE MODULE FOR MARTIAN DEEP DRILLING AND EXCAVATION

Krzysztof Bzdyk, School of Engineering, University of Glasgow, Glasgow, United Kingdom

IAC-24.A3.3B.16

ENHANCED MADDPG WITH ENERGY AWARENESS FOR COOPERATIVE PATH PLANNING OF UAV AND UGV ON MARS

Mahya Ramezani, University of Luxembourg, BERTRANGE, Luxembourg

A3.4A. Small Bodies Missions and Technologies (Part 1)

October 17 2024, 10:15 — Space Hall 1

Co-Chair(s): Stephan Ulamec, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany; Cheryl L.B. Reed, Northrop Grumman Corporation, United States

Rapporteur(s): Norbert Frischaut, TU Graz, Austria; Marc D. Rayman, NASA Jet Propulsion Laboratory, United States

IAC-24.A3.4A.1

MISSION EXTENSION OF HAYABUSA2 FOR PLANETARY DEFENSE, SMALL BODY FLYBY AND RENDEZVOUS SCIENCES

Yuichi Tsuda, Japan Aerospace Exploration Agency (JAXA), Sagami-hara, Kanagawa, Japan

IAC-24.A3.4A.2

VISUAL FEEDBACK ATTITUDE MANEUVER FOR HAYABUSA2 ASTEROID FLYBY OBSERVATION

Fuyuto Terui, Kanagawa Institute of Technology, Atsugi, Japan

IAC-24.A3.4A.3

LAUNCH YEAR CHANGE OF MARTIAN MOONS EXPLORATION (MMX) AND ITS RECENT STATUS

Yasuhiro Kawakatsu, Japan Aerospace Exploration Agency (JAXA), ISAS, Sagami-hara, Kanagawa, Japan

IAC-24.A3.4A.4

MARS MOONS' EXPLORER (MMX) INFRARED SPECTROMETER (MIRS) OPERATIONS CONCEPTS, OBSERVATION STRATEGIES AND EXPECTED MISSION PERFORMANCES

Eric Sawyer, Centre National d'Etudes Spatiales (CNES), Toulouse, France

IAC-24.A3.4A.5

THE MMX ROVER IDEFIX: GETTING READY FOR LAUNCH AND PREPARING SCIENCE OPERATIONS

Stephan Ulamec, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Cologne, Germany

IAC-24.A3.4A.6

THE ESA HERA MISSION TO THE BINARY NEAR-EARTH ASTEROID (65803) DIDYMOS: READY FOR LAUNCH IN OCTOBER 2024

Patrick Michel, University of Nice-Sophia Antipolis, CNRS, Observatoire de la Côte d'Azur, Nice, France

IAC-24.A3.4A.7

HERA CUBESATS TRAJECTORY DESIGN AND MISSION PLANNING CONCEPT FOR DIDYMOS BINARY ASTEROID CHARACTERIZATION

Pamini ANNAT, Centre National d'Etudes Spatiales (CNES), Toulouse, France

IAC-24.A3.4A.8

THE ESA RAMSES MISSION CONCEPT: A RENDEZVOUS WITH THE ASTEROID APOPHIS DURING ITS CLOSE ENCOUNTER WITH EARTH IN 2029.

Patrick Michel, University of Nice-Sophia Antipolis, CNRS, Observatoire de la Côte d'Azur, Nice, France

IAC-24.A3.4A.9

HERA GNC SUBSYSTEM AND ITS MODIFICATIONS TOWARDS RAMSES

Mariella Graziano, GMV Aerospace & Defence SAU, Tres Cantos, Spain

IAC-24.A3.4A.10

SCIENTIFICALLY STRENGTHENING AN ASTEROID MISSION WITH SMALL PROBES ON RAMSES AS USE CASE

Tra Mi Ho, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Institute of Space Systems, Bremen, Germany

IAC-24.A3.4A.11

SIMULATION AND ESTIMATION OF THE MASS SHIFTS DURING THE (99942) APOPHIS EARTH FLYBY

Hai-Shuo Wang, University of Colorado Boulder, Boulder, United States

IAC-24.A3.4A.12

CONCEPT STUDY FOR JAPANESE COMET SAMPLE RETURN EXPLORATION IN THE 2030S

Takanao Saiki, Japan Aerospace Exploration Agency (JAXA), Sagami-hara, Kanagawa, Japan

A3.4B. Small Bodies Missions and Technologies (Part 2)

October 18 2024, 10:15 — Space Hall 1

Co-Chair(s): Stephan Ulamec, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany; Cheryl L.B. Reed, Northrop Grumman Corporation, United States

Rapporteur(s): Marc D. Rayman, NASA Jet Propulsion Laboratory, United States; Norbert Frischauf, TU Graz, Austria

IAC-24.A3.4B.1

COMET INTERCEPTOR: AN ESA MISSION TO A YET UNIDENTIFIED TARGET

Joan Pau Sanchez Cuartielles, ISAE-Supaero University of Toulouse, Castanet Tolosan, France

IAC-24.A3.4B.2

DIANA, A COMETARY DUST IN-SITU ANALYZER FOR TIANWEN-2 MISSION: THERMOMECHANICAL DESIGN

Chiara Martina, Politecnico di Milano, ASSO, Italy; Prof.Diego Scaccabarozzi, Politecnico di Milano, Milan, Italy

IAC-24.A3.4B.3

THE EMIRATES MISSION TO THE ASTEROID BELT: SCIENCE OVERVIEW

Noora AlSaeed, United Arab Emirates Space Agency, Abu Dhabi, United Arab Emirates

IAC-24.A3.4B.4

EMIRATES MISSION TO ASTEROID BELT SPACECRAFT ARCHITECTURE

Mohammed Alameri, UAE Space Agency, Abu Dhabi, United Arab Emirates

IAC-24.A3.4B.5

CONCEPT OF OPERATIONS FOR EMIRATES MISSION TO EXPLORE THE ASTEROID BELT

Shahad Badri, UAE Space Agency, Dubai, United Arab Emirates

IAC-24.A3.4B.6

SCIENTIFIC AND TECHNOLOGICAL OBJECTIVES FOR THE NAVCAM PAYLOAD OF HERA'S MILANI CUBESAT TO BINARY ASTEROID DIDYMOS

Iosto Fodde, Politecnico di Milano, Milan, Italy

IAC-24.A3.4B.7

HERA 3D GEOGRAPHICAL INFORMATION SYSTEM

Gerhard Paar, Joanneum Research, Graz, Austria

IAC-24.A3.4B.8

MULTI-STATIC RADAR TOMOGRAPHY OF SMALL BODIES WITH MICRO-MINIATURE SOLAR SAILS

Ahmed Kiyoshi Sugihara El Maghraby, Japan Aerospace Exploration Agency (JAXA), Sagamiyara City, Japan

IAC-24.A3.4B.9

CUBESAT PARADIGM EXPLOITATION FOR DEIMOS MOON SCIENTIFIC INVESTIGATION: THE TASTE MISSION PHASE B ACTIVITIES

Michèle Lavagna, Politecnico di Milano, Milan, Italy

IAC-24.A3.4B.10

DEIMOS IN-SITU SCIENCE: THE TASTE CUBESAT LANDER REGOLITH SAMPLING SUBSYSTEM

Alice Dottori, Politecnico di Milano, Milan, Italy

IAC-24.A3.4B.11

NUCLEAR ORBITAL COMPLEX "NUKLON": NEAR-EARTH ASTEROID MISSION SCENARIO

Dmitry Zarubin, Space Research Institute (IKI), Russian Academy of Sciences (RAS), Moscow, Russian Federation

A3.5. Solar System Exploration including Ocean Worlds

October 17 2024, 15:00 — Space Hall 1

Co-Chair(s): Mariella Graziano, GMV Aerospace & Defence SAU, Spain; Junichiro Kawaguchi, Australian National University (ANU), Australia

Rapporteur(s): Charles E. Cockrell Jr., National Aeronautics and Space Administration (NASA), United States; Gabriel Pont, Centre National d'Etudes Spatiales (CNES), France

IAC-24.A3.5.1

FROM SATURN V TO THE SLS: LEARNING FROM THE PAST TO OPTIMIZE FUTURE SPACE MISSIONS

James Green, Space Science Endeavors, Silver Spring, United States

IAC-24.A3.5.2

BEPICOLOMBO: THE NEW EXPLORATION OF MERCURY

Gabriele Cremonese, INAF - Osservatorio astronomico di Padova, Padova, Italy

IAC-24.A3.5.3

THE MERCURY ORBITER RADIO SCIENCE EXPERIMENT OF THE BEPICOLOMBO MISSION

Ivan Di Stefano, Sapienza University of Rome, Rome, Italy

IAC-24.A3.5.4

DESIGN AND ARCHITECTURE OF ANUBIS: A HOPPER TO SAMPLE AND STUDY MERCURY'S SURFACE AND SUBSURFACE

Aurora Cagnoni, Politecnico di Milano, Tolmezzo, Italy

IAC-24.A3.5.5

THE ENVISION MISSION: UNDERSTANDING WHY EARTH'S CLOSEST NEIGHBOUR IS SO DIFFERENT

Anne Pacros, ESA - European Space Agency, Noordwijk, The Netherlands

IAC-24.A3.5.6

MODELING AND ANALYSIS OF TETHERED SYSTEM DYNAMICS FOR VENUS AEROBOTS AND TOWED PROBES

Pierluigi Vergari, Politecnico di Torino, Botrugno, Italy; Matteo De Matteis, Politecnico di Torino, Turin, Italy

IAC-24.A3.5.7

REAL TIME DATA-BASED WIND MODEL FOR A VENUS AEROBOT: DEVELOPMENT AND TESTING

Camilla Bandinelli, Politecnico di Torino, Firenze, Italy

IAC-24.A3.5.8

INVESTIGATION OF DESIGN CHARACTERISTICS OF A LANDER FOR MAKING A MANEUVERABLE DESCENT TO THE VENUS SURFACE

Anastasia Kosenkova, Bauman Moscow State Technical University, Moscow, Russian Federation

IAC-24.A3.5.9

AN SLS LAUNCHED TITAN BALLOON-SPACECRAFT MISSION

Michael Elsperman, The Boeing Company, HOUSTON, United States

IAC-24.A3.5.10

HABITABILITY POTENTIAL OF ICY MOONS AROUND GIANT PLANETS AND THEIR FUTURE EXPLORATION WITH JUICE AND OTHER MISSIONS

Athena Coustenis, LESIA - Observatoire de Paris, MEUDON, France

IAC-24.A3.5.11

THE OCEANIC WORLD BEANTEH THE SURFACE OF ENCELADUS AND APPLICATION OF HYDROTHERMAL VENTS

Amirmohsen Pazireh, Warsaw University of Technology (WUT), Warsaw, Poland

IAC-24.A3.5.12

TAILORING INFRARED FILTERS FOR GLOBAL MAPPING OF ENCELADUS' SURFACE TEMPERATURES

Duncan Lyster, University of Oxford, Ross-on-Wye, United Kingdom

IAC-24.A3.5.13

NOMAD: NEPTUNE ORBITER MISSION FOR AURORAL DETECTION

Jelmar Gerritsen, Delft University of Technology (TU Delft), Zetten, The Netherlands; Danny Tjokrosetio, Team Tumbleweed, Delft, The Netherlands

A4. 53rd IAA SYMPOSIUM ON THE SEARCH FOR EXTRATERRESTRIAL INTELLIGENCE (SETI) – The Next Steps

Coordinator(s): Mike Garrett, University of Manchester, United Kingdom; Andrew Siemion, Berkeley SETI Research Center, United States

A4.1. SETI 1: SETI Science and Technology

October 15 2024, 10:15 — White Hall 1

Co-Chair(s): Patrizia Caraveo, INAF, Italy

IAC-24.A4.1.1

KEYNOTE: "PESEK LECTURE" - EARLY RESULTS FROM BREAKTHROUGH LISTEN'S AUTOMATED COMMENSAL TECHNOSIGNATURE SURVEY AT MEERKAT

Daniel Czech, University of California, Berkeley, United States

IAC-24.A4.1.2

UTILIZING INTERNATIONAL OBSERVATORIES IN THE BREAKTHROUGH LISTEN QUEST FOR EXTRATERRESTRIAL INTELLIGENCE

Vishal Gajjar, SETI Institute, Berkeley, United States

IAC-24.A4.1.3

SETI PROGRAM AT THE SARDINIA RADIO TELESCOPE

Maura Pilia, INAF - Istituto Nazionale di AstroFisica, Selargius, Italy

IAC-24.A4.1.4

HIGHEST RADIO FREQUENCY TECHNOSIGNATURE SEARCHES WITH THE SARDINIA RADIO TELESCOPE

Lorenzo Manunza, Berkeley SETI Research Center, Sestu, Italy

IAC-24.A4.1.5

SEARCHING FOR ETI WITH FAST: THE CURRENT STATUS AND THE FUTURE

Bolun Huang, Beijing Normal University, Chenzhou, China

IAC-24.A4.1.6

THE UPGRADED ALLEN TELESCOPE ARRAY: A DEDICATED RADIO SETI FACILITY

Wael Farah, SETI Institute, Hat Creek, United States

IAC-24.A4.1.7

BLADE: ALLEN TELESCOPE ARRAY GPU ACCELERATED REAL-TIME BEAMFORMER

Luigi Cruz, SETI Institute, Hat Creek, United States

IAC-24.A4.1.8

IMAGE PLANE SETI WITH MODERN INTERFEROMETERS

Joe Bright, University of Oxford, Oxford, United Kingdom

IAC-24.A4.1.9

LINDY'S TECHNOSIGNATURES

Claudio Grimaldi, Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland

IAC-24.A4.1.10

SIMULATION OF THE EARTH'S RADIO-LEAKAGE FROM MOBILE TOWERS AS SEEN FROM SELECTED NEARBY STELLAR SYSTEMS

Ramiro Saide, University of Manchester, Manchester, United Kingdom

IAC-24.A4.1.11

SELF-REPLICATING PROBES ARE A RELIABLE STRATEGY FOR ETI

Alex Ellery, Carleton University, Space Exploration and Engineering Group, Ottawa, Canada

IAC-24.A4.1.12

RFI REJECTION IN MULTI-BEAM RECEIVERS USING A CNN: A PATH TO IDENTIFYING ETI SIGNALS

Karen Perez, Columbia University, New York, United States

IAC-24.A4.1.13

FINE-TUNING THE NARROWBAND SETI SIGNAL PROCESSING PIPELINE

Kenneth Houston, University of California, Berkeley, Francetown, New Hampshire, United States

A4.2. SETI 2: SETI and Society

October 15 2024, 15:00 — White Hall 1

Co-Chair(s): John Elliott, SUPA, University of St Andrews, United Kingdom

IAC-24.A4.2.1

KEYNOTE: "BILLINGHAM CUTTING-EDGE LECTURE" - GLOBAL OUTREACH AND CULTURAL IMPACT OF A SIGN IN SPACE, AN INTERDISCIPLINARY SIMULATION OF A FIRST CONTACT SCENARIO

Daniela De Paulis, Rotterdam, The Netherlands

IAC-24.A4.2.2

SILENT STARS, AWAKENING MINDS: AI'S POTENTIAL ROLE IN RESOLVING THE FERMI PARADOX

Mike Garrett, University of Manchester, Manchester, United Kingdom

IAC-24.A4.2.3

CAUSAL IMPOTENCE AND COSMIC MESSAGING: A LOGICAL RESPONSE TO THE BARN DOOR ARGUMENT

Chelsea Haramia, University of Bonn, Bonn, Germany

IAC-24.A4.2.4

THE "TOULOUSE REBOOT": OPENING A NEW ERA IN THE STUDIES ON INTERSTELLAR MESSAGES

Paolo Musso, InCosmiCon Research Center, Torino, Italy

IAC-24.A4.2.5

STATE RESPONSIBILITY FOR FIRST CONTACT UNDER INTERNATIONAL LAW

Andrea Harrington, Institute of Air and Space Law, McGill University, Montreal, QC, Canada

IAC-24.A4.2.6

THE FUTURE OF THE SETI POST-DETECTION PROTOCOLS: PROGRESS TOWARDS REVISIONS

Leslie I. Tennen, Law Offices of Sterns and Tennen, Glendale, Arizona, United States

IAC-24.A4.2.8

AN ACTIVE AND COMMUNITY-BASED APPROACH TO INCLUSIVE DEBATES IN SETI ETHICS

Julia DeMarines, University of California, Berkeley, Oakland, United States

IAC-24.A4.2.9

MOON FARSIDE REGULATED BY A UNITED NATIONS TREATY

Claudio Maccone, International Academy of Astronautics (IAA), Torino, Italy

IAC-24.A4.2.11 (unconfirmed)

ARTIFICIAL INTELLIGENCES (AIs) COULD POTENTIALLY SERVE AS THE CATALYST FOR THE FIRST CONTACT BETWEEN OUR SOCIETY AND AN ALIEN ONE.

Giorgio Gaviraghi, Unispace Exponential Creativity, verbania, Italy

IAC-24.A4.2.12

POSSIBLE EXTRATERRESTRIAL FOCAL SETI AND ITS IMPLICATIONS FOR TERRESTRIAL SETI

Paolo Musso, InCosmiCon Research Center, Torino, Italy

IAC-24.A4.2.14

PLURALITY IN POST DETECTION SCENARIOS

Kate Genevieve, University of Sussex, Aotearoa/New Zealand, United Kingdom

A5. 27th IAA SYMPOSIUM ON HUMAN EXPLORATION OF THE SOLAR SYSTEM

Coordinator(s): Christian Sallaberger, Canadensys Aerospace Corporation, Canada; Maria Antonietta Perino, Thales Alenia Space Italia, Italy

A5.1. Human Exploration of the Moon and Cislunar Space

October 16 2024, 10:15 — Orange Hall 3

Co-Chair(s): Nadeem Ghafoor, Avalon Space, Canada; Greg Chavers, NASA MSFC, United States

Rapporteur(s): Marc Haese, DLR, German Aerospace Center, Germany; Henrik Petersson, Swedish Space Corporation (SSC), Sweden

IAC-24.A5.1.1

LUNAR GATEWAY ESPRIT REFUELING MODULE (ERM) FEATURES, STATUS AND OUTLOOK

Thierry Kachler, ESA - European Space Agency, Noordwijk, The Netherlands

IAC-24.A5.1.3

EVOLUTION FROM COL-CC TO HECC – THE NEXT STEP IN HUMAN SPACEFLIGHT OPERATIONS

Stefan Neumann, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Wessling, Germany

IAC-24.A5.1.4

NASA'S DEVELOPMENT OF ADVANCED SPACE SUITS FOR LUNAR EXPLORATION

Shane McFarland, National Aeronautics and Space Administration (NASA), Johnson Space Center, Santa Barbara, United States

IAC-24.A5.1.5

UPDATE ON NASA'S ISRU DEVELOPMENT AND MISSION PLANS FOR THE ARTEMIS PROGRAM

Gerald Sanders, National Aeronautics and Space Administration (NASA), Johnson Space Center, Houston, TX, United States

IAC-24.A5.1.6

INTERNATIONAL LUNAR YEAR 2027: ADVANCING LUNAR SCIENCE AND EXPLORATION GLOBALLY

Rachel Klima, Johns Hopkins University Applied Physics Laboratory, Laurel, United States

IAC-24.A5.1.7

LCNS – ADVANCED DELAY TOLERANT NETWORK TESTBED

Antonio Giugliano, Telespazio S.p.A., Rome, Italy

IAC-24.A5.1.8 (unconfirmed)

EXTENSIBILITY OF SOFTGOODS TECHNOLOGY FOR THE LUNAR SURFACE

Michayal Mathew, Sierra Space, Arvada, United States

IAC-24.A5.1.9

WHY RETURNING HUMANS TO THE MOON TAKES LONGER DESPITE 50 YEARS OF ADVANCEMENT, FOSTERING EXTRAORDINARY PROJECTS

Antoine Faddoul, Tony Sky Designs Group, New York, United States

IAC-24.A5.1.10

ARE 'SAFETY ZONES' THE ANSWER? AN EXAMINATION OF THE OPERATION AND LEGAL STATUS OF SAFETY ZONES FOR MOON ACTIVITIES.

Melissa de Zwart, University of Adelaide, Adelaide, Australia

IAC-24.A5.1.11

TRAINING FOR LUNAR EVA EXPLORATION: VIRTUAL REALITY VISUALIZATION OF EARTH'S LAVA TUBES, GUIDING 3D MODELING FOR LUNAR LAVA TUBE MISSION TRAINING AND SIMULATION

Mac Malkawi, Blinc- Borderless lab, York, United States

IAC-24.A5.1.12

CHILL-ICE 3: PRELIMINARY MISSION RESULTS OF WORLD'S LONGEST LAVA TUBE ANALOGUE ASTRONAUT MISSION

Charlotte Pouwels, International Space University (ISU), De Lier, The Netherlands

IAC-24.A5.1.13

SPELEOLOGY ANALOG MISSION CRITICAL SYSTEMS VALIDATION THROUGH RELEVANT ENVIRONMENT TESTS: ADVANCEMENTS FROM THE GEA PROJECT

Alessia Di Giacomo, Sapienza University of Rome, Roma, Italy

IAC-24.A5.1.14

HEALTH BEYOND EARTH: DESIGNING A LUNAR HOSPITAL FOR TOMORROW IN LAVA TUBES

Saira O. Williams, Space Generation Advisory Council (SGAC), San Rafael, Costa Rica

IAC-24.A5.1.15

INTEGRATING HUMAN FACTORS INTO MODEL-BASED SYSTEMS ENGINEERING FOR LUNAR HABITAT ECO-DESIGN: A MULTIDISCIPLINARY APPROACH

Noemi Delfino, Politecnico di Torino, Turin, Italy

IAC-24.A5.1.16

CHARACTERISATION OF COTS SYSTEM-ON-MODULES (SOM) AS ELECTRONIC CONTROL BOARDS (ECB) FOR LUNAR SURFACE APPLICATIONS

Leonardo Turchi, ESA - European Space Agency, Cologne, Germany

IAC-24.A5.1.17

MODEL DEVELOPMENT AND VALIDATION OF THE MOON'S RADIATION ENVIRONMENT AT THE SURFACE AND SUBSURFACE

Akshat Mohite, Thane, India

IAC-24.A5.1.18

USING WALKING POLES TO ASSIST THE MOBILITY OF ASTRONAUTS DURING LUNAR EXTRAVEHICULAR ACTIVITIES

Alejandro J. Garcia Morales, International Institute for astronautical Sciences (IIAS), Miami, United States

A5.2. Human Exploration of Mars

October 16 2024, 15:00 — Orange Hall 3

Co-Chair(s): Maria Antonietta Perino, Thales Alenia Space Italia, Italy; Kathy Laurini, Osare Space Consulting Group, United States

Rapporteur(s): Norbert Frischauf, TU Graz, Austria

IAC-24.A5.2.1

NASA'S TOP HUMAN SYSTEM RESEARCH AND TECHNOLOGY NEEDS FOR MARS

Andrew Abercromby, National Aeronautics and Space Administration (NASA), Houston, United States

IAC-24.A5.2.2

DEVELOPMENT ROADMAP AND MISSION ARCHITECTURE DESIGN FOR HUMAN MARS EXPLORATION MISSION

Xiaowei WANG, China Academy of Launch Vehicle Technology (CALT), Beijing, China

IAC-24.A5.2.3

TECHNOLOGICAL REQUIREMENTS FOR SETTLING MARS

Robert Zubrin, The Mars Society, Golden, United States

IAC-24.A5.2.4

DESIGN OF INTERPLANETARY MISSIONS: AN IMPROVED GRAPHICAL TOOL

Giancarlo Genta, Politecnico di Torino, TORINO, Italy

IAC-24.A5.2.5

JOURNEY TO MARS: CREWED MISSION WITH STARSHIP

Saumya Shekhar, TU Darmstadt, Dieburg, Germany

IAC-24.A5.2.6

MODELING ROBUST MARS SURFACE ARCHITECTURES OVER A BROAD RANGE OF MISSION SCALES

George Lordos, Massachusetts Institute of Technology (MIT), Cambridge, MA, United States

IAC-24.A5.2.8

USING 3D MAP TO IMPROVE ASTRONAUT EFFICIENCY DURING EVA

Alice Chapiron, ISAE - Institut Supérieur de l'Aéronautique et de l'Espace, Toulouse, France

IAC-24.A5.2.9

ACCESSIBILITY STUDY IN ANALOGUE SPACE MISSIONS: ICARES-2 MISSIONS AND CONTROL GROUP FOR PARASTRONAUTS

Eleonore Poli, Centre Suisse d'Electronique et de Microtechnique SA (CSEM), Lausanne, Switzerland

IAC-24.A5.2.10

URBANIZATION OF MARS USING MARTIAN RESOURCES. ARCHITECTURAL AND CONSTRUCTIVE SOLUTIONS FOR LIVING AND WORKING SPACES ON MARS.

Ulvi Azizov, Azerbaijan Architecture and Construction University (SABAH groups), Baku, Azerbaijan

IAC-24.A5.2.11

DESIGNING A MOBILE INFLATABLE HABITAT FOR SUSTAINABLE MARS EXPLORATION.

Manan Gupta, Vellore Institute of Technology, Indore, India; Aakanksha Singh, Vellore Institute of Technology, Uttar Pradesh, India; Ankitha Kamath, Vellore Institute of Technology, Mumbai Suburban, India

IAC-24.A5.2.13

A GREENHOUSE FOR THE FIRST HUMAN MARS MISSION

Giancarlo Genta, Politecnico di Torino, TORINO, Italy

A5.4. Deep Space Habitats and Resources

October 17 2024, 10:15 — Brown Hall 2

Co-Chair(s): Anna Barbara Imhof, Liquifer Systems Group (LSG), Austria; Maria Antonietta Perino, Thales Alenia Space Italia, Italy

Rapporteur(s): Sandra Haeuplik-Meusburger, TU Wien, Austria; Olga Bannova, University of Houston, United States

IAC-24.A5.4.1

LUNAR BASE PLANNING: DRIVING CONSENSUS ON DEVELOPMENT LOGICS INFORMING A MORPHOLOGICAL APPROACH TO LUNAR INFRASTRUCTURE

Melodie Yashar, ICON, Austin, TX, United States

IAC-24.A5.4.2

DESIGN AND DEVELOPMENT OF SMART ARCHITECTURE FOR LUNAR BASES

Jekanthan Thangavelautham, University of Arizona, Tucson, United States

IAC-24.A5.4.3

COMPARATIVE ANALYSIS OF SYSTEMS FOR SUSTAINABLE FOOD PRODUCTION DURING LONG-TERM MISSIONS

Luca Guglielmi, Politecnico di Torino - Thales Alenia Space Italia - ISAE Supaero Toulouse, Bologna, Italy

IAC-24.A5.4.4

TRANSFORMING A LUNAR LAVA TUBE INTO A HABITAT: WHAT'S REQUIRED

Erin Rose, Swinburne University of Technology, Upwey, Australia

IAC-24.A5.4.5

TRANSFORMING EDEN ISS INTO EDEN LUNA – HOW DLR'S PLANT CULTIVATION SYSTEM FOR FUTURE DEEP SPACE EXPLORATION MISSIONS IS BEING PREPARED FOR ITS NEXT TEST CAMPAIGN

Michel Fabien Franke, German Aerospace Center (DLR), Bremen, Germany

IAC-24.A5.4.6

THE SMART MODULAR HABITATION SYSTEM FOR MEDICAL SUPPORT AND ASTRONAUT SAFETY DURING LUNAR EXTRAVEHICULAR ACTIVITIES (EVA)

Kyunghwan KIM, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Institute of Space Systems, Bremen, Germany

IAC-24.A5.4.7

CERTIFICATION OF A COMPOSITE HABITAT FOR DEEP SPACE

Matthew Ziglar, Boeing Defense Space & Security, Pasadena, United States

IAC-24.A5.4.8

A TECHNICAL SOLUTION FOR WINDOWS IN MASS-SCREENED LUNAR HABITATS

Giancarlo Genta, Politecnico di Torino, Torino, Italy

IAC-24.A5.4.9

LASER-WELDED LUNAR LANDING PAD BASED ON SINTERED LUNAR REGOLITH

Wenbin Han, Huazhong University of Science and Technology, Wuhan, China

IAC-24.A5.4.10

DEVELOPMENT OF IN-SITU MANUFACTURING FOR STRUCTURAL ELEMENTS BY COMBINING ISRU AND SPACE DEBRIS

Hemanth Alapati, ISAE-Supaero University of Toulouse, Toulouse, France

IAC-24.A5.4.11

STUDYING PLANT-MICROBE INTERACTIONS USING THE CYANOBACTERIA ARTHROSPIRA PLATENSIS: THE EFFECTS OF GROWTH IN SIMULATED LUNAR/MARTIAN REGOLITH AND HIGH CO₂ CONCENTRATION ENVIRONMENTS.

Terry Trevino, American Military University, San Francisco, United States

IAC-24.A5.4.12

PRACTICAL DESIGN OF A NOVEL TECHNIQUE FOR USING FOGPONICS IN EARTH-BOUND AND MICROGRAVITY ENVIRONMENTS

Ignaty Romanov-Chernigovsky, Frankfurt, Germany

A6. 22nd IAA SYMPOSIUM ON SPACE DEBRIS

Coordinator(s): Christophe Bonnal, European Conference for Aero-Space Sciences (EUCASS), France; Mark A. Skinner, The Aerospace Corporation, United States; Pierre Omaly, CNES, France

A6.1. Space Debris Detection, Tracking and Characterization - SST

October 15 2024, 10:15 — Brown Hall 3

Co-Chair(s): Mark A. Skinner, The Aerospace Corporation, United States; Fabrizio Piergentili, Sapienza University of Rome, Italy

Rapporteur(s): Thomas Schildknecht, SwissSpace Association, Switzerland

IAC-24.A6.1.1

TRACKING AND AVOIDING SPACE DEBRIS USING CUBESATS

Erik A. Hoff, BLUECUBE Aerospace, Palm Beach Gardens, United States

IAC-24.A6.1.2

ROCKET BODY TUMBLING ASSESSMENT THROUGH RADAR, OPTICAL TELESCOPE, AND IMAGING

Darren McKnight, LeoLabs, Chantilly, VA, United States

IAC-24.A6.1.3

LEO UNCATALOGUED SPACE DEBRIS DETECTION AND ORBIT CHARACTERIZATION THROUGH MULTI-SITE OPTICAL OBSERVATIONS

Manuel Cegarra Polo, Japan Aerospace Exploration Agency (JAXA), Tokyo, Japan

IAC-24.A6.1.5

CUBESAT CONFUSION: FURTHER OBSERVATIONS OF A CUBESAT-BASED PULSED LED BEACON

Mark A. Skinner, *The Aerospace Corporation, United States*

IAC-24.A6.1.6

FIRST OBSERVATIONS OF DTC STARLINK SATELLITES AND MAGNITUDE EVALUATION

Lorenzo Cimino, *Sapienza University of Rome, Roma, Italy*

IAC-24.A6.1.7

BREACHING THE SUB-CM TO CM GAP WITH IN-SITU SPACE DEBRIS OBSERVATIONS: LESSONS LEARNT FROM PAST MISSIONS & ON-GOING EFFORTS AT THE EUROPEAN SPACE AGENCY

Xanthi Oikonomidou, *GMV, Space Debris Office (SDO), ESA/ESOC, Darmstadt, Germany*

IAC-24.A6.1.8

ENHANCING SPACE SITUATIONAL AWARENESS THROUGH VERY AND ULTRA-WIDE FIELD OF VIEW OPTICAL SYSTEMS

Stanislaw Kozlowski, *Cilium Engineering, Torun, Poland*

IAC-24.A6.1.9

LIGHT CURVES SEQUENTIAL COMPARISON STRATEGY FOR IMPROVED UNDERSTANDING OF LEO UNCONTROLLED OBJECTS

Lorenzo Chiavari, *Sapienza University of Rome, Ciampino (RM), Italy*

IAC-24.A6.1.10

VISDOMS: VERIFICATION OF IN-SITU DEBRIS OPTICAL MONITORING FROM SPACE

Mehdi Scoubeau, *European Space Agency (ESA-ESOC), Darmstadt, Germany*

A6.2. Modeling and Risk Analysis

October 17 2024, 15:00 — Brown Hall 3

Co-Chair(s): Marlon Sorge, *The Aerospace Corporation, United States*; Dan Oltrogge, *COMSPOC Corp., United States*

Rapporteur(s): Carmen Pardini, *ISTI-CNR, Italy*

IAC-24.A6.2.1

INVESTIGATING THE PREDICTION OF DEBRIS RISKS GIVEN UNCERTAINTIES IN MODELS AND ASSUMPTIONS

Anne Aryadne Bennett, *Northrop Grumman Corporation, Dulles, United States*

IAC-24.A6.2.2

ESTIMATING THE ENVIRONMENTAL IMPACTS OF A DERELICT OBJECT ON CURRENT AND FUTURE OPERATIONAL SPACECRAFT

Pol Mesalles-Ripoll, *SpaceNav, LLC, Boulder, United States*

IAC-24.A6.2.3

A POINT PROCESS FORMULATION FOR LONG TERM PROPAGATION OF POPULATION STATISTICS

Christophe Taillan, *Centre National d'Etudes Spatiales (CNES), Toulouse, France*

IAC-24.A6.2.4

OPERATIONAL MODEL FOR COMPUTATION OF UNCERTAINTY WINDOW IN TRACKING AND IMPACT PREDICTION OF UNCONTROLLED ARTIFICIAL SPACE OBJECTS RE-ENTRY ON EARTH

Damiano Errico, *Italian Air Force, Poggio Renatico (Ferrara), Italy*

IAC-24.A6.2.5

INVESTIGATION OF THE DEMISE BEHAVIOUR OF CRITICAL CUBESAT COMPONENTS IN A PLASMA WIND TUNNEL

Manfred Ehresmann, *Institute of Space Systems, University of Stuttgart, Stuttgart, Germany*

IAC-24.A6.2.6

ON-ORBIT BREAKUP FORENSICS: ANALYSIS OF MEASUREMENT DATA TO RECONSTRUCT FRAGMENTATION EVENTS IN SPACE

Camilla Colombo, *Politecnico di Milano, Milano, Italy*

IAC-24.A6.2.7

DEBRIS PROLIFERATION MODELING AND RISK ANALYSIS FOR CISLUNAR ORBITS

Arjun Chhabra, *Princeton University, Princeton, New Jersey, United States*

IAC-24.A6.2.8

SPACE TRAFFIC COORDINATION FRAMEWORK FOR SUCCESS

Matthew Shouppe, *Silver Spring, United States*

IAC-24.A6.2.9

INTEGRATION OF AIR AND SPACE TRAFFIC MANAGEMENT: ESTABLISHING CRITERIA FOR MITIGATING SPACE AND LAUNCH DEBRIS HAZARDS

Prof. Michael Kezirian, *University of Southern California, Los Angeles, CA, United States*

IAC-24.A6.2.10

MAS – A MISSION ANALYSIS SOFTWARE FOR COLLISION RISK QUANTIFICATION AND IMPACT ASSESSMENT OF RULE-BASED DECISION-MAKING FOR COLLISION AVOIDANCE

Simon Burgis, *TU Darmstadt, Darmstadt, Germany*

IAC-24.A6.2.11

THE IMPACT OF SATCON RECOMMENDATIONS ON THE SAFETY AND SUSTAINABILITY OF LARGE CONSTELLATIONS

Megan Perks, *University of Southampton, Southampton, United Kingdom*

IAC-24.A6.2.12

REASSESSMENT OF TARGET OBJECTS AND MISSION REQUIREMENTS FOR ACTIVE DEBRIS REMOVAL DUE TO CHANGES IN THE ON-ORBIT ENVIRONMENT

Satomi Kawamoto, *Japan Aerospace Exploration Agency (JAXA), Tokyo, Japan*

A6.3. Impact-Induced Mission Effects and Risk Assessments

October 17 2024, 10:15 — Brown Hall 3

Co-Chair(s): Zizheng Gong, *Beijing Institute of Spacecraft Environment Engineering, China Academy of Space Technology (CAST), China*; Yukihito Kitazawa, *Japan Aerospace Exploration Agency (JAXA), Japan*

Rapporteur(s): Ysolde Prevèreaud, *ONERA - The French Aerospace Lab, France*

IAC-24.A6.3.1

A NEW CHARACTERISTIC LENGTH DEBRIS DISTRIBUTION MODEL FOR IN-SPACE COLLISION EVENTS

Lorenzo Olivieri, *CISAS "G. Colombo" - University of Padova, Padova, Italy*

IAC-24.A6.3.2

RUPTURE MODELS FOR TANKS FOR SPACE APPLICATIONS

Giorgia Bigari, *Spinea, Italy*

IAC-24.A6.3.3

A CONCEPT FOR A NOVEL PREDICTIVE FRAMEWORK FOR HYPERVELOCITY IMPACT RISK ASSESSMENT BASED ON MODULAR TRANSFER FUNCTIONS.

Tobias Schalm, *RWTH Aachen University, Aachen, Germany*

IAC-24.A6.3.4

MODELING THE SPACE DEBRIS ENVIRONMENT FOR HYPERVELOCITY IMPACT RISK ASSESSMENT ON SOLAR POWER SATELLITES

Simon Maillot, *The Graduate University for Advanced Studies (SOKENDAI), Sainte-Clotilde, Japan*

IAC-24.A6.3.5

EVALUATION OF EJECTA IN HYPERVELOCITY IMPACT OF LARGE STRUCTURES ON GEOSTATIONARY ORBITS AND PROPOSED MEASURES TO REDUCE THEM

YUMA KITAGURO, *Kyushu Institute of Technology, Kitakyushu-shi, Fukuoka-ken, Japan*

IAC-24.A6.3.6

IMPACT INDUCED FAILURES OF SOLAR ARRAY CABLE BUNDLES
Martin Schimmerohn, Fraunhofer - Institute for High-Speed Dynamics, Freiburg, Germany

IAC-24.A6.3.7

DISPERSION ANALYSIS OF DEBRIS CLOUD FROM ALUMINUM AND MAGNESIUM ALLOY PLATES: A COMPARISON BETWEEN EXPERIMENTS AND NUMERICAL SIMULATIONS
Motoki Kawase, Nagoya Institute of Technology, Aichi-ken, Japan

IAC-24.A6.3.8

CFRP CONSTITUTIVE MODEL CONSIDERING THE IMPACT ADIABATIC AND ITS EXTREME IMPACT BEHAVIOR IN THE SPACE ENVIRONMENT
Changfang Zhao, Tsinghua University, Beijing, China

IAC-24.A6.3.9

GROUND-BASED EXPERIMENTAL REFLECTANCE VERIFICATION FOR SATELLITE HYPERVELOCITY IMPACT CHARACTERIZATION
Carolina Ghini, Sapienza University of Rome, Roma, Italy

IAC-24.A6.3.10

EXPERIMENTAL STUDY ON IN-SITU OBSERVATION TECHNOLOGY AND PROTECTION PERFORMANCE VERIFICATION OF SPACE DEBRIS HIGH-SPEED IMPACT
Wei Wang, Shanghai Jiaotong University, Shanghai, China

A6.4. Mitigation - Tools, Techniques and Challenges - SEM

October 16 2024, 15:00 — Brown Hall 3

Co-Chair(s): Pierre Omaly, CNES, France; Satomi Kawamoto, Japan Aerospace Exploration Agency (JAXA), Japan

Rapporteur(s): Holger Krag, European Space Agency (ESA), Germany

IAC-24.A6.4.1

IMPROVING COMPLIANCE FOR POST MISSION DISPOSAL- ISRO'S ONGOING EFFORTS
A. K. Anil Kumar, Indian Space Research Organization (ISRO), Bangalore, India

IAC-24.A6.4.2

UPDATE OF ESA'S SPACE DEBRIS MITIGATION POLICY, REQUIREMENTS, AND VERIFICATION GUIDELINES
Francesca Letizia, European Space Agency (ESA), Noordwijk, The Netherlands

IAC-24.A6.4.3

ASSESSING A SPACE MISSION AGAINST ESA'S ZERO DEBRIS POLICY THROUGH THE DEBRIS MITIGATION FACILITY (DMF)
Philippe Meyers, Luxembourg Space Agency, Darmstadt, Germany

IAC-24.A6.4.4

GENERATION OF TABLES OF ODMSP-COMPLIANCE METRICS FOR DESIGN OF ABOVE-GEO AND ABOVE-GPS UPPER STAGE DISPOSAL ORBITS
Alan B. Jenkin, The Aerospace Corporation, Los Angeles, CA, United States

IAC-24.A6.4.5

SPACE DEBRIS ENVIRONMENT INDEX AND CAPACITY EVALUATION WITH THE THEMIS TOOL
Camilla Colombo, Politecnico di Milano, Milano, Italy

IAC-24.A6.4.6

EREBUS: A SIMPLE AND ROBUST APPROACH FOR BATTERY PASSIVATION AND SAFE DECOMMISSIONING OF LEO AND GEO SMALLSATS
Emilio Fazzoletto, Argotec, Turin, Italy

IAC-24.A6.4.7

ANALYSING THE PASSIVE AERODYNAMIC STABILITY OF STRATHCUBE DURING ATMOSPHERIC RE-ENTRY
Cameron Fergus-Allen, University of Strathclyde, Glasgow, United Kingdom

IAC-24.A6.4.8

THERMITE-FOR-DEMISE (T4D): NUMERICAL AND EXPERIMENTAL DESCRIPTION OF THE PRESSURE BUILD-UP IN AN ENCLOSED VOLUME

Alessandro Finazzi, Politecnico di Milano, Milan, Italy

IAC-24.A6.4.10

SPACE DEBRIS MITIGATION MEASURES AND APPLICATIONS OF LAUNCH VEHICLE SEPARATION BODIES IN ORBIT
Yide Li, Aerospace System Engineering Shanghai, China, Shanghai, China

IAC-24.A6.4.11

A PASSIVE DEVICE FOR POSTMORTEM DETUMBLING / ANTITUMBLING OF LEO SATELLITES, TO FACILITATE ACTIVE REMOVAL
Xavier Albert-Lebrun, Airbus Defence & Space, Space Systems, Toulouse cedex 4, France; Christophe FIGUS, Airbus Defence and Space SAS, Toulouse, France

A6.5. Post Mission Disposal and Space Debris Removal 1 - SEM

October 18 2024, 10:15 — Brown Hall 3

Co-Chair(s): Balbir Singh, Manipal Institute of Technology, Manipal Academy of Higher Education, India; Roberto Opromolla, University of Naples "Federico II", Italy

Rapporteur(s): Laurent Francillout, CNES, France

IAC-24.A6.5.1

TAKING A STEP TOWARDS IMPLEMENTATION: STATUS AND RECENT ACHIEVEMENTS OF THE COMMERCIAL REMOVAL OF DEBRIS DEMONSTRATION PROGRAM
Toru Yamamoto, Japan Aerospace Exploration Agency (JAXA), Tsukuba, Japan

IAC-24.A6.5.2

SMALL SPACECRAFT POST-MISSION DISPOSAL DEMONSTRATION RESULTS BY DE-ORBIT MECHANISM BASED ON MEMBRANE STRUCTURE
Toshinori Kuwahara, Tohoku University, Sendai, Japan

IAC-24.A6.5.3

A COST-EFFECTIVE APPROACH TO SPACE DEBRIS MITIGATION USING CUBESAT TECHNOLOGY
Luca Lion, CISAS - "G. Colombo" Center of Studies and Activities for Space, University of Padova, Padova, Italy

IAC-24.A6.5.4

ACTIVE DEBRIS REMEDIATION EFFECTIVENESS FOR LOW EARTH ORBIT SYSTEM RISK REDUCTION
Nathan Wagner, Lynk Global, Inc, Middletown, United States

IAC-24.A6.5.5

SAFETY IN MISSION AND SYSTEM DESIGN FOR IN-ORBIT SERVICING AND ACTIVE DEBRIS REMOVAL DURING CLOSE PROXIMITY OPERATIONS
Anthea Evelina Comellini, Thales Alenia Space, LA ROQUETTE SUR SIAGNE, France

IAC-24.A6.5.6

OPTIMIZING ELEMENT & SYSTEM COMPLIANCE OF ROBOTIC, GECKO ADHESION-BASED GRIPPERS TO THE UNKNOWN GEOMETRIES OF SPACE DEBRIS TARGETS
Maddy Stratton, University of Southern California, Los Angeles, United States

IAC-24.A6.5.7

CHIME SATELLITE DESIGN FOR DISPOSAL MINIMISING CASUALTY RISK UPON RE-ENTRY
Puloma Chatterjee, Thales Alenia Space, Cannes, France

IAC-24.A6.5.8

TECHNOLOGIES AND STANDARD INTERFACES FOR ACTIVE DEBRIS REMOVAL: AN OVERVIEW OF ESA'S DESIGN FOR REMOVAL INITIATIVE

Daniel Wischert, European Space Agency (ESA), Noordwijk, The Netherlands

IAC-24.A6.5.9

STABILITY ANALYSIS OF ORBITAL TOWING FOR TETHERED SATELLITE SYSTEMS UNDER ACTIVE DISTURBANCE FROM ABANDONED SATELLITES

Dapeng Lian, Beihang University, Beijing, China

IAC-24.A6.5.10

ADEO – AERODYNAMIC DEORBIT SYSTEM FOR SATELLITES

Ernst K. Pfeiffer, HPS GmbH, München, Germany

A6.6. Post Mission Disposal and Space Debris Removal 2 - SEM

October 18 2024, 13:45 — Brown Hall 3

Co-Chair(s): Dmitriy Grishko, Bauman Moscow State Technical University, Russian Federation; Jason Forshaw, Astroscale Ltd, United Kingdom

Rapporteur(s): Darren McKnight, LeoLabs, United States

IAC-24.A6.6.1

MAKING A CASE FOR ACCELERATING ACTIVE DEBRIS REMOVAL OPERATIONS

Ian Christensen, Secure World Foundation, BROOMFIELD, United States

IAC-24.A6.6.2

BEYOND ELSA-D – DEVELOPING COMMERCIAL VIABILITY OF MULTI-CLIENT SERVICING WITH ELSA-M

Adrian Dumitrescu, Astroscale Ltd, London, United Kingdom

IAC-24.A6.6.3

A CNN-BASED RELATIVE NAVIGATION ARCHITECTURE FOR PROXIMITY OPERATIONS IN ACTIVE DEBRIS REMOVAL MISSIONS

Giuseppe Napolano, University of Naples "Federico II", Naples, Italy

IAC-24.A6.6.4

INTEGRATED GNC DESIGN AND IMPLEMENTATION FOR E.INSPECTOR MISSION: MULTI-SPECTRAL IMAGING FOR SPACECRAFT DEBRIS IN PREPARATION TO ACTIVE REMOVAL

Stefano Silvestrini, Politecnico di Milano, Milano, Italy

IAC-24.A6.6.5

RIGID ELECTRODYNAMIC TETHER SYSTEM (RETS)

Ahmad Faisal, Space Generation Advisory Council (SGAC), Kuala Lumpur, Malaysia

IAC-24.A6.6.6

SUCCESSIVE CONVEXIFICATION-BASED MODEL PREDICTIVE CONTROL FOR TETHERED DEBRIS DEORBITING

Liam Field, University at Buffalo, Buffalo, United States

IAC-24.A6.6.7

THE IMPLICATIONS FOR ROCKET BODY REMOVAL WHEN RESIDUAL FUEL IS ON BOARD: SPACE JUNK MIGHT BITE BACK!

Christopher Tuttle, ClearSpace, Inc., Seattle, United States

IAC-24.A6.6.8

WAIT, DETECT AND COLLIDE STRATEGY FOR SMALL SPACE DEBRIS REMOVAL IN LOW EARTH ORBITS

Noboru TAKEICHI, Tokyo Metropolitan University, Hino, Tokyo, Japan

IAC-24.A6.6.9

ULTRA-CLOSE RPO ON-ORBIT DEMONSTRATION OF ADRAS-J PROGRAM

Hisashi Inoue, ASTROSCALE JAPAN Inc., Tokyo, Japan; Gene Fujii, Astroscale Holdings, Tokyo, Japan

A6.7. Operations in Space Debris Environment, Situational Awareness - SSA

October 15 2024, 15:00 — Brown Hall 3

Co-Chair(s): Vincent Martinot, Thales Alenia Space France, France; Noelia Sanchez Ortiz, Arribes Enlightenment, Spain

Rapporteur(s): Andrew Monham, EUMETSAT, Germany

IAC-24.A6.7.1

MODELING SHORT-TERM SPACE OBJECT POPULATION GROWTH IN LEO

Darren McKnight, LeoLabs, Chantilly, VA, United States

IAC-24.A6.7.2

VALIDATION OF A FUEL-EFFICIENT COLLISION AVOIDANCE MANOEUVRE OPTIMIZER FOR THE GRACE-FO MISSION

Zeno Pavanella, The University of Auckland, Auckland, New Zealand

IAC-24.A6.7.3

COLLISION AVOIDANCE MANEUVER DESIGN \\\ BY A FAST RECURSIVE POLYNOMIAL FORMULATION

Zeno Pavanella, The University of Auckland, Auckland, New Zealand

IAC-24.A6.7.5

EARLY STAGE CHARACTERIZATION OF ON-ORBIT FRAGMENTATION EVENTS

Paola Grattagliano, Politecnico di Milano, Milano, Italy

IAC-24.A6.7.6

MINIMUM WARNING TIME ANALYSIS FOR LOW-THRUST COLLISION AVOIDANCE MANOEUVRES WITH STEERING LAWS

Frank de Veld, INRIA, Nice, France

IAC-24.A6.7.7

INTERNATIONAL SHARING OF SATELLITE TRACKING DATA FOR IMPROVED ORBITAL SAFETY

Valentin Baral, Centre National d'Etudes Spatiales (CNES), Toulouse, France

IAC-24.A6.7.8

THE TRACSS CONSOLIDATED PATHFINDER: LEVERAGING COMMERCIAL CAPABILITY IN LEO

Matthew Hejduk, The Aerospace Corporation, Woodway, United States

IAC-24.A6.7.9

HIERARCHICAL SENSOR TASKING FOR CATALOG MAINTENANCE CONSIDERING TARGET MANEUVER

Chenbao Xue, Beijing Institute of Technology (BIT), Beijing, China

IAC-24.A6.7.10

COVARIANCE ESTIMATION AND FUSION FOR EPHEMERIS-ONLY CATALOGUES APPLIED TO THE SPECIAL PERTURBATIONS CATALOGUE

Pietro Canal, GMV Aerospace & Defence SAU, Bremen, Germany

A6.8-E9.1. Policy, Legal, Institutional, Economic and Security Aspects of Debris Mitigation, Debris Remediation and STM

October 14 2024, 15:30 — Brown Hall 3

Co-Chair(s): David Spencer, The Aerospace Corporation, United States; Serge Plattard, University College London (UCL), United Kingdom; Tanja Masson-Zwaan, International Institute of Air and Space Law, Leiden University, The Netherlands; Andrea Capurso, LUISS Guido Carli University, Italy

Rapporteur(s): Victoria Samson, Secure World Foundation, United States; Emma Kerr, Defence Science and Technology Laboratory (DSTL), United Kingdom

IAC-24.A6.8-E9.1.2

A COST AND BENEFIT ANALYSIS OF ORBITAL DEBRIS REMEDIATION, MITIGATION, TRACKING, AND CHARACTERIZATION

Thomas Colvin, NASA Headquarters, Falls Church, VA, United States

IAC-24.A6.8-E9.1.3

WE'RE HERE TO HELP: WHAT IS THE ROLE OF THE ITU IN SPACE SUSTAINABILITY?

Audrey Allison, The Aerospace Corporation, Arlington, VA, United States

IAC-24.A6.8-E9.1.4

CAN SPACE INSURANCE ASSIST IN NUDGING THE INDUSTRY TOWARDS LONG TERM SUSTAINABILITY?

Darcy A Beamer-Downie, Clyde & Co, Vancouver, Canada

IAC-24.A6.8-E9.1.5

THE RELEVANCE OF SECURED TRANSACTIONS LAW IN DEBRIS MITIGATION, REMEDIATION, AND STM

Hamza Hameed, Access Partnership, Singapore, Singapore, Republic of

IAC-24.A6.8-E9.1.6

COLLISION RISK HANDLING AT REGULATORY LEVEL, THE EXAMPLE OF THE FRENCH SPACE OPERATIONS ACT

Florent Lacomba, Centre National d'Etudes Spatiales (CNES), TOULOUSE, France

IAC-24.A6.8-E9.1.7

THE ZERO DEBRIS CHARTER: A SUCCESSFUL DEMONSTRATION OF OPEN AND COLLABORATIVE DEVELOPMENT OF SPACE SUSTAINABILITY TARGETS FOR 2030

Quentin Verspieren, European Space Agency (ESA), Paris, France

IAC-24.A6.8-E9.1.8

SPACE DEBRIS IN THE OCEAN: WHAT IS THE LEGAL REGIME THAT PROTECTS THE MARINE ENVIRONMENT BEYOND NATIONAL JURISDICTION AND WHO BEARS RESPONSIBILITY FOR SPLASHDOWNS?

Georgia Plakoutsi, Utrecht University, Athens, Greece

IAC-24.A6.8-E9.1.9

A COMPARATIVE STUDY OF SPACE SUSTAINABILITY BEST PRACTICES, STANDARDS AND GUIDELINES

Jodie Howlett, UK Space Agency, Abingdon, United Kingdom

IAC-24.A6.8-E9.1.11

KEEPING SPACE SAFE AND SECURE: MILITARY ROLES IN SPACE TRAFFIC MANAGEMENT

Marc Becker, Bonn, Germany

IAC-24.A6.8-E9.1.12

THE CONVERGENCE OF SPACE DOMAIN AWARENESS AND CYBERSECURITY: IMPLICATIONS FOR FUTURE WORKFORCE DEVELOPMENT

Bruce Chesley, Teaching Science and Technology, Inc (TSTI), Indian Harbour Beach, FL, United States

IAC-24.A6.8-E9.1.13

FUTURE OF SPACE TRAFFIC AND DEBRIS MANAGEMENT IN Cislunar Space

Tanushri Joshi, Mumbai, India

A6.9. Orbit Determination and Propagation - SST

October 16 2024, 10:15 — Brown Hall 3

Co-Chair(s): Rachit Bhatia, West Virginia University, United States; Paolo Marzioli, Sapienza University of Rome, Italy; Juan Carlos Dolado Perez, Centre National d'Etudes Spatiales (CNES), France

IAC-24.A6.9.1

SATELLITE SWARM SURVEILLANCE FOR PRECISE ORBIT DETERMINATION AND GUIDANCE DESIGN IN RENDEZVOUS TRAJECTORY WITH UNCOOPERATIVE MANOEUVRING TARGET IN SPACE

Tanya Krishna Kumar, Indian Institute of Technology Kanpur, Bengaluru City, India

IAC-24.A6.9.3

A PONTYAGIN NEURAL NETWORK APPLICATION TO TRACKLETS CORRELATION OF OPTICAL OBSERVATIONS

Luca Ramponi, Politecnico di Milano, Gallarate, Italy

IAC-24.A6.9.4

ANALYSING THE INFLUENCE OF PHOTOMETRIC FILTERS ON LEO SATELLITE ORBIT DETERMINATION

Simone Varanese, Sapienza University of Rome, Rome, Italy

IAC-24.A6.9.5

RECURRENT NEURAL NETWORKS FOR RESIDENT SPACE OBJECTS CHARACTERIZATION IN MEO AND GEO

Nicola Cimmino, University of Naples "Federico II", Naples, Italy

IAC-24.A6.9.6

CUBESAT POSITIONING PERFORMANCE COMPARISON BETWEEN ON-BOARD GNSS, ACTIVE 1-WAY RANGING AND TDOA METHODS BY THE DISTRIBUTED GROUND STATION NETWORK, AND THE RESULTING TIME FROM RIDESHARE LAUNCH TO IDENTIFICATION - AN OPERATOR'S SELECTION HELP

Andreas Hornig, AerospaceResearch.net, Jena, Germany

IAC-24.A6.9.7

STOCHASTIC INTEGRATION FOR RE-ENTRY ANALYSIS

Aurora Saracini, Politecnico di Milano, Milano, Italy

IAC-24.A6.9.9

A MODEL FRAMEWORK FOR HIGH-ACCURACY, SHORT- AND LONG-TERM ORBIT DETERMINATION AND PROPAGATION OF Cislunar SPACE DEBRIS, WITH REALISTICALLY QUANTIFIED UNCERTAINTIES

Daan Witte, Technical University Delft, Faculty of Aerospace Engineering, Rotterdam, The Netherlands

IAC-24.A6.9.10

RANGE AND DOPPLER ENABLED INITIAL ORBIT DETERMINATION WITH LEOLABS RADARS

Roberto Armellini, The University of Auckland, Auckland, New Zealand

A6.10-E9.4. Space carrying capacity assessment and allocation

October 18 2024, 13:45 — Brown Hall 1

Co-Chair(s): Camilla Colombo, Politecnico di Milano, Italy; Francesca Letizia, European Space Agency (ESA), The Netherlands; Peter Martinez, Secure World Foundation, United States

Rapporteur(s): Alessandro Rossi, IFAC-CNR, Italy

IAC-24.A6.10-E9.4.1

EXTENDING A RISK METRIC FOR INDIVIDUAL MISSIONS TO EVALUATE OVERALL RISK IN ORBIT

Callum Wilson, University of Strathclyde, Glasgow, United Kingdom

IAC-24.A6.10-E9.4.2

A SPACE ENVIRONMENT INDEX BASED ON MINIMUM ORBITAL INTERSECTION DISTANCE—MBSI

Qingbo Gan, National Astronomical Observatories, Chinese Academy of Sciences, Beijing, China

IAC-24.A6.10-E9.4.3

CORRELATING LEO SUSTAINABILITY TO TARGETED DEBRIS MITIGATION METHODS USING A SIMPLE METRIC

Gregory Henning, The Aerospace Corporation, Albuquerque, United States

IAC-24.A6.10-E9.4.4

LOW EARTH ORBIT CAPACITY THRESHOLDS INVESTIGATION FOR A SUSTAINABLE USE OF THE SPACE ENVIRONMENT

Andrea Muciaccia, Politecnico di Milano, Milano, Italy

IAC-24.A6.10-E9.4.5

VERIFICATION OF CORRELATION BETWEEN A DEBRIS INDEX AND AN ORBITAL ENVIRONMENT EVOLUTION AND CONSIDERATIONS OF A CAPACITY

Ryusuke Harada, Japan Aerospace Exploration Agency (JAXA), Chofu-shi, Tokyo, Japan

IAC-24.A6.10-E9.4.6

MISSION-BASED AND ENVIRONMENT-BASED APPROACHES FOR ASSESSING THE SEVERITY OF A SPACE DEBRIS EVOLUTION SCENARIO FROM A SUSTAINABILITY PERSPECTIVE

Francesca Letizia, European Space Agency (ESA), Noordwijk, The Netherlands

IAC-24.A6.10-E9.4.8

A STABLE EQUILIBRIUM FOR THE LEO ORBITAL CAPACITY

Giovanni Lavezzi, Massachusetts Institute of Technology (MIT), Cambridge, United States

IAC-24.A6.10-E9.4.9

NORMALIZING ORBITAL CAPACITY CHARACTERIZATION

Darren McKnight, LeoLabs, Chantilly, VA, United States

IAC-24.A6.10-E9.4.10

CLOSING THE LOOP BETWEEN SPACE CAPACITY AND LIFE CYCLE ASSESSMENT: A NETWORK-THEORETIC APPROACH

Yirui Wang, University of Strathclyde, Glasgow, United Kingdom

A6.11. Space Debris Detection, Tracking and Characterization II

October 14 2024, 15:30 — Brown Hall 1

Co-Chair(s): Kumi Nitta, Japan Aerospace Exploration Agency (JAXA), Japan; Borja Del Campo, Deimos Space UK Ltd, United Kingdom

IAC-24.A6.11.1

TANDEM: A NEW SST STATION AT INAF-OAS LOIANO OBSERVATORY

Daniele Gallieni, A.D.S. International Srl, Annone di Brianza, Italy

IAC-24.A6.11.2

EFFICIENT LASER RANGING OF SPACE DEBRIS BASED ON GROUND-SPACE COLLABORATIVE NETWORK OBSERVATIONS

Gongqiang Li, National Astronomical Observatories, Chinese Academy of Sciences, Beijing, China

IAC-24.A6.11.3

MEASURES OF OPERATIONAL UTILITY IN EVOLVING SPACE SITUATIONAL AWARENESS SENSOR NETWORKS

Christopher Tommila, Massachusetts Institute of Technology (MIT), Cambridge, United States

IAC-24.A6.11.4

CONNECTING LABORATORY AND SPECTROSCOPIC OBSERVATIONS OF AEROSPACE MATERIALS TO CHARACTERIZE THE REFLECTIVITY OF ARTIFICIAL SPACE OBJECTS AND DEBRIS IN LEO REGIMES

Danica Zilkova, Comenius University, Faculty of Mathematics, Physics and Informatics, Bratislava, Slovakia, Bratislava, Slovak Republic

IAC-24.A6.11.5

MULTI-LAYERED MACHINE LEARNING FOR RAPID LEO OBJECT CHARACTERIZATION LEVERAGING GLOBAL RADAR DATA

Harry She, LeoLabs, Menlo Park, United States

IAC-24.A6.11.6

EXPERT CENTRE FOR SPACE SAFETY: VALIDATION AND QUALIFICATION SERVICE FOR THE GROUND BASED OPTICAL SENSORS ACQUIRING DATA FOR SSA/STM APPLICATIONS

Palash Patole, Astronomical Institute of the University of Bern, Bern, Switzerland

IAC-24.A6.11.7

THE USE AND CALIBRATION OF OPPORTUNISTIC SENSORS FOR IN-SPACE SITUATIONAL AWARENESS

Dylan Reeves, Astroscale Ltd, London, United Kingdom

IAC-24.A6.11.8

EFFECTS OF ON-ORBIT AGING OF CZ-3 R/B BY AVERAGE REFLECTANCE SPECTRA

Qingwei Qiao, Purple Mountain Observatory (PMO), Nanjing, China

IAC-24.A6.11.9

ANALYSIS OF DELTA-V DISTRIBUTIONS OF IN-SPACE FRAGMENTATION EVENTS

Nicolò Trabacchin, University of Padova - DII/CISAS, Noale, Italy

IAC-24.A6.11.10

EFFICIENT HIGH-DIMENSIONAL MULTI-OBJECTIVE OPTIMIZATION METHOD FOR LARGE SCALE SENSOR TASKING

Yifan Cai, Politecnico di Milano, Milano, Italy

A7. IAF SYMPOSIUM ON ONGOING AND NEAR FUTURE SPACE ASTRONOMY AND SOLAR-SYSTEM SCIENCE MISSIONS

Coordinator(s): Andrew Court, TNO, The Netherlands; Alessandra Di Cecco, Agenzia Spaziale Italiana (ASI), Italy

A7.1. Space Astronomy missions, strategies and plans

October 14 2024, 15:30 — Yellow Hall 3

Co-Chair(s): Eric Wille, ESA, The Netherlands; Alessandra Di Cecco, Agenzia Spaziale Italiana (ASI), Italy

Rapporteur(s): Andrew Court, TNO, The Netherlands

IAC-24.A7.1.1

KEYNOTE: EARTH ORBITING SMALL SATELLITES CONSTELLATIONS: TOWARDS USING THE EARTH SURROUNDING LAYERS

Roberto Battiston, Università di Trento, POVO, Italy

IAC-24.A7.1.2

26 TELESCOPES OF PLATO MISSION, PRODUCED IN A HIGH-RATE INDUSTRIAL PROCESS, WITH VERY SIMILAR HIGH PERFORMANCE AT CRYO-TEMPERATURE

Mario Salatti, Italian Space Agency (ASI), Rome, Italy

IAC-24.A7.1.3

DEEP SPACE TELESCOPE: AN SLS LAUNCHED SPACE TELESCOPE LANDED ON THE NORTH POLE OF PHOBOS

James Green, Space Science Endeavors, Silver Spring, United States

IAC-24.A7.1.4

MULTIPLE-SPACECRAFT EXOPLANET APERTURE SYNTHETIC INTERFEROMETER (MEAYIN) MISSION CONCEPT AND SCIENCE DRIVERS

Zhuoxi Huo, China Academy of Aerospace Science and Innovation, Beijing, China

IAC-24.A7.1.5

ITALIAN SPACE AGENCY BALLOON BORNE PRESENT ACTIVITIES AND FUTURE PROGRAMMES

Angela Volpe, Agenzia Spaziale Italiana (ASI), Roma, Italy

IAC-24.A7.1.6

REIMAGINING SPACE EXPLORATION: VENUS FLYBY MISSIONS

Chantal Li, Georgetown University, Washington, United States

IAC-24.A7.1.7

IN-FLIGHT CALIBRATION AND INITIAL OBSERVATIONS WITH THE IXRD DETECTOR ON SHARJAH-SAT-1: TARGETING THE CRAB PULSAR

Antonios Manousakis, Sharjah Academy for Astronomy, Space Sciences and Technology (SAAST), Sharjah, United Arab Emirates

IAC-24.A7.1.10 (unconfirmed)

OPTIMIZATION OF CORRECTION MANEUVER IN TRANSFER OF HELIOCENTRIC GRAVITATIONAL-WAVE OBSERVATORY

JianChao Zheng, Beijing Institute of Technology, Beijing, China

A7.2. Science Goals and Drivers for Future Exoplanet, Space Astronomy and Space Physics

October 15 2024, 10:15 — Yellow Hall 3

Co-Chair(s): Pietro Ubertini, INAF, Italy; Maria Cristina Falvella, Italian Space Agency (ASI), Italy

Rapporteur(s): Alessandra Di Cecco, Agenzia Spaziale Italiana (ASI), Italy

IAC-24.A7.2.1

THE AGILE SPACE MISSION: AN ITALIAN SUCCESS STORY AND ITS LEGACY FOR FUTURE SPACE ASTRONOMY
Carlotta Pittori, INAF - OAR, Rome, Italy

IAC-24.A7.2.2

PARKER SOLAR PROBE: ON THE CUSP OF TOUCHING THE SUN
Nour E. Raouafi, The John Hopkins University Applied Physics Laboratory, Laurel, Maryland, United States

IAC-24.A7.2.3

SOFT GAMMA-RAY ASTRONOMY WITH THE GRASS INSTRUMENT: STATUS AND PROSPECTS
Alexandra Parmentier, INAF-IAPS, Rome, Italy

IAC-24.A7.2.4

CREATION OF THE PERSEVERANCE ROVER AND ITS MISSION ON MARS.
Fidan Huseynzada, Baku State University, Baku, Azerbaijan

IAC-24.A7.2.6

GENERAL RELATIVITY TESTS WITH THE TWO LARES MISSIONS AND THE PROPOSED LARES 3 LUNAR SATELLITE
Claudio Paris, Sapienza University of Rome, Rome, Italy

IAC-24.A7.2.7

A MISSION CONCEPT FOR THE LARGEST TRANSIT SPECTROPHOTOMETRIC SURVEY OF EXOPLANET ATMOSPHERES
Josephine Maglio, Uppsala University, Knivsta, Sweden; Frederik Dall'Omo, University of Stuttgart, Stuttgart, Germany

IAC-24.A7.2.8

DUST-HELIOSPHERIC SCIENCE WITH THE DOLPHIN AND SUNCHASER+ MISSION CONCEPTS
Veerle Sterken, ETHZ, Bern, Switzerland

IAC-24.A7.2.9

QUVIK: QUICK ULTRA-VIOLET KILONOVA SURVEYOR
Vladimír Dániel, Aeronautical Research and Testing Institute (VZLU), Prague – Letnany, Czech Republic

IAC-24.A7.2.10

ADVANCED METHODOLOGIES FOR DESIGNING CRYOGENIC OPTICS FOR SPACE OBSERVATORIES: ACHIEVING OPTIMAL PERFORMANCE AND STABILITY AT LOW TEMPERATURES
Rati Srivastava, University of Petroleum and Energy Studies, Prayagraj, India

IAC-24.A7.2.11

EXOPLANETARY ATMOSPHERES AS PROXIES FOR MODELLING TERRESTRIAL CLIMATE CHANGE
King Kumire, University of South Africa - UNISA, Cape Town, South Africa

IAC-24.A7.2.12

EXPLORING NEW WORLDS: ADVANCES IN EXOPLANET DETECTION TECHNIQUES AND MACHINE LEARNING ALGORITHMS
Mahima Kaushik, NOIDA, India

A7.3. Technology Needs for Future Missions, Systems, and Instruments

October 16 2024, 15:00 — Yellow Hall 3

Co-Chair(s): Eric Wille, ESA, The Netherlands; Andrew Court, TNO, The Netherlands

Rapporteur(s): Maria Cristina Falvella, Italian Space Agency (ASI), Italy

IAC-24.A7.3.1

CONSTRUCTION OF THE ENSEMBLE X-RAY PULSAR TIME BASED ON THE DATA FROM THE NICER MISSION
Yusong Wang, National University of Defense Technology, Changsha, China

IAC-24.A7.3.2

THE GLOSS EXPERIMENT: AGEING OF COMPONENTS FOR FUTURE GAMMA-RAY ASTROPHYSICS TELESCOPES
Enrico Virgilli, INAF – Osservatorio di Bologna, Bologna, Italy

IAC-24.A7.3.3

CALCULATION OF ABERRATION IN A LAUE LENS MADE OF GE AND SI BENT CRYSTALS FOR FUTURE GAMMA-RAY ASTROPHYSICS TELESCOPES
Claudio Ferrari, Italian National Research Council (CNR), Parma, Italy

IAC-24.A7.3.4

LASER-LINK ACQUISITION MANEUVER PLANNING FOR GRAVITATIONAL WAVE DETECTION UNDER COUPLED MULTI-AXIS CONSTRAINTS
Zhe Zhu, Beijing Institute of Technology, Beijing, China

IAC-24.A7.3.5

THE FIREFLY (4P) CONSTELLATION: GOING ABOVE AND BEYOND IN THE HELIOSPHERE EXPLORATION
Nour E. Raouafi, The John Hopkins University Applied Physics Laboratory, Laurel, Maryland, United States

IAC-24.A7.3.6

MIST-A THE MWIR SPECTROMETER TO EXPLORE THE ASTEROID BELT
Leonardo Tommasi, Leonardo S.p.A., Campi Bisenzio, Italy

IAC-24.A7.3.7

OBSERVING SUPERMASSIVE BLACK HOLES: TOWARD OPTIMISATION OF A SPACEBORNE VLBI MISSION
Ben Hudson, KISPE Space Systems Limited, Farnborough, United Kingdom

IAC-24.A7.3.8

ENVISS (ENTIRE VISIBLE SKY CAMERA) FOR COMET INTERCEPTOR MISSION
Leonardo Tommasi, Leonardo S.p.A., Campi Bisenzio, Italy

IAC-24.A7.3.9

FRACTIONATED SUB-SURFACE SOUNDER CONFIGURATIONS FOR GIANT PLANETS SATELLITES EXPLORATION
Timo Stuffer, OHB System AG, Weßling - Oberpfaffenhofen, Germany

IAC-24.A7.3.10

TECHNOLOGY DEVELOPMENTS FOR RADIO ASTRONOMY ON THE LUNAR FAR SIDE - CURRENT AND FUTURE EFFORTS OF THE ASTRONOMICAL LUNAR OBSERVATORY (ALO) TOPICAL TEAM.
Marc Klein Wolt, Radboud University Nijmegen, Nijmegen, The Netherlands

B1. IAF EARTH OBSERVATION SYMPOSIUM

Coordinator(s): Harry A. Cikanek, National Oceanic and Atmospheric Administration (NOAA), United States; Luís Ferreira, Airbus Defence and Space, Germany

B1.1. International Cooperation and Business Ventures in Earth Observations

October 14 2024, 15:30 — Space Hall 3

Co-Chair(s): Mukund Kadursrinivas Rao, Independent consultant, India; José Gavira Izquierdo, European Space Agency (ESA), The Netherlands

Rapporteur(s): Charles Wooldridge, National Oceanic and Atmospheric Administration (NOAA), United States

IAC-24.B1.1.1

KEYNOTE: COMMITTEE ON EARTH OBSERVATION SATELLITES IN 2024: CLIMATE AND BIODIVERSITY IN FOCUS
Hironori Maejima, Japan Aerospace Exploration Agency (JAXA), Tsukuba, Japan

IAC-24.B1.1.3

LEVERAGING EARTH OBSERVATION FOR MARINE ENVIRONMENT AND BLUE ECONOMY: INSIGHTS FROM THE ESA-FUNDED GDA-AID PROJECT
Giulio Ceriola, Planetek Italia, Bari, Italy

IAC-24.B1.1.4

ASI – ISRO COOPERATION IN EARTH OBSERVATION: STATUS, ACHIEVEMENTS AND NEW AVENUES
Deodato Tapete, Agenzia Spaziale Italiana (ASI), Rome, Italy; Rajeev Jaiswal, Indian Space Research Organization (ISRO), Bangalore, India

IAC-24.B1.1.5

THE EARTH OBSERVATION DATA AND SERVICES BUSINESS: A REVIEW OF GO-TO MARKET STRATEGIES.
Sylvain Drilholle, Euroconsult, Toulouse, France

IAC-24.B1.1.6

THE ATLANTIC CONSTELLATION: ADDRESSING ADDRESSING GLOBAL MARKETS OF SUSTAINABILITY AND SECURITY
Andre Dias, Ceiiia - Centro De Engenharia, Matosinhos, Portugal

IAC-24.B1.1.7

THE NEW SPACE PORTUGAL PROJECT – CHALLENGES AND OPPORTUNITIES FOR EO
Helena Correia Mendonça, Vieira de Almeida & Associados, Lisbon, Portugal

IAC-24.B1.1.8

HOW EO OPEN DATA PROGRAMS DEVELOPED BY NEW SPACE COMPANIES ARE SHAPING THE FUTURE OF THE EARTH OBSERVATION INDUSTRY
Miriam Gonzalez, Berlin, Germany

IAC-24.B1.1.9

THE AFRICA EARTH OBSERVATION CHALLENGE – A VEHICLE FOR GROWING THE AFRICAN DOWNSTREAM SPACE ENTREPRENEURIAL ECOSYSTEM.
Maheen Parbhoo, The Research Institute for Innovation and Sustainability (RIIS), Johannesburg, South Africa

IAC-24.B1.1.10

APPLYING THE EVDT DECISION SUPPORT MODEL TO MANAGE WATER RESOURCES IN ANGOLA: LESSONS FROM SYSTEMS ARCHITECTURE
Katlyn Turner, Massachusetts Institute of Technology (MIT), Cambridge, United States

IAC-24.B1.1.11

THE ASI-NASA MAIA/PLATINO-2 MISSION A NEW TOOL TO MONITOR THE AIRBORNE PARTICULATE MATTER FROM SATELLITE AND TO STUDY ITS IMPACT ON HUMAN HEALTH
Matteo Picchiani, ASI - Italian Space Agency, Rome, Italy

IAC-24.B1.1.12

SURFACE WATER OCEAN TOPOGRAPHY MISSION (SWOT), OBSERVING EARTH'S PRECIOUS WATER FROM SPACE
Parag Vaze, National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, La Canada Flintridge, United States

B1.2. Earth Observation Systems

October 18 2024, 10:15 — Green Hall 1

Co-Chair(s): Annamaria Nassisi, Thales Alenia Space Italia, Italy; Timo Stuffer, OHB System AG, Germany

Rapporteur(s): Gunter Schreier, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

IAC-24.B1.2.2

STATUS OF COPERNICUS HYPERSPECTRAL IMAGING MISSION FOR THE ENVIRONMENT (CHIME) WITH FOCUS ON END USER PRODUCTS DEVELOPMENT AND INTERNATIONAL COLLABORATION
Valentina Boccia, ESA - European Space Agency, Frascati, Italy

IAC-24.B1.2.3

CYCLOPS: A NEW RAPID REVISIT, HIGH-RESOLUTION EARTH OBSERVATION CONSTELLATION FOR LAND MANAGEMENT
Andrew Carrel, Clyde Space Ltd., Glasgow, United Kingdom

IAC-24.B1.2.4

PAVING THE WAY FOR OPERATIONAL CONSTELLATIONS IN VERY LOW EARTH ORBIT : THE ELITE SMALL SATELLITE DEMONSTRATOR
Erick Lansard, Satellite Research Center, Nanyang Technological University (NTU), Singapore, Singapore, Republic of

IAC-24.B1.2.5

STATUS UPDATE FOR GNSS-RO/R CONSTELLATION MISSION IN TAIWAN
Yung-Fu Tsai, Taiwan Space Agency (TASA), Hsinchu, Taipei

IAC-24.B1.2.6

FLIGHT RESULTS OF SUPER LOW ALTITUDE TEST SATELLITE "TSUBAME/SLATS" AND FOLLOW-ON PLAN
Kazuya Konoue, Japan Aerospace Exploration Agency (JAXA), Ibaraki, Japan

IAC-24.B1.2.7

ALADIN LASER TRANSMITTER TEST RESULTS IN THE FRAME OF AEOLUS MISSION END OF LIFE ACTIVITIES
Valeria De Sanctis, Leonardo S.p.A., Pomezia, Italy

IAC-24.B1.2.8

NEMO-HD MICROSATELLITE FOR AGILE REAL TIME ACQUISITIONS OF VIDEO AND MULTISPECTRAL DATA FOR DIGITAL TWIN MODELLING OF ECOSYSTEMS
Prof.Tomaz Rodic, SPACE-SI, Ljubljana, Slovenia

IAC-24.B1.2.9

QPS-SAR 2ND GENERATION - MISSION ARCHITECTURE AND OPERATIONAL OUTCOMES
Masahiko Uetsuhara, Institute for Q-shu Pioneer of Space, Inc. (iQPS), Fukuoka, Japan

IAC-24.B1.2.10

SAR SMALLSAT CONSTELLATION: SYSTEM TRADE OFF ACROSS MULTIPLE INCLINATIONS
Luca Soli, Thales Alenia Space Italia, Gorgonzola (Milano), Italy

IAC-24.B1.2.11

ADDING DIMENSIONS TO SENTINEL-1 DATA: CONSTELLATION OF BISTATIC PASSIVE RECEIVER SATELLITES FOR OPERATIONAL APPLICATIONS
Martin Jüssi, KappaZeta Ltd, Tartu, Estonia

IAC-24.B1.2.12

OPTIMIZATION STUDY ON EARTH OBSERVATION AND COMMUNICATION OF SATELLITE CONSTELLATION AND GROUND STATION
Kimoon Lee, University of Science & Technology of Korea (UST), Daejeon, Korea, Republic of

B1.3. Earth Observation Sensors and Technology

October 18 2024, 13:45 — Brown Hall 2

Co-Chair(s): Andrew Court, TNO, The Netherlands; Kate Becker, National Oceanic and Atmospheric Administration (NOAA), United States

IAC-24.B1.3.1

PROFILING THE PLANETARY BOUNDARY LAYER FROM SPACE: A REVIEW OF CAPABILITIES, LIMITATIONS, AND FUTURE PERSPECTIVES
Domenico Cimini, Potenza, Italy

IAC-24.B1.3.2 (unconfirmed)

CAMERA SELECTION FOR HIGH ALTITUDE PSEUDO SATELLITE.
Khadra Benahmed, Agence Spatiale Algérienne (ASAL), Oran, Algeria

IAC-24.B1.3.3

DESIGN OF A CUSTOM OPTICAL PAYLOAD TO MONITOR OCEAN COLOR BY AN EDUCATIONAL 3U CUBESAT
Ernesto Belluardo, Politecnico di Torino, Turin, Italy

IAC-24.B1.3.4

THE LIGHTNING IMAGER FIRST FLIGHT MODEL, ON BOARD OF THE METEOSAT THIRD GENERATION MISSION, PROVIDES FIRST FLIGHT DATA FOR WEATHER NOWCASTING DURING ITS FIRST YEAR IN ORBIT.

ALESSANDRO SIMONE VIGLIONE, Leonardo S.p.A., Campi Bisenzio [FI], Italy

IAC-24.B1.3.5

THE CHIME SPECTROMETERS: DEVELOPMENT AND QUALIFICATION STATUS.

Etienne Renotte, Advanced Mechanical and Optical Systems (AMOS), Angleur, Belgium

IAC-24.B1.3.6

THE TOOLS AND WORKFLOW OF LEO EARTH OBSERVATION OPTICAL PAYLOAD: CASE STUDY THEOS-3 SATELLITE

Tananti Promwongsa, Geo-Informatics and Space Technology Development Agency (GISTDA), Thung Song Hong Subdistrict, Lak Si District, Thailand

IAC-24.B1.3.7

DEVELOPMENT OF A SENSOR HEAD FOR SPACE-BASED QUANTUM GRAVIMETRY

Maike Lachmann, Airbus Defence & Space, Taufkirchen, Germany

IAC-24.B1.3.8

EFFECT OF DRAG-FREE CONTROL ON THE NEXT-GENERATION GRAVITY MISSION'S MEASUREMENT PERFORMANCE

David Bravo Berguno, Thales Alenia Space Italia (TAS-I), Turin, Italy

IAC-24.B1.3.9

EXPANDING HORIZONS IN LEO EARTH OBSERVATION: A NOVEL FREEFORM WIDE FOV REFLECTIVE TELESCOPE DESIGN INCORPORATING FREEFORM SURFACES AND INTEGRATED MIRROR SYSTEMS

Craig Ingram, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Adelaide, Australia

IAC-24.B1.3.10

DESIGN OF SAR OPERATION AND OBSERVATION MODES OF CAS500-5

Hyeon-Cheol Lee, Korea Aerospace Research Institute (KARI), Daejeon, Korea, Republic of

IAC-24.B1.3.11

THE RADAR CLUSTER FOR EARTH REMOTE SENSING (RACERS) CUBESAT MISSION

Alessandro Santoni, Tyvak International, Turin, Italy

B1.4. Earth Observation Data Systems and Technology

October 16 2024, 15:00 — Space Hall 3

Co-Chair(s): Gunter Schreier, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany; James Graf, Jet Propulsion Laboratory, United States

Rapporteur(s): Ana-Mia Louw, Simera Sense, South Africa

IAC-24.B1.4.1

A HIGH THROUGHPUT SOFTWARE ACCELERATION TO ON-BOARD ARTIFICIAL INTELLIGENCE FOR EARTH OBSERVATION

Pablo Ghiglino, Zurich, Switzerland

IAC-24.B1.4.2

A MULTI-SERVICE EDGE-AI ARCHITECTURE BASED ON SELF-SUPERVISED LEARNING

Enrico Magli, Politecnico di Torino, Torino, Italy

IAC-24.B1.4.3

BIG DATA CLOUD COMPUTING FOR THE SURFACE WATER AND OCEAN TOPOGRAPHY PROJECT

Parag Vaze, National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, La Canada Flintridge, United States

IAC-24.B1.4.4

COMMISSIONING PHASE CALIBRATION OF A HYPERSPECTRAL CAMERA WITH SCALABLE FILTERS

Wolfgang Lueck, Victoria, Canada

IAC-24.B1.4.5

DIGITAL TWIN FACTORY: A NEW LIBRARY CONNECTED TO EO PORTALS FOR EARTH MONITORING

Céline Tison, Centre National d'Etudes Spatiales (CNES), Toulouse, France

IAC-24.B1.4.6

EXPLORING QUANTUM MACHINE LEARNING FOR REMOTE SENSING-BASED LAND COVER CLASSIFICATION: CASE TEST IN PORTUGAL

Andrea Carbone, Scuola di Ingegneria Aerospaziale "La Sapienza", Rome, Italy

IAC-24.B1.4.7

IN-ORBIT DEMONSTRATION OPERATIONS OF THE HIGH-PERFORMANCE ON-BOARD PROCESSING CAPABILITIES OF C3SATP

Marc Ortega Playà, Institut d'Estudis Espacials de Catalunya (IEEC), Barcelona, Spain

IAC-24.B1.4.8

NATURAL LANGUAGE EXPLORATION OF SATELLITE DATA WITH ARTIFICIAL INTELLIGENCE, LARGE LANGUAGE MODELS, AND PLANETARY COMPUTER

Nelli Babayan, Arlington, United States

IAC-24.B1.4.9

PRISMA HYPERPANSARPENING: A METHODOLOGY TO CREATE AN ENHANCED HYPERSPECTRAL DATACUBE

Alessia Tricomi, e-GEO5, Rome, Italy

IAC-24.B1.4.10

SPACE EDGE COMPUTING CHANGE DETECTION THROUGH AN UNSUPERVISED TRAINED U-NET

Anselmo Bettio, Stellar Project Srl, Padova, Italy

IAC-24.B1.4.11

VERIFICATION OF THE ONBOARD SAR SHIP DETECTION USING YOLO.

Tatsuyuki Sekine, ELSPINA VEINZ INC., Kawasaki, Japan

B1.5. Earth Observation Societal and Economic Applications, Challenges and Benefits

October 17 2024, 10:15 — Space Hall 3

Co-Chair(s): Na Yao, Qian Xuesen Laboratory of Space Technology, China Academy of Space Technology (CAST), China; Luís Ferreira, Airbus Defence and Space, Germany

Rapporteur(s): Masami Onoda, Japan Aerospace Exploration Agency (JAXA), Japan; Michael Kern, ESA, France

IAC-24.B1.5.1

EARTH OBSERVATION DIGITAL TRANSFORMATION AND SUSTAINABILITY: CHALLENGES & OPPORTUNITIES

Marco Borghi, SpaceTec Partners SPRL, Brussels, Belgium

IAC-24.B1.5.2

AN ATTRACTIVE EUROPEAN EARTH OBSERVATION ECOSYSTEM OF SERVICES: FLEXIBLE, SCALABLE, AND COST-EFFECTIVE DATA SPACES EMPOWERING DOWNSTREAM BUSINESS OPPORTUNITIES

Giulia Cambone, European Space Agency (ESA-ESTEC), Noordwijk, The Netherlands

IAC-24.B1.5.3

ENVIRONMENTAL SUSTAINABILITY FROM EARTH OBSERVATION: OUTCOMES FROM CASE STUDIES IN EC R&D PROJECTS FOR COPERNICUS SERVICES EVOLUTION

Cecilia Sciarretta, e-GEOS, Roma, Italy

IAC-24.B1.5.5

LEVERAGING EARTH OBSERVATION FOR SUSTAINABLE URBAN DEVELOPMENT: A FRAMEWORK TAILORED TO PAKISTANI CITIES

Talha Noor, Space Generation Advisory Council (SGAC), Karachi, Pakistan

IAC-24.B1.5.6

X.URBE: RADAR BASIC EXAMINATION AND AI BASED MODEL TO SUPPORT URBAN HEALTH & WELLBEING

Ilaria Pennino, ALGHERO (SS), Italy

IAC-24.B1.5.7

HEATSCAPE RESOLVE – INTEGRATING EARTH OBSERVATION OF URBAN HEAT ISLAND EFFECTS INTO URBAN PLANNING PRACTICES

Roland Nemeth, Paulinyi & Partners Ltd., Budapest, Hungary

IAC-24.B1.5.8

THE USE OF SATELLITE DATA IN FINANCIAL MARKETS

Daniel Vrankar, TU Dresden, Dresden, Germany

IAC-24.B1.5.9

FLOOD RISK ASSESSMENT AND EARLY WARNING SYSTEMS INTEGRATING EARTH OBSERVATION TECHNOLOGIES FOR IMPROVED RESILIENCE IN PAKISTAN

Roshaan Nadeem, Institute of Space Technology (IST), Lahore, Pakistan

IAC-24.B1.5.10

DEVELOPMENT OF A METHODOLOGY FOR QUANTIFYING DOWNSTREAM INDUCED AND AVOIDED GREEN HOUSE GASES FROM EARTH OBSERVATION MISSIONS: A CASE STUDY BASED ON VARIABLE RATE APPLICATION IN AGRICULTURE

Alexandre Corral, Alcimed, Toulouse, France

IAC-24.B1.5.11

TITLE: HARNESSING EARTH OBSERVATION FOR SOCIETAL AND ECONOMIC BENEFITS IN ERITREA: CHALLENGES AND OPPORTUNITIES

Helen Haile, University of Nottingham, London, United Kingdom

IAC-24.B1.5.12

DETECTING ARTISANAL SMALL-SCALE MINING ACTIVITIES IN ANGOLA USING VERY HIGH-RESOLUTION IMAGERY

Oswaldo Porto, Angolan National Space Program Management Office (GGPEN), Luanda, Angola

B1.6. Assessing and Mitigating the Global Freshwater Crisis

October 17 2024, 15:00 — Space Hall 3

Co-Chair(s): Parag Vaze, National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, United States; Elizabeth Seward, United Kingdom

Rapporteur(s): Chen Xiaoli, Beijing Institute of Space Mechanics & Electricity, China Academy of Space Technology (CAST), China

IAC-24.B1.6.1

KEYNOTE: COPING WITH MAJOR SOCIETAL HAZARDS SUCH AS FLOODING DUE TO A CHANGING CLIMATE

Paul Bates, University of Bristol, Bristol, United Kingdom

IAC-24.B1.6.2

UPDATE ON SWOT: TRANSFORMATIVE DATA FROM REVOLUTIONARY TECHNOLOGY, AND IMPLICATIONS FOR HYDROLOGY AND WATER INTELLIGENCE

Parag Vaze, National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, La Canada Flintridge, United States

IAC-24.B1.6.3

ACCURATE FLOOD MAPPING VIA COLORIZED SAR IMAGES

Nour Aburaed, Mohammed Bin Rashid Space Centre (MBRSC), Dubai, United Arab Emirates

IAC-24.B1.6.4

ASSESSING VULNERABILITY TO DROUGHT IN ANGOLA USING MULTISOURCE SATELLITE EARTH OBSERVATIONS AND SOCIOECONOMIC DATA

Md Sariful Islam, Massachusetts Institute of Technology (MIT), Cambridge, United States

IAC-24.B1.6.5

INITIAL FIELD EVALUATION OF AN ON-WATER RADIOMETRY ROBOT FOR WATER QUALITY AND SATELLITE VALIDATION

Sivert Bakken, NTNU, Oslo, Norway

IAC-24.B1.6.6

HIVE, A COMMERCIAL EARTH OBSERVATION SYSTEM MEASURING TEMPERATURE AND WATER FROM SPACE, FOR BETTER RESOURCE ACCOUNTABILITY IN AGRICULTURE AND BEYOND

Riccardo Benvenuto, constellr GmbH, Freiburg, Germany

IAC-24.B1.6.7

OPTIMIZATION OF WATER MANAGEMENT IN CROPS USING SATELLITE TECHNOLOGY AND ARTIFICIAL INTELLIGENCE TECHNIQUES

Erick Salvador Reyes Galván, Puebla, Mexico

IAC-24.B1.6.8

REMOTE SENSING FOR IMPROVED IRRIGATION EFFICIENCY IN SOYBEAN FARMING

Giovanni Trevisanuto, DAFNAE - University of Padova, Legnaro (PD), Italy

IAC-24.B1.6.9

ADVANCING ARTIFICIAL INTELLIGENCE FOR PRECISE WATER LEAK DETECTION USING L-BAND SAR

Yuval Lorig, ASTERRA, Kfar Saba, Israel

IAC-24.B1.6.10

MONITORING WATER QUALITY OF LAKE CHIVERO USING DIGITAL EARTH AFRICA

Muongen Tamara Manda, Shurugwi, Zimbabwe

IAC-24.B1.6.11

MONITORING INLAND WATER STORAGE USING RADAR ALTIMETRY DATA. A CASE STUDY: COLOMBIAN LAKES AND RESERVOIRS

Maria Paula Bustos Moreno, Technische Universität Berlin, Berlin, Germany

IAC-24.B1.6.12

A METHOD OF PREVENTING THE POLLUTION OF THE CASPIAN SEA, WHICH IS BEING POLLUTED, THROUGH THE APPLICATION OF THE SAR SYSTEM

Rahil Aghabayli, Azerbaijan State Oil and Industry University (ASOIU), Salyan, Azerbaijan

B1.7. Earth Observations to address Earth's Environment and Climate Challenges

October 15 2024, 15:00 — Space Hall 3

Co-Chair(s): Ole Morten Olsen, Norwegian Space Agency (NOSA), Norway; Shimrit Maman, Ben-Gurion University of the Negev, Israel

Rapporteur(s): Patrick Castellan, Centre National d'Etudes Spatiales (CNES), France

IAC-24.B1.7.1

LOW EARTH ORBIT SATELLITE DATA FROM NOAA SATELLITES FOR ENVIRONMENTAL AND CLIMATE APPLICATIONS

Satya Kalluri, NOAA/NESDIS, Lanham, United States

IAC-24.B1.7.2

ON THE HORIZON- WHAT'S TO COME FOR CANADIAN SATELLITE EARTH OBSERVATION TO HELP ADDRESS CLIMATE CHANGE CHALLENGES

Mays Ahmad, Canadian Space Agency, Saint-Hubert, Canada

IAC-24.B1.7.3

EARTH OBSERVATIONS FROM SPACE FOR THE SUSTAINABLE DEVELOPMENT OF THE PLANET: THE PERSPECTIVE OF SPACE IT UP!
Domenico Cimini, Potenza, Italy

IAC-24.B1.7.4

CARIOQA: A PATHFINDER MISSION FOR QUANTUM SPACE GRAVIMETRY
Christine Fallet, CNES, Toulouse, France

IAC-24.B1.7.5

CLOUD CHARACTERIZATION BY COMPUTED TOMOGRAPHY METHODS USING A SATELLITE FORMATION OF 10 SMALL SATELLITES FOR IMPROVED CLIMATE PREDICTION
Klaus Schilling, Zentrum für Telematik, Wuerzburg, Germany

IAC-24.B1.7.6

TROPOPAUSE ALTITUDE MONITORING OVER THE YEARS 2001-2023 BY RADIO OCCULTATION OBSERVATIONS
Andrea Andrisani, Matera Space Geodesy Center, Agenzia Spaziale Italiana (ASI), Matera, Italy

IAC-24.B1.7.7

CUBESATS FOR CONTRAIL MONITORING AND ENVIRONMENTAL IMPACT REDUCTION
Nishanth Pushparaj, University of Nottingham, Nottingham, United Kingdom

IAC-24.B1.7.8

ASSESSING AND VALIDATING SPECTRAL UNMIXING OF HYPERSPECTRAL PRISMA IMAGERY IN MILANO WITH IMPLICATIONS FOR URBAN CLIMATE
Matej Zgela, Politecnico di Milano, Milano, Italy

IAC-24.B1.7.9

CASE STUDY APPLYING EARTH OBSERVATION FOR MONITORING SOOT IN PORT HARCOURT.
Veronica Chigoziri Obodozie, Lagos, Nigeria

IAC-24.B1.7.10

INVESTIGATION OF THE CORRELATION BETWEEN WILDFIRES AND FLASH FLOODS
Marilina Tsinidis, University of Glasgow, Glasgow, United Kingdom

B1.8. IAF EARTH OBSERVATION SYMPOSIUM - Extra Session

October 16 2024, 10:15 — Space Hall 3

Co-Chair(s): Gunter Schreier, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany; Harry A. Cikanek, National Oceanic and Atmospheric Administration (NOAA), United States

IAC-24.B1.8.1

KEYNOTE: INGV CENTER FOR SPACE OBSERVATIONS OF EARTH (COS): THE PEOS ICT-PLATFORM TO MANAGE INTEGRATED SPACE PRODUCTS TO MONITOR AND MITIGATE NATURAL HAZARDS
Maria Fabrizia Buongiorno, Istituto Nazionale di Geofisica e Vulcanologia, Rome, Italy

IAC-24.B1.8.2

PLATINO-1 MISSION: A COMPACT X-BAND MONOSTATIC AND BISTATIC SAR
Giovanni Paolo Blasone, Italian Space Agency (ASI), Rome, Italy

IAC-24.B1.8.3

BISTATIC OBSERVATION OPPORTUNITIES IN PLATINO-1 SAR MISSION
Antonio Gigantino, Università degli Studi di Napoli "Federico II", Napoli, Italy

IAC-24.B1.8.4

PLATINO-3: THE COMPACT VERY HIGH RESOLUTION PAYLOAD PROGRAM OF THE ITALIAN SPACE AGENCY
Giovanni Paolo Blasone, Italian Space Agency (ASI), Rome, Italy

IAC-24.B1.8.5

PLATINO-4: THE COMPACT HYPERSPECTRAL PAYLOAD PROGRAM OF THE ITALIAN SPACE AGENCY
Matteo Picchiani, ASI - Italian Space Agency, Rome, Italy

IAC-24.B1.8.6

COSMO-SKYMED: A SATELLITE TOOL FOR MONITORING CULTURAL HERITAGE AND WORLD HERITAGE SITES
Deodato Tapete, Agenzia Spaziale Italiana (ASI), Rome, Italy

IAC-24.B1.8.7

COSMO-SKYMED DATA EXPLOITATION
Maria Virelli, Italian Space Agency (ASI), Rome, Italy

IAC-24.B1.8.8

MULTI-TEMPORAL SAR INTERFEROMETRY SERVICE FOR THE MONITORING OF SEISMIC WIDE AREAS
Alessandro Parisi, Geophysical Applications Processing, Bari, Italy

IAC-24.B1.8.9

TOWER-CHECK: DESIGNING A REAL-TIME MONITORING ARCHITECTURE FOR HIGH VOLTAGE OVERHEAD POWER LINES USING SAR ON-BOARD PROCESSING TECHNIQUES
Leonardo Amoruso, Planetek Italia, Bari, Italy

IAC-24.B1.8.11

3MI (MULTI-VIEWING, MULTI-CHANNEL, MULTI-POLARIZATION IMAGING) FOR METOP SECOND GENERATION
Federico La China, Leonardo S.p.A, Campi Bisenzio, Italy

B2. IAF SPACE COMMUNICATIONS AND NAVIGATION SYMPOSIUM

Coordinator(s): Rita Lollock, The Aerospace Corporation, United States; Morio Toyoshima, National Institute of Information and Communications Technology (NICT), Japan

B2.1. Space-based PNT (Position, Navigation, Timing) Architectures, Applications, and Services

October 15 2024, 15:00 — Orange Hall 2

Co-Chair(s): Giovanni B. Palmerini, Sapienza University of Rome, Italy; Raj Thilak Rajan, Delft University of Technology (TU Delft), The Netherlands

Rapporteur(s): Rania Toukebri, Space Generation Advisory Council (SGAC), Germany

IAC-24.B2.1.1

TOWARDS A GNSS-ASSISTED AUTONOMOUS HETEROGENEOUS CLOCK SYSTEM FOR VERY SMALL SATELLITES IN THE EARTH-MOON SYSTEM
Eberhard Gill, Delft University of Technology, Delft, The Netherlands

IAC-24.B2.1.2

MISSION STATUS AND UPDATES ON THE LUNAR GNSS RECEIVER EXPERIMENT
Fabio DAVIS, Politecnico di Torino, Turin, Italy

IAC-24.B2.1.3

DEVELOPING DEEP LEARNING MODELS TO PREDICT LONG-TERM SATELLITE CLOCK BIAS CORRECTIONS
Marilyn Braojos Gutierrez, Georgia Institute of Technology, Hialeah, United States

IAC-24.B2.1.4

USE OF MEO-LEO INTER-SATELLITE LINK MEASUREMENTS FOR ON-BOARD AUTONOMOUS ODS OF GNSS SATELLITES
Enrico Edoardo Zini, Thales Alenia Space, Roma, Italy

IAC-24.B2.1.5

MARTIAN NAVIGATION EXPLOITING THE MARCONI NAVIGATION SERVICES
Floor Thomas Melman, European Space Agency (ESA-ESTEC), Noordwijk, The Netherlands

IAC-24.B2.1.6

MULTIPATH EXTRACTION AND MITIGATION METHOD BASED ON WAVELET DENOISING FOR GNSS SINGLE POINT POSITIONING
Salma Zainab Farooq, Institute of Space Technology (IST), Islamabad, Pakistan

IAC-24.B2.1.7

THE STRATEGY AND SOLUTIONS OF THE ITALIAN SPACE AGENCY TO INTRODUCE A GNSS-BASED AUTOMATIC TRAIN PROTECTION SYSTEM
Francesca Pieralice, ASI - Italian Space Agency, Roma, Italy; Giancarlo Varacalli, Italian Space Agency (ASI), Roma, Italy

IAC-24.B2.1.8

AFRICAN SBAS: AIRSPACE TRANSFORMATION FOR SAFETY AND SUSTAINABILITY
Ruth Okoh, Space Generation Advisory Council (SGAC), Lagos, Nigeria

IAC-24.B2.1.9

ANALYSIS OF POSITIONING ACCURACY BY OPERATIONAL SCENARIO ACCORDING TO THE CORRECTION MESSAGE SCHEDULE
YOOLA HWANG, Electronics and Telecommunications Research Institute (ETRI), Daejeon, Korea, Republic of

IAC-24.B2.1.10

STUDY OF LUNAR NON-GRAVITATIONAL PERTURBATION MODELS FOR ADVANCED ORBIT DETERMINATION SERVICES IN ELLIPTICAL LUNAR FROZEN ORBITS
Eleonora Antonietti, Telespazio S.p.A., Rome, Italy

IAC-24.B2.1.11

PERFORMANCE ASSESSMENT FOR AUTONOMOUS ORBIT DETERMINATION OF GEO SPACECRAFT USING INTERSATELLITE MEASUREMENTS
Jiaqi Liu, Beihang University (BUAA), Shanghai, China

IAC-24.B2.1.12

EVOLUTION OF SERVICE MONITORING TOOLS IN THE CONTEXT OF AN INCREASINGLY COMPLEX GLOBAL SATELLITE NAVIGATION SYSTEM
Antonio Salonic, SpaceOpal, Munich, Germany

B2.2. Space-based PNT (Position, Navigation, Timing) Sensors and Systems

October 16 2024, 10:15 — Orange Hall 2

Co-Chair(s): Joe M. Straus, The Aerospace Corporation, United States; Peter Buist, European Union Agency for the Space Programme (EUSPA), The Netherlands

Rapporteur(s): Sanat K Biswas, IIIT Delhi, India

IAC-24.B2.2.1

A SIMULATION ENVIRONMENT TO TEST GNSS-BASED NAVIGATION ALGORITHMS FOR LUNAR MISSIONS
Franco Gottifredi, WAY4WARD s.r.l., Rome, Italy

IAC-24.B2.2.2

DESCENT AND LANDING IN LUNAR ENVIRONMENT BY DEEP LEARNING POWERED VISUAL-BASED NAVIGATION
Luca Ostrogovich, University of Naples "Federico II", Napoli, Italy

IAC-24.B2.2.3

LUNAR PNT BEACON AND REFERENCE STATION SYSTEM STUDY
Isacco Pretto, OHB Italia SpA, Milano, Italy

IAC-24.B2.2.4

TOWARDS A COMPREHENSIVE LOCATION AND ATTITUDE DETERMINATION FOR A ROLLING, WIND-DRIVEN MARS ROVER
Tim Holthuijsen, Team Tumbleweed, Delft, The Netherlands

IAC-24.B2.2.5

A NOVEL APPROACH USING INTERFERENCE CLASSIFICATION AND MITIGATION ON GNSS AND LTE/5G NETWORKS WITH HYBRIDIZATION FOR A SECURE PNT
Burcu Ozkaptan, Telespazio, Transinne, Belgium

IAC-24.B2.2.6

NAVIGATION PAYLOAD AND SATELLITE DESIGN FOR LEO PNT CONSTELLATION
Mayank Mayank, Aalto University, espoo, Finland

IAC-24.B2.2.7

PAYLOAD TESTING OF RF SIGNALING TECHNOLOGY DEMONSTRATOR FOR A 6U GNSS AUGMENTATION SYSTEM SATELLITE
Hassan Al-Ali, The National Space Science and Technology Center (NSSTC), Al-Ain, United Arab Emirates

IAC-24.B2.2.8

PERFORMANCE ASSESSMENT USING THE FIRST GALILEO HIGH ACCURACY SERVICE (HAS) RECEIVER
Pedro PINTOR, SpaceOpal, Munich, Germany

IAC-24.B2.2.9

NEW APPROACH FOR HIGH PRECISION RANGING AND TIMING FOR SPACE APPLICATION: DYNAMIC OPTICAL RANGING & TIMING (DORT)
Bastian Eder, Munique Technology GmbH, Munich, Germany

IAC-24.B2.2.10

TOWARDS DOMAIN GAP BRIDGING VIA SYNTHETIC VIS SENSOR MODEL
Lucia Bianchi, Politecnico di Milano, Pagnana Lario (CO), Italy

IAC-24.B2.2.11

INNOVATIVE ARTIFICIAL INTELLIGENCE-BASED STAR TRACKER FOR DEEP SPACE EXPLORATION.
May Hammad, University of Würzburg, Würzburg, Germany

IAC-24.B2.2.12

MACHINE LEARNING APPLIED TO SIGNALS OF OPPORTUNITY
Martin Bransby, Telespazio UK, Luton, United Kingdom

B2.3. Advance Higher Throughput Communications for GEO and LEO satellites

October 16 2024, 15:00 — Orange Hall 2

Co-Chair(s): Timur Kadyrov, International Telecommunication Union (ITU), Switzerland; Dunay Badirkhanov, Azercosmos, Space Agency of Republic of Azerbaijan, Azerbaijan

Rapporteur(s): K.R. Sridhara Murthi, NIAS, India

IAC-24.B2.3.1

ADVOCATING THE CASE FOR A LARGE-SCALE INDUSTRY MARKETPLACE FOR SPACE RF SPECTRUM LEASING
Stirling Forbes, Space Generation Advisory Council (SGAC), Mauran, France

IAC-24.B2.3.2

EUROPEAN CONSTELLATION IRIS2: ANALYSIS OF THE FUTURE STRATEGIC SPACE INFRASTRUCTURE FOR EUROPE IN THE GLOBAL COMPETITION DYNAMICS FOR THE ELECTROMAGNETIC SPECTRUM
Martino Fascendini, AMISaDeS Research Center APS, Abbadia Lariana, Italy

IAC-24.B2.3.3 (unconfirmed)

ENHANCING SATELLITE OPERATIONS THROUGH DATASAT: A STUDY ON NOISE MITIGATION SYSTEMS WITHIN THE ADA FRAMEWORK
SERGIO SOARES, RIBEIRAO PRETO, Brazil

IAC-24.B2.3.4

SWISSTO12'S ADDITIVE MANUFACTURING AND HUMMINGSAT SMALL GEO ENABLE NEW MISSIONS
Michael Kaliski, SWISSTO12 SA, Renens, Switzerland

IAC-24.B2.3.5

BLINK SOFTWARE SATELLITE MODEM: EXCEEDING 10 GB/S CONTINUOUS THROUGHPUT
Tomislav Nakić-Alfirević, Amphinicy Technologies, Zagreb, Croatia

IAC-24.B2.3.6

USING PREDICTIVE ALGORITHMS TO AVOID INTERFERENCE ON WIDEBAND DOWNLINKS
Bryan Butler, KSAT AS, Denver, United States

IAC-24.B2.3.7

BROADBAND LEO CONSTELLATION SERVICE SCHEDULING: COEXISTENCE OF GLOBAL CONNECTIVITY WITH GSO SYSTEMS
Shamil Biktimirov, Technology Innovation Institute (TII), Abu Dhabi, United Arab Emirates

IAC-24.B2.3.8

RESEARCH ON MODELING AND SIMULATION OF SPACE-EARTH INTEGRATED COMMUNICATION SYSTEM-OF-SYSTEMS
WEI WANG, Institute of Telecommunication Satellite, China Academy of Space Technology (CAST), Bdiqing, China

IAC-24.B2.3.9

MULTI-ORBIT GEO-LEO SATELLITE SYSTEM BASED ON THE 5G-NR ARCHITECTURE. LEGA SATELLITE SYSTEM
Iryna Dyachuk, The Sergei Korolev Space Museum, Zhytomyr, Ukraine

IAC-24.B2.3.10

ADVANCEMENTS OF MULTIPLE ACCESS TECHNOLOGIES IN PROVIDING SATELLITE DATA SERVICES
Babak Aslanov, Azercosmos, Space Agency of Republic of Azerbaijan, Baku, Azerbaijan

IAC-24.B2.3.11

ASSESSING IMPACT OF THE CHANGES IN ACTUAL DEPLOYMENT OF A SATELLITE SYSTEM ON THE STATUS OF RECORDING IN ITU
Timur Kadyrov, International Telecommunication Union (ITU), Onex, Switzerland

B2.4. Space-based Optical and Quantum Communications

October 17 2024, 10:15 — Orange Hall 2

Co-Chair(s): Laszlo Bacsardi, Hungarian Astronautical Society (MANT), Hungary; Kevin Shortt, Airbus Defence & Space, Germany

Rapporteur(s): Steven Shumsky, Millennium Space Systems, A Boeing Company, United States

IAC-24.B2.4.1

TRANSFER OF PRECISE TIMING DATA SECURED USING QKD IN A SIMULATED SATELLITE LINK
Paolo Villoriesi, Università degli Studi di Padova, Padova, Italy

IAC-24.B2.4.2

CONSTELLATION SIMULATION TOOL FOR QUANTUM COMMUNICATION SPACE NETWORKS
Daniel Heinig, Fraunhofer Institute for Applied Optics and Precision Engineering IOF, Jena, Germany

IAC-24.B2.4.3

SPACE SOLUTIONS AND CHALLENGES TO ENABLE SECURE AND GLOBAL QUANTUM COMMUNICATIONS
Mauro Valeri, Thales Alenia Space Italia (TAS-I), Rome, Italy

IAC-24.B2.4.4

GAOM: A MODULAR ADAPTIVE OPTICS PLATFORM FOR SPACE-BASED LASERCOM AND QKD
Francesco Vedovato, Sarcedo, Italy

IAC-24.B2.4.5

RELIABILITY OF CONSTELLATIONS WITH INTER-SATELLITE COMMUNICATION
Giacomo Acciarini, European Space Agency (ESA), Leiden, The Netherlands

IAC-24.B2.4.6

UTILISING AUSTRALIAN INFRASTRUCTURE TO FACILITATE PERSISTENT DEEP SPACE OPTICAL COMMUNICATIONS.
Elisa Jager, Australian National University (ANU), Mt Stromlo, Australia

IAC-24.B2.4.7

SYSTEM TEST RESULTS OF HIGH-SPEED LASER COMMUNICATION SYSTEM HICALI ONBOARD ENGINEERING TEST SATELLITE 9
Hideaki Kotake, National Institute of Information and Communications Technology (NICT), Koganei city, Tokyo, Japan

IAC-24.B2.4.8

OPTICAL FEEDER-LINKS ACCESS ANALYSIS FOR NON-GEOSTATIONARY LARGE CONSTELLATIONS
Samuele Raffa, DLR (German Aerospace Center), Weßling, Germany; Luca Pizzuto, DLR (German Aerospace Center), München, Germany

IAC-24.B2.4.9

PERFORMANCE COMPARISON OF ACQUISITION SCAN PATTERNS FOR OPTICAL COMMUNICATIONS IN LEO SATELLITES
Alejandro Camanzo-Mariño, Universidad de Vigo, Vigo, Pontevedra, Spain

IAC-24.B2.4.10

DEMONSTRATION OF COHERENT OPTICAL COMMUNICATIONS AND RANGING FOR SMALL SATELLITES
Hannah Tomio, Massachusetts Institute of Technology (MIT), Cambridge, United States

B2.5. Extra-Terrestrial and Interplanetary Communications, and Regulations

October 17 2024, 15:00 — Orange Hall 2

Co-Chair(s): Dipak Srinivasan, The John Hopkins University Applied Physics Laboratory, United States; Ramon P. De Paula, National Aeronautics and Space Administration (NASA), United States

Rapporteur(s): Sara AlMaeeni, Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

IAC-24.B2.5.1

KEYNOTE: INTERNATIONAL COLLABORATIVE GROUND STATIONS SUPPORT IN THE MOON-TO-MARS ERA
Sami Asmar, Jet Propulsion Laboratory - California Institute of Technology, Pasadena, United States

IAC-24.B2.5.2

DISTRIBUTED BACKUP ROUTING IN CASE OF LINK FAILURE IN LOW EARTH ORBIT OPTICAL COMMUNICATION CONSTELLATION NETWORK
Kazuki Takashima, University of Tokyo, Tokyo, Japan

IAC-24.B2.5.3

THE SPACE COMMUNICATION CAPABILITY UPGRADE OF THE SARDINIA DEEP SPACE ANTENNA
Giuseppe Valente, Italian Space Agency (ASI), Cagliari, Italy

IAC-24.B2.5.5

LUNAR LINK THE EUROPEAN MODULE THAT CONNECTS THE LUNAR GATEWAY TO THE MOON
Davide Rovelli, ESA - European Space Agency, Noordwijk, The Netherlands

IAC-24.B2.5.6

MARS ICE MAPPER COMMUNICATIONS SYSTEM
Massimiliano Marcozzi, Thales Alenia Space Italia (TAS-I), Roma, Italy

IAC-24.B2.5.7

DYNAMIC PATHFINDING: TIME-VARIANT ROUTING STRATEGIES FOR INTERPLANETARY COMMUNICATIONS
Edward Birrane, The John Hopkins University Applied Physics Laboratory, Laurel, United States

IAC-24.B2.5.8

LUNAR SPECTRUM PLANNING: INTERNATIONAL TECHNICAL COLLABORATION AND ARCHITECTURE DEVELOPMENT
Catherine Sham, NASA, Houston, United States

IAC-24.B2.5.9

AN INTERPLANETARY COMMUNICATIONS RELAY POWERED BY AMERICIUM-241 FUELLED RADIOISOTOPE POWER SYSTEMS
Hannah Sargeant, University of Leicester, Leicester, United Kingdom

IAC-24.B2.5.10

MULTILAYER MICROSTRIP PATCH ANTENNA ARRAY SYSTEM FOR THE CANADIAN PEEKBOT LUNAR ROVER

Yianni Hudon-Castillo, Polytechnique Montreal, Montréal, Canada;
Sabrina Kirk, Université du Québec à Montréal, Montréal, Canada;
Louis-Frédéric Racicot, Polytechnique Montreal, Montréal, Canada

IAC-24.B2.5.11

ON THE FEASIBILITY OF LASER SATELLITE COMMUNICATIONS FROM THE MARTIAN SURFACE

Eva Fernandez Rodriguez, Netherlands Organisation for Applied Scientific Research (TNO), Leiden, The Netherlands

IAC-24.B2.5.12

LARGE ANTENNA MECHANICAL NOISE CALIBRATION (LANC) SYSTEM FOR THE NASA DEEP SPACE NETWORK (DSN)

Remi LaBelle, National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, Pasadena, CA, United States

B2.6. Cubesat, Internet of Things, and Mobile Direct Communications

October 18 2024, 10:15 — Orange Hall 2

Co-Chair(s): Debra Emmons, The Aerospace Corporation, United States; Amane Miura, National Institute of Information and Communications Technology (NICT), Japan

Rapporteur(s): Giuseppe D'Amore, Agenzia Spaziale Italiana (ASI), Italy

IAC-24.B2.6.1

FROM INTERNET OF THINGS TO INTER-SATELLITE LINKS WITH THE WILDTRACKCUBE-SIMBA AND CORAL CUBESATS

Paolo Marzioli, Sapienza University of Rome, Rome, Italy

IAC-24.B2.6.2

CUBESAT COMMUNICATION TESTING PLATFORM FOR A RADIOFREQUENCY CARRIER PLATFORM

Lovejivan Sidhu, York University, Toronto, Canada

IAC-24.B2.6.3

SATELLITE-IOT SYSTEMS IN SRD BANDS: TECHNICAL FEASIBILITY AND REGULATORY STATUS

Martin von der Ohe, Einbeck, Germany

IAC-24.B2.6.4

DATA TRANSMISSION IN STORE AND FORWARD BASED NON-TERRESTRIAL NETWORKS FOR IOT USE CASES

Timo Kellermann, i2CAT, Barcelona, Spain

IAC-24.B2.6.5

6GSTARLAB - A CUBESAT MISSION TO SUPPORT THE DEVELOPMENT AND STANDARDIZATION OF NON-TERRESTRIAL NETWORKS TOWARDS 6G

Joan Adrià Ruiz de Azúa Ortega, i2CAT, Barcelona, Spain

IAC-24.B2.6.6

SDN/NFV-BASED SATELLITE NETWORKS: CHALLENGES AND DEVELOPMENTS

Hossein Rouzegar, i2CAT, Barcelona, Spain

IAC-24.B2.6.7

BRIDGING TERRESTRIAL AND SATELLITE NETWORKS: EXPLORING THE POSSIBILITIES FOR 6G TN-NTN CONVERGENCE

Florian Zeiger, Siemens AG, Munich, Germany

IAC-24.B2.6.8

TOWARDS A PROTOTYPING AND TESTING ENVIRONMENT FOR SMALL SATELLITE PAYLOADS IN A 3D-COMMUNICATION NETWORK FOR 6G

Luka Kliewe, ZARM, University of Bremen, Bremen, Germany

IAC-24.B2.6.9

OWL: A MISSION-SAVING GNSS BASED SUBSYSTEM FOR NANOSATS IN THE LEOP

Dániel Móna, C3S Electronics Development LLC, Budapest, Hungary

IAC-24.B2.6.10

ENHANCING DATA TRANSFER WITH AN IP INTERFACE ON THE PRETTY CUBESAT

Andreas Johann Hörmer, Graz University of Technology (TU Graz), Graz, Austria

IAC-24.B2.6.11

SECURE SOFTWARE DEFINED RADIO (SDR) SMALL-SIZE SATELLITE FOR HYBRID CONSTELLATIONS

Mirca Gargiulo, Thales Alenia Space Italia, Rome, Italy

IAC-24.B2.6.12

SMALL SATELLITES CONSTELLATION FOR NARROWBAND COMMUNICATIONS

Nicole Lamorgese, Thales Alenia Space Italia (TAS-I), Rome, Italy

B2.7. Advances in Space-based Network and Communication Technologies

October 15 2024, 10:15 — Orange Hall 2

Co-Chair(s): Elemer Bertenyi, Canadian Aeronautics and Space Institute, Canada; Enrique Pacheco Cabrera, Incomspace, Mexico

Rapporteur(s): Eva Fernandez Rodriguez, Netherlands Organisation for Applied Scientific Research (TNO), Spain

IAC-24.B2.7.1

PROJECT LANDAU: BOOSTING PLASMA ANTENNAS IN SPACE

Daniele Pavarin, T4i, Padova, Italy

IAC-24.B2.7.2

NETWORKING WITH DYNAMIC RECONFIGURABILITY AND ROBUSTNESS FOR MODULAR SPACECRAFT

Mark Post, University of York, York, United Kingdom

IAC-24.B2.7.3

EVOLUTIONARY OPTIMIZATION OF REFLECTARRAYS WITH STEERING BEAM BY FEEDER ROTATION FOR SATELLITE ANTENNAS

Matteo Faieta, Politecnico di Milano, Milan, Italy

IAC-24.B2.7.4

DEVELOPMENT OF A HIGH-DIRECTIVITY GLASS REFLECTARRAY ANTENNA FOR COMMERCIAL COMMUNICATION APPLICATIONS

Xiaoyu Du, China Aerospace Science and Technology Corporation (CASC), Shanghai, China

IAC-24.B2.7.5

DESIGN AND OPTIMIZATION OF A PATCH ANTENNA FOR KU-BAND SATELLITE INTERNET RECEPTION

AHMED ALI KANOUN, Agence Spatiale Algérienne (ASAL), Oran, Algeria

IAC-24.B2.7.6

IOD MISSION FOR DIRECT 5G BROADBAND ACCESS FROM LEO

Luca Deva, Tyvak International, Turin, Italy

IAC-24.B2.7.7

IRIS²: THE NEW EU PROGRAMME PROVIDING SECURE COMMUNICATIONS VIA SATELLITES

Jaime Ferragut, European Commission, Ispra, Italy

IAC-24.B2.7.8

INTER-SATELLITE LINK MULTI-SERVICE SATELLITE TRANSCEIVER (MUST)

Davide Silvi, Airbus Defence & Space, Space Systems, Rome, Italy

IAC-24.B2.7.10

EXPLORING AVIONIC CONNECTIVITY IN MODERN SPACE SYSTEMS: EXPERIMENTAL EVALUATIONS OF THE INNOVATIVE FLEXIBLE TIME TRIGGERED ETHERNET

Tiziana Fiori, Sapienza University of Rome, Roma, Italy

IAC-24.B2.7.11

DESIGN AND IMPLEMENTATION OF THE PROTOCOL STACK OF THE CONTROL PLANE IN HYBRID INTER-SATELLITE LINK TERMINALS

Joan Adrià Ruiz de Azúa Ortega, i2CAT, Barcelona, Spain

IAC-24.B2.7.12

SALSAT: FOUR YEARS IN ORBIT - MISSION RESULTS AND RELEASE OF THE FREE-TO-ACCESS RF SPECTRUM DATABASE

Jens Freymuth, Technische Universität Berlin, Berlin, Germany

B2.8-GTS.3. Space Communications and Navigation Global Technical Session

October 14 2024, 15:30 — Yellow Hall 1

Co-Chair(s): Joshua Critchley-Marrows, The University of Sydney, Australia; Eric Wille, ESA, The Netherlands

Rapporteur(s): Behnoosh Meskoob, École de technologie supérieure, Canada

IAC-24.B2.8-GTS.3.1

DETECTION OF GNSS SPOOF SIGNALS BY MULTIPLE PEAK ANALYSIS IN SIGNAL ACQUISITION

DINESH MANANDHAR, University of Tokyo, Kashiwa, Japan

IAC-24.B2.8-GTS.3.2

OCCASAT: OPTICAL CAMERA COMMUNICATIONS FOR INTRA-SATELLITE DATA TRANSFER

Francesco Ferrari, Argotec, Turin, Italy

IAC-24.B2.8-GTS.3.3

ADVANCING FREE-SPACE OPTICAL COMMUNICATION SYSTEM ARCHITECTURE: PERFORMANCE ANALYSIS OF VARIED OPTICAL GROUND STATION NETWORK CONFIGURATIONS

Eugene Rotherham, University College London (UCL), Woking, United Kingdom

IAC-24.B2.8-GTS.3.4

OVERCOMING GNSS LIMITATIONS IN FORESTED ENVIRONMENTS THROUGH COLLABORATIVE POSITIONING

Katrin Dietmayer, Fraunhofer - Institut für Integrierte Schaltungen IIS, Nuremberg, Germany

IAC-24.B2.8-GTS.3.5

FAST SUPER-RESOLUTION-BASED PULSE PHASE ESTIMATION METHOD FOR XNAV

Yusong Wang, National University of Defense Technology, Changsha, China

IAC-24.B2.8-GTS.3.6

DISRUPTIVE LAUNCH AND THE SHIFT FROM A MASS TO A COST PARADIGM IN SATELLITE COMMUNICATIONS

Stephan Roemer, OHB, Bremen, Germany

IAC-24.B2.8-GTS.3.7

INVESTIGATION OF THE FEASIBILITY OF DIFFERENT QUANTUM MEMORIES IN SATELLITE-BASED QUANTUM INTERNET

Kitti Oláh, Budapest University of Technology and Economics, Budapest, Hungary

IAC-24.B2.8-GTS.3.8 (unconfirmed)

THE EFFECT OF SOLAR CORONAL HOLES ON SKY WAVE PROPAGATION AND VHF WIRELESS COMMUNICATIONS

Mohammad Rihan, Sharjah Academy for Astronomy, Space Sciences and Technology (SAASST), Sharjah, United Arab Emirates

IAC-24.B2.8-GTS.3.9

MOONLIGHT: A PARADIGM SHIFT FOR FUTURE COMMUNICATION AND NAVIGATION SERVICES AROUND THE MOON

Carlo Albanese, Telespazio S.p.A., Rome, Italy

IAC-24.B2.8-GTS.3.10

HOW IMPORTANT ARE GNSS RECEIVERS IN AFTS?

Inigo Cortés, Fraunhofer - Institut für Integrierte Schaltungen IIS, Nuremberg, Germany

B3. IAF HUMAN SPACEFLIGHT SYMPOSIUM

Coordinator(s): Kevin D. Foley, The Boeing Company, United States; Igor V. Sorokin, S.P. Korolev Rocket and Space Corporation Energia, Russian Federation; Peter Batenburg, Netherlands Space Society (NVR), The Netherlands

B3.1. Governmental Human Spaceflight Programmes (Overview)

October 14 2024, 15:30 — Space Hall 4

Co-Chair(s): Sam Scimemi, NASA, United States; Juergen Schlutz, European Space Agency (ESA), Germany

Rapporteur(s): Antonio Fortunato, European Space Agency (ESA), Germany

IAC-24.B3.1.1

A UNIFIED VISION FOR DEEP SPACE HUMAN EXPLORATION

Catherine Koerner, NASA, Washington DC, United States

IAC-24.B3.1.2

INTERNATIONAL DEVELOPMENT FOR LUNAR SURFACE HABITATION

Federica Vagnone, Thales Alenia Space Italia, Turin, Italy

IAC-24.B3.1.3

JAXA'S OVERVIEW OF HUMAN SPACEFLIGHT PROGRAMS AND SPACE EXPLORATION

Mayumi Matsuura, Japan Aerospace Exploration Agency (JAXA), Tsukuba, Japan

IAC-24.B3.1.4

CANADA AND THE INTERNATIONAL SPACE STATION PROGRAM: OVERVIEW AND STATUS IN THE CONTEXT OF CANADIAN PRIORITIES FOR SPACE EXPLORATION

Elisabeth Marceau, Canadian Space Agency, Saint-Hubert, Canada

IAC-24.B3.1.5

ARGONAUT: ESA'S VERSATILE LUNAR LANDER ENABLING MULTIPLE MOON MISSIONS

Giorgio Cifani, European Space Agency (ESA/ESTEC), Amsterdam, The Netherlands

IAC-24.B3.1.6

FILLING THE GAPS: HOW NASA INITIATES NEW ELEMENTS INTO ITS MOON TO MARS ARCHITECTURE

Nujoud Merancy, National Aeronautics and Space Administration (NASA), Houston, United States

IAC-24.B3.1.7

THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION'S CURRENT PLANS FOR FUTURE LOW EARTH ORBIT OPERATIONS

Ken Bowersox, National Aeronautics and Space Administration (NASA), Washington, DC, United States

IAC-24.B3.1.8

THE FUTURE OF THE INTERNATIONAL SPACE STATION, LOW-EARTH ORBIT, AND INTERNATIONAL SPACE COOPERATION

Robyn Gatens, National Aeronautics and Space Administration (NASA), Washington DC, United States

IAC-24.B3.1.9

NASA'S APPROACH TO LUNAR COMMUNICATION AND NAVIGATION: ARTEMIS AND BEYOND

Kevin Coggins, NASA, Washington, DC, United States

IAC-24.B3.1.10

GATEWAY PROGRAM DEVELOPMENT PROGRESS

Emma Lehnhardt, NASA, Houston, United States; Jon Olansen, NASA, Houston, United States; Sean Fuller, National Aeronautics and Space Administration (NASA), Johnson Space Center, Houston, Texas, United States; Tiffany Travis, Barrios Technology Inc., Houston, United States

IAC-24.B3.1.11

NASA'S HUMAN LANDING SYSTEM PROGRAM: PROGRESS TOWARD ARTEMIS III AND BEYOND
Kent Chojnacki, NASA Marshall Space Flight Center, Huntsville, United States

B3.2. Commercial Human Spaceflight Programmes

October 15 2024, 10:15 — Space Hall 4

Co-Chair(s): Sergey K. Shavich, Khrunichev State Research & Production Space Center, Russian Federation; Kevin D. Foley, The Boeing Company, United States; Michael E. Lopez Alegria, MLA Space, LLC, United States

IAC-24.B3.2.1

NASA'S DEVELOPMENT OF COMMERCIAL LOW EARTH ORBIT
Angela Hart, NASA, Houston, United States

IAC-24.B3.2.2

STARLAB SPACE: A HOSPITALITY-INSPIRED PARADIGM FOR COMMERCIAL SPACE STATIONS IN COLLABORATION WITH HILTON WORLDWIDE
Donya Naz Divsalar, Airbus Defence & Space, Bremen, Germany

IAC-24.B3.2.3

BALANCED ARCHITECTURE: OPTIMIZING HUMAN HABITABILITY AND SPIN STABILITY IN AN ARTIFICIAL GRAVITY SPACE STATION
Molly McCormick, Vast Space, El Segundo, United States

IAC-24.B3.2.4

ASTROGATE: A CONCEPTUAL DESIGN STUDY FOR A POST-ISS COMMERCIAL CREWED SPACE STATION
Smit Patel, Airbus Defence & Space, Tettnang, Germany; David Hernando Diaz, Universitat Politècnica de Catalunya (UPC), Castelldefels, Spain

IAC-24.B3.2.5

COMMERCIAL HUMAN SPACEFLIGHT PROGRAMME – ENTICING OPPORTUNITIES & SCARING CHALLENGES
Murthy Remilla, U R RAO SATELLITE CENTRE (URSC), BENGALURU, India

IAC-24.B3.2.6

THE APPROACH OF INTERNATIONAL SPACE LAW TOWARDS SPACE TOURISTS AND CAREER ASTRONAUTS: ARE CHANGES NEEDED?
Matúš Babják, Matej Bel University, Bučany, Slovak Republic; Barbora Mracká, Charles University, Prag, Czech Republic

IAC-24.B3.2.7

MUNINN MISSION ON AXIOM-3: THE FIRST COLLABORATION TO FLY AN ESA ASTRONAUT ON A COMMERCIAL FLIGHT
Chiara Piacenza, Telespazio, Noordwijk, The Netherlands

IAC-24.B3.2.8

STARLAB'S HUMAN-CENTERED APPROACH TO DESIGN A NEXT GENERATION SPACE STATION FOR THE UPCOMING ERA OF COMMERCIAL SPACEFLIGHT
Donya Naz Divsalar, Airbus Defence & Space, Bremen, Germany

B3.3. Utilization & Exploitation of Human Spaceflight Systems

October 15 2024, 15:00 — Space Hall 4

Co-Chair(s): Eleanor Morgan, Lockheed Martin Space Systems, United States; Kavya K. Manyapu, NASA, United States; Thomas A.E. Andersen, Danish Aerospace Company A/S, Denmark

IAC-24.B3.3.1

STUDY ON PARASTRONAUT INGRESS AND EGRESS OF ORION AND BOEING CST-100 STARLINER SPACE VEHICLES
Jesse Rhoades, University of North Dakota, Grand Forks, United States

IAC-24.B3.3.2

TESTING OF IN-SITU RESOURCE UTILIZATION TECHNOLOGIES FOR FUTURE HUMAN MARS EXPLORATION WITHIN THE FRAMEWORK OF UPCOMING LUNAR MISSIONS.
Isaac McCann, University of Leicester, MAIDENHEAD, United Kingdom

IAC-24.B3.3.3

TELEOPERATED ASTROPHARMACEUTICAL PAYLOAD FOR LONG-DURATION SPACE MISSIONS: PROJECT VITA!
Sedat Izcan, University of Nottingham, Nottingham, United Kingdom

IAC-24.B3.3.4

RESEARCH ON HUMAN-IN-THE-LOOP LUNAR SIMULATOR SYSTEM
Xiyu Wang, Tsinghua University, Beijing, China

IAC-24.B3.3.5

OPTIMIZING PAYLOAD SPECIALIST TRAINING AND PREPAREDNESS FOR HUMAN-TENDED PAYLOAD MISSIONS ON SUBORBITAL SPACEFLIGHT VEHICLES: LESSONS FROM THE IIAS-01/GALACTIC-05 MISSION
Shawna Pandya, International Institute for astronautical Sciences (IIAS), Sherwood Park, Canada; Kellie Gerardi, International Institute for astronautical Sciences (IIAS), Jupiter, United States

IAC-24.B3.3.6

MHI'S LUNAR SOCIETY CONCEPTS AND EFFORTS FOR IMPLEMENTATION
Koichi Abe, Mitsubishi Heavy Industries, Ltd., Nagoya, Japan

IAC-24.B3.3.7

ADOPTING AGILE THROUGH TOOLING-DRIVEN PROCESSES
Kelly Gasperski, MDA, Ajax, Canada; Matthew Schmeiser, MDA, Brampton, Canada

IAC-24.B3.3.8

DOMUS - A PROPOSAL FOR A USER-ORIENTED DESIGN-ENGINEERING RESEARCH GROUP FOR HUMAN SPACEFLIGHT (WORKING TITLE)
Paivi Jukola, Aalto University, Helsinki, Finland

IAC-24.B3.3.9

ARTIFICIAL GRAVITY SPACE STATION: BENEFITS, DESIGN AND THEORISATION TOWARDS DEEP SPACE EXPLORATION
David Alejandro Villa Stopelli, Instituto Politécnico Nacional, Mexico City, Mexico

B3.4-B6.4. Flight & Ground Operations aspects of Human Spaceflight - Joint Session of the IAF Human Spaceflight and IAF Space Operations Symposia

October 16 2024, 10:15 — Space Hall 4

Co-Chair(s): Dieter Sabath, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany; Annamaria Piras, Thales Alenia Space Italia, Italy

Rapporteur(s): Maria Grulich, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

IAC-24.B3.4-B6.4.1

PROVING GROUND CAPABILITIES NEEDED FOR LUNAR IN SITU RESOURCE UTILIZATION (ISRU) & CONSTRUCTION CONCEPTS OF OPERATION
Gerald Sanders, National Aeronautics and Space Administration (NASA), Johnson Space Center, Houston, TX, United States

IAC-24.B3.4-B6.4.2

THE ESA GROUND SEGMENT FOR HUMAN EXPLORATION – MIGRATION TO A MULTI-MISSION ENVIRONMENT
Thomas Mueller, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Wessling, Germany; Frank Peters, DLR, German Aerospace Center, Cologne, Germany

IAC-24.B3.4-B6.4.3

OPENVOCS REDUNDANCY CONCEPT
Markus Töpfer, German Aerospace Center (DLR), Berlin, Berlin, Germany

IAC-24.B3.4-B6.4.4

SIMULATING A SIMULATION: DEVELOPING LUNAR EXPLORATION OPERATIONS FOR THE LUNA FACILITY USING EUROPE'S PRIVATE ANALOGUE SITES

Matej Poljacek, DLR (German Aerospace Center), Bratislava, Slovak Republic

IAC-24.B3.4-B6.4.5

EXTENDED REALITY LUNARES EXPERIMENT (XRLE): A FRAMEWORK FOR HUMAN-SYSTEM INTEGRATION TESTING USING IMMERSIVE TECHNOLOGIES

Corrado Testi, University of Houston, Houston, United States

IAC-24.B3.4-B6.4.6

DEVELOPING AN ASTRONAUT TRAINING TOOL FOR REMOTE MANIPULATOR SYSTEMS IN VIRTUAL REALITY

Isha Parvaiz, European Space Agency (ESA), London, United Kingdom

IAC-24.B3.4-B6.4.7

HUMAN FACTORS EXPERIMENT DESIGN PROCESS IN THE CONTEXT OF DEEP SPACE HABITAT MAINTENANCE OPERATIONS WITH AUTONOMOUS AGENTS

Ulubilge Ulusoy, University of Southern California, Los Angeles, United States

IAC-24.B3.4-B6.4.8

DEVELOPING THE NEW ESA CONCEPT OF OPERATIONS FOR THE AXIOM-3 MISSION, THE FIRST MISSION OF AN ESA ASTRONAUT ON A COMMERCIAL SPACEFLIGHT

Joao Lousada, GMV Aerospace & Defence SAU, Gilching, Germany

IAC-24.B3.4-B6.4.9

ENHANCING COMMERCIAL PUBLIC OUTREACH SERVICES WITH THE ICE CUBES MEDIA SET ON THE INTERNATIONAL SPACE STATION

Olivier Lamborelle, Space Applications Services, Sint Stevens Woluwe, Belgium

IAC-24.B3.4-B6.4.10

COMMERCIAL OPERATION AND TRAINING: PREPARATION AND EXECUTION OF THE MICROALGAE LIFE SCIENCE EXPERIMENT ON ISS

Manuela Aguzzi, Space Applications Services, Woluwe Saint Lambert, Brussels, Belgium

B3.5. Astronaut Training, Accommodation, and Operations in Space

October 16 2024, 15:00 — Space Hall 4

Co-Chair(s): Igor V. Sorokin, S.P. Korolev Rocket and Space Corporation Energia, Russian Federation; Alan T. DeLuna, American Astronautical Society (AAS), United States

Rapporteur(s): Andrea Boyd, European Space Agency (ESA), Germany

IAC-24.B3.5.1

ASTRONAUT TRAINING, EVOLUTION IN THE NEW SPACE ERA
Manuela Aguzzi, Space Applications Services, Woluwe Saint Lambert, Brussels, Belgium

IAC-24.B3.5.2

LEARNING TASK-FOCUSED DEEP VISUOMOTOR POLICIES FOR MULTIMODAL ASTRONAUT-ROBOT COLLABORATIVE MANIPULATION
Chuanke Pang, Beihang University, Beijing, China

IAC-24.B3.5.3

LUNA PUPPETEER: A LARGE SCALE AND MULTI-AGENT GRAVITY OFFLOADING SOLUTION TO TRAIN ASTRONAUTS FOR MOON EXPLORATION MISSIONS
Guillaume Fau, Space Applications Services nv/sa, Zaventem, Belgium

IAC-24.B3.5.4

THE EFFECTIVENESS OF USING AN AVATAR WHEN CONDUCTING JUST-IN-TIME TRAINING IN A VIRTUAL REALITY RENDERED COLUMBUS MODULE
Erik Seedhouse, Embry-Riddle Aeronautical University, Daytona Beach, United States

IAC-24.B3.5.5

ENHANCING EXTRAVEHICULAR ACTIVITY (EVA) TRAINING: UTILIZING 360-DEGREE IMAGERY FOR VIRTUAL ENVIRONMENT CREATION AND ASSESSMENT IN ASTRONAUT PREPARATION
Mac Malkawi, Blinc- Borderless lab, York, United States

IAC-24.B3.5.6

ENHANCING ASTRONAUT SITUATIONAL AWARENESS DURING SURFACE EXTRA-VEHICULAR ACTIVITY WITH REAL-TIME AI VISION SUPPORT
David Smith, ILEWG "EuroMoonMars", Glasgow, United Kingdom

IAC-24.B3.5.7

MISSION DESIGN, PLANNING, OPERATIONS, CREW DYNAMICS AND HUMAN FACTORS ON A SUBORBITAL RESEARCH FLIGHT: LESSONS FROM THE IIAS-01 GALACTIC 05 FLIGHT*
Shawna Pandya, International Institute for astronautical Sciences (IIAS), Sherwood Park, Canada

B3.6-A5.3. Human and Robotic Partnerships in Exploration - Joint session of the IAF Human Spaceflight and IAF Exploration Symposia

October 17 2024, 15:00 — Space Hall 4

Co-Chair(s): Pierre-Alexis Joumel, Airbus Defence and Space, Germany; Mark Hemsell, The British Interplanetary Society, United Kingdom

Rapporteur(s): Jan Marius Bach, DLR (German Aerospace Center), Germany; Scott Ritter, International Space University (ISU), France

IAC-24.B3.6-A5.3.1

ASTROBEE OPERATIONS ON THE ISS: GUI'S IMPACT ON THE OPERATORS' COGNITIVE LOAD
Andres Mora Vargas, NASA Ames Research Center, Sunnyvale, United States

IAC-24.B3.6-A5.3.2

INT-BALL2: JEM INTERNAL CAMERA ROBOT - INITIAL CHECKOUT IN THE ISS AND PROSPECTS OF ITS UTILIZATION
Tatsuya Yamamoto, Japan Aerospace Exploration Agency (JAXA), Tsukuba, Japan

IAC-24.B3.6-A5.3.3

STAYING ALIVE! : A HUMAN FACTORS EXPERIMENT FOR THE AMADEE - 24 MARS ANALOG MISSION
Sahil Bhatia, University of Bremen, Bremen, Germany

IAC-24.B3.6-A5.3.4

ATMOSPHERIC ROBOT - HUMAN-ROBOT INTERACTION IN SPACESUITS AT THE MARS DESERT RESEARCH STATION
Erin Kennedy, Robot Missions Inc, Kingston, Canada

IAC-24.B3.6-A5.3.5

HUMAN-MACHINE INTERACTION FOR ROVER TELEOPERATION DURING MARS ANALOG MISSION
Katherine Mulry, ISAE-Supaero University of Toulouse, Toulouse, France

IAC-24.B3.6-A5.3.6

INVESTIGATING THE EFFICIENCY AND FEASIBILITY OF SPACE MISSIONS WITH ROBOTIC SOLUTIONS FOR DEXTEROUS OPERATIONS IN SPACECRAFT WITH COMMUNICATION DELAYS
Masaaki Muromachi, Honda R&D Co., Ltd., Tokyo, Japan

IAC-24.B3.6-A5.3.7

ADVANCING SPACE HEALTH: TOWARDS A SOFT WEARABLE HYPOGRAVITY EXOSUIT (HEXSUIT) FOR ENHANCED MOBILITY IN MARTIAN CONDITIONS
Emanuele Pulvirenti, University of Bristol, Bristol, United Kingdom

IAC-24.B3.6-A5.3.8

VALIDATING RAPID TRUST MEASUREMENTS IN SPACEFLIGHT-RELEVANT HUMAN-AUTONOMY TEAMING APPLICATIONS
Sarah Leary, University of Colorado Boulder, Boulder, United States

IAC-24.B3.6-A5.3.9

UTILIZING LEXAMUS ARCHITECTURE TO TRANSFORM HUMAN SPACE EXPLORATION OPERATIONS
Nicholas Florio, Lunar Outpost, Highlands Ranch, United States; Saira O. Williams, Space Generation Advisory Council (SGAC), San Rafael, Costa Rica

IAC-24.B3.6-A5.3.10

INTELLIGENT ROBOTIC TELEOPERATED SYSTEM FOR ON-ORBIT SERVICE OF LARGE SPACE STRUCTURES
Mingkun Li, China Academy of Aerospace Science and Innovation, Beijing, China

B3.7. Advanced Systems, Technologies, and Innovations for Human Spaceflight

October 17 2024, 10:15 — Space Hall 4

Co-Chair(s): Michele Gates, NASA Headquarters, United States; Mauro Augelli, UK Space Agency, United Kingdom; Sébastien BARDE, Centre National d'Etudes Spatiales (CNES), France
Rapporteur(s): Gi-Hyuk Choi, Korea Aerospace Research Institute (KARI), Korea, Republic of

IAC-24.B3.7.1

EXTENDING ISS LIFE BEYOND 2030
Liang Shen, The Boeing Company, Houston, United States

IAC-24.B3.7.2

THE COLUMBUS DATA MANAGEMENT INFRASTRUCTURE (CDMI): A CLOUD ABOVE THE SKY ON THE ISS
Jan Tekülve, CGI, Bochum, Germany; Alexander Balgavy, Space Applications Services NV/SA, Sint-Stevens-Woluwe, Belgium

IAC-24.B3.7.3

A EUROPEAN HUMAN SPACE TRANSPORTATION SYSTEM – DRIVERS FOR DEVELOPMENT
Lorenzo Gretter, Agenzia Spaziale Italiana (ASI), Trento, Italy

IAC-24.B3.7.4

ARCHITECTURE DESIGN OF MANNED SPACECRAFT AUTONOMOUS HEALTH MANAGEMENT SYSTEM
Peng Li, Technology and Engineering Center for Space Utilization, Chinese Academy of Sciences, Beijing, China

IAC-24.B3.7.5

MUSHROOM MISSIONS: PIONEERING NUTRITIONAL, CULINARY AND AGRICULTURAL SOLUTIONS FOR DEEP SPACE EXPLORATION
Flavia Fayet-Moore, Sydney, Australia

IAC-24.B3.7.6

DESIGN, DEVELOPMENT AND QUALIFICATION OF AN EUROPEAN INTERNATIONAL BERTHING AND DOCKING MECHANISM (IBDM)
Joaquín Meléndez, Redwire Space, kruibeke, Belgium

IAC-24.B3.7.7

USING AI FOR PREDICTIVE MAINTENANCE IN HUMAN SPACEFLIGHT: CHALLENGES, OPPORTUNITIES, AND SOLUTIONS
Nelli Babayan, Arlington, United States

IAC-24.B3.7.8

A WATER-BASED, NUCLEAR-ENABLED LUNAR ARCHITECTURE
Timothy Cichan, Lockheed Martin Corporation, Littleton, United States

IAC-24.B3.7.10

REUSABLE MARS TRANSPORTATION ARCHITECTURE MODELING FOR LARGER CREWED MISSIONS
George Lordos, Massachusetts Institute of Technology (MIT), Cambridge, MA, United States

IAC-24.B3.7.11

RESEARCH ON EFFICIENT LIFE SUPPORT SYSTEMS FOR SPACE HABITATION ACTIVITIES, CONSIDERING BOTH CREWED AND UNCREWED PERIOD
Kazuki Toma, Department of Engineering, The University of Tokyo, Kanagawa, Japan

IAC-24.B3.7.12

TOWARDS A RELIABLE OFFLINE PERSONAL AI ASSISTANT FOR LONG DURATION SPACEFLIGHT
Wafa M. Sadri, German Aerospace Center (DLR), Cologne, Germany

B3.8. Human Space & Exploration

October 18 2024, 10:15 — Space Hall 4

Co-Chair(s): Dan King, MDA Corporation, Canada; Tara Ruttley, Blue Origin LLC, United States
Rapporteur(s): Joost van Tooren, ArianeGroup SAS, France

IAC-24.B3.8.1

ELEVEN COUNTRIES, AN INTEGRATED SPACECRAFT: THE STORY OF INTERNATIONAL COLLABORATION THAT BUILT THE ORION SPACECRAFT AND POWERED THE SUCCESS OF THE ARTEMIS I MISSION
Carlos Garcia-Galan, NASA, Medina, United States

IAC-24.B3.8.2

DESIGN CONSTRAINTS AND IMPROVEMENTS ASSOCIATED WITH RADIATION HAZARD IN SPACE HABITATS
Eszter Gulacs, Astro SpArch, Caselle Torinese, Italy

IAC-24.B3.8.3

HI-SEAS: THE HAWAI'I SPACE EXPLORATION ANALOG AND SIMULATION HABITAT AND EMMIHS 2023/2024 MISSIONS AND RESEARCH
Kato Claeys, International MoonBase Alliance, Poperinge, Belgium

IAC-24.B3.8.4

CHARGING AND DIELECTRIC BREAKDOWN OF DUSTY SPACESUIT: IMPLICATIONS FOR ASTRONAUT SAFETY AT THE LUNAR TERMINATOR
JOSEPH WANG, University of Southern California, Los Angeles, United States

IAC-24.B3.8.5

MILITARY MEDICAL SUPPORT TO THE SPACE DOMAIN. ANY NEWS?
Jacopo Frassini, Italian Air Force, PADOVA, Italy

IAC-24.B3.8.6

QUANTIFYING MEDICAL RISK TO IMPROVE MEDICAL SYSTEM DESIGN ON A LONG DURATION LUNAR MISSION: A DEMONSTRATION OF NASA'S IMPACT TRADESPACE ANALYSIS TOOL
Arian Anderson, The University of Colorado, BOULDER, United States

IAC-24.B3.8.7

SYNCHRONIZING THE COSMOS: THE CRITICAL ROLE OF TIMEKEEPING SYSTEMS IN GATEWAY'S OPERATIONAL SUCCESS
Svetlana Hanson, NASA, Houston, United States

IAC-24.B3.8.8

HUMAN NAVIGATION IN PLANETARY EXPLORATION: FINDING YOUR WAY WITHOUT A COMPASS OR GPS
Scott Dorrington, Massachusetts Institute of Technology (MIT), Somerville, United States

IAC-24.B3.8.9

ELEVATING COMFORT AND ENJOYMENT IN COMMERCIAL SPACE TRAVEL: INTEGRATED WELL-BEING STRATEGIES
Vincent Alder, Bromley, United Kingdom

IAC-24.B3.8.10

MARTEMIS: MARTIAN ANALOG RESEARCH AND TRAINING EXPERIMENTS ON THE MOON WITH INTERNATIONAL SIMULATIONS
Lanie McKinney, Massachusetts Institute of Technology (MIT), Boston, United States; Palak Patel, Massachusetts Institute of Technology (MIT), Cambridge, United States

B3.9-GTS.2. Human Spaceflight Global Technical Session

October 18 2024, 13:45 — Yellow Hall 1

Co-Chair(s): Guillaume Girard, Zero2infinity, Spain; Andrea Jaime, Isar Aerospace Technologies GmbH, Germany

Rapporteur(s): Joao Lousada, GMV Aerospace & Defence SAU, Germany

IAC-24.B3.9-GTS.2.1

MINDFUL MISSION: NAVIGATING MENTAL HEALTH IN SPACE WITH WEARABLE TECH OR BEYOND THE STARS: HARNESSING WEARABLE TECH TO SAFEGUARD ASTRONAUT MENTAL HEALTH
Binh Trang, Medical University of South Carolina, Mount Pleasant, United States

IAC-24.B3.9-GTS.2.2

MAPPING NEUROCIRCUITRY DIFFERENCES IN ASTRONAUTS
Rucha Kelkar, Medical University of South Carolina, Charleston, United States

IAC-24.B3.9-GTS.2.3

ASTRONAUT PROFILE EVOLUTION STUDY: ANALYZING EVOLUTION SINCE 1961 - HOW HAS SOCIETY SHAPED THE IDEAL ASTRONAUT?
Luísa Santos, Space Generation Advisory Council (SGAC), Parnamirim, Brazil

IAC-24.B3.9-GTS.2.4

SLEEP DEPRIVATION AND GLYMPHATIC SYSTEM DYSFUNCTION AS A RISK FACTOR FOR SANS DURING LONG-DURATION SPACEFLIGHT
Joshua Venegas, Medical University of South Carolina, Charleston, United States

IAC-24.B3.9-GTS.2.5

DEVELOPING CLOTHING THAT EXERCISES ASTRONAUTS' MUSCLES DURING SPACE MISSIONS
Abdurrahman Demir CAN, Üsküdar / İSTANBUL, Türkiye

IAC-24.B3.9-GTS.2.7

SPACEFLIGHT-INDUCED GLYMPHATIC DYSFUNCTION AND THE RISK OF DEMENTIA
Kyle Stegmann, Medical University of South Carolina, Charleston, United States

IAC-24.B3.9-GTS.2.8

"FAILURE IS NOT AN OPTION." - WHEN PERCEIVED FAILURE REMAINS UNSPOKEN IT LEADS ORGANISATIONAL DAMAGE AND AT THE END IT MAY RESULT IN COMPROMISED MISSION CRITICAL OUTCOMES
Ilaria Cinelli, Aerospace Medical Association, Turin, Italy

IAC-24.B3.9-GTS.2.9

FROM CALL FOR IDEAS TO THE ISS IN LESS THAN A YEAR: LESSONS LEARNED FROM THE FIRST ESA PROJECT ASTRONAUT MISSION.
Michail Magkos, Royal Institute of Technology (KTH), Huddinge, Sweden

IAC-24.B3.9-GTS.2.10

UNVEILING THE EFFECTS OF MICROGRAVITY ON COGNITIVE FUNCTIONS DURING PARABOLIC FLIGHTS
Raffaella Ricci, University of Turin, Turin, Italy

B4. 31st IAA SYMPOSIUM ON SMALL SATELLITE MISSIONS

Coordinator(s): Alex da Silva Curiel, Surrey Satellite Technology Ltd (SSTL), United Kingdom; Jian Guo, Delft University of Technology (TU Delft), The Netherlands

Support(s): Rhoda Shaller Hornstein, United States

B4.1. 25th Workshop on Small Satellite Programmes at the Service of Developing Countries

October 15 2024, 10:15 — Space Hall 2

Co-Chair(s): Sias Mostert, Space Commercial Services Holdings (Pty) Ltd, South Africa; Nathalie RICARD, United Nations Office for Outer Space Affairs, Austria; Taiwo Raphael Tejumola, International Space University, France

Rapporteur(s): Danielle Wood, Massachusetts Institute of Technology (MIT), United States; Pierre Molette, France

IAC-24.B4.1.1

FROM EMERGING TO SUSTAINABLE SPACE PROGRAMS IN AFRICA
Sias Mostert, Space Commercial Services Holdings (Pty) Ltd, Stellenbosch, South Africa

IAC-24.B4.1.2

STRENGTHENING THE PHILIPPINE SPACE ECOSYSTEM THROUGH SMALL SATELLITE DEVELOPMENT AND CAPACITY BUILDING
John Leur Labrador, Philippine Space Agency, Quezon City, The Philippines

IAC-24.B4.1.3

SPACE TECHNOLOGY INITIATIVES IN OMAN: INNOVATIONS, EDUCATION, AND GLOBAL ENGAGEMENT
Muhammad Rizwan Mughal, Sultan Qaboos University (SQU), Muscat, Oman

IAC-24.B4.1.4

OPPORTUNITIES FOR CUBESAT-RELATED CAPACITY-BUILDING UNDER THE UNITED NATIONS ACCESS TO SPACE FOR ALL INITIATIVE: ACHIEVEMENTS IN 2023-2024
Mami Sasamura, United Nations Office for Outer Space Affairs, Vienna, Austria

IAC-24.B4.1.5

NYARKOA CANSAT MODULE: A COST-EFFECTIVE APPROACH TO SIMULATING SPACE MISSIONS
Solomon Appekey, LEEDS, United Kingdom

IAC-24.B4.1.6

HOW NEAR-EQUATORIAL CUBESATS COULD DRASTICALLY IMPROVE WEATHER MONITORING AND FORECAST OVER EQUATORIAL/TROPICAL REGIONS.
Erick Lansard, Satellite Research Center, Nanyang Technological University (NTU), Singapore, Singapore, Republic of

IAC-24.B4.1.7

ENDEAVORS TO SUPPORT FOR INDIGENOUS SATELLITE PROJECTS IN EMERGING COUNTRIES AND ENCOURAGE NEW PLAYERS TO ENTRY SPACE SECTOR THROUGH OPEN-SOURCE ACTIVITIES
Tetsuhito Fuse, Kyushu Institute of Technology, Kitakyushu, Japan

IAC-24.B4.1.8

DEMOCRATIZING SPACE: CONCLUSION AND LESSONS LEARNED FROM THE BIRDS-X APRS PAYLOAD COMPETITION.
Tasuku Matsui, Kyushu Institute of Technology, Kyoto City, Japan

IAC-24.B4.1.9

CATALYZING SPACE TECHNOLOGY DEVELOPMENT IN BANGLADESH: A SPACE SYSTEM ENGINEERING TRAINING INITIATIVE
Prapty Majumder Golpa, BRAC University, Dhaka, Bangladesh

IAC-24.B4.1.10

ASEAN MULTINATION COLLABORATION PROJECT: CRAFTING INDIGENOUS SPACE PROGRAM IN MALAYSIA
Ir. Dr.Mohamad Huzaimy Jusoh, Universiti Teknologi MARA (UITM), Selangor, Malaysia

IAC-24.B4.1.12

ADVANCES IN THE CAPACITY BUILDING PROJECTS FOR THE DEVELOPMENT OF THE FIRST NANO-SATELLITES AND GROUND STATIONS IN DOMINICAN REPUBLIC AND PANAMA
Paolo Marzioli, Sapienza University of Rome, Rome, Italy

IAC-24.B4.1.13

A BLUEPRINT FOR EMERGING SPACE NATIONS: DEVELOPING A COST-EFFECTIVE 6U CUBESAT IN JORDAN
Mohammad Milhim, amman, Jordan

B4.2. Small Space Science Missions

October 14 2024, 15:30 — Space Hall 2

Co-Chair(s): Larry Paxton, The John Hopkins University Applied Physics Laboratory, United States; Norbert M.K. Lemke, OHB System AG - Oberpfaffenhofen, Germany

Rapporteur(s): Roberta Mugellesi-Dow, European Space Agency (ESA), United Kingdom; Oana van der Togt, Netherlands Aerospace Centre (NLR), The Netherlands

IAC-24.B4.2.1

MISSION AND SYSTEM DEFINITION OF THE INNOVATOR CUBESAT FOR GRAVITY AND ATMOSPHERIC SCIENCE
Dario Modenini, Alma Mater Studiorum - University of Bologna, Bologna, Italy

IAC-24.B4.2.2

MESOM: A MOON-ENABLED SUN OCCULTATION MISSION
Nicola Baresi, Surrey Space Centre, University of Surrey, Guildford, United Kingdom

IAC-24.B4.2.3

LIRIS – LUNAR INFRARED IMAGING SYSTEM FOR HIGH RESOLUTION VOLATILE MAPPING, A SMALL SATELLITE TO SUPPORT SCIENCE AND EXPLORATION MISSIONS
Alex da Silva Curiel, Surrey Satellite Technology Ltd (SSTL), Guildford, Surrey, United Kingdom

IAC-24.B4.2.4

CUSP CUBESAT FOR SPACE WEATHER AND SOLAR FLARES X-RAY POLARIMETRY: AN OVERVIEW OF THE DEVELOPMENT STATUS
Andrea Terracciano, Italian Space Agency (ASI), Rome, Italy

IAC-24.B4.2.5

THE SOLAR POLARIZATION AND DIRECTIVITY X-RAY EXPERIMENT (PADRE) CUBESAT MISSION
Giuseppe Naso, EnduroSat AD, Naples, Italy

IAC-24.B4.2.6

PITCH RESOLVING SPECTROSCOPY FOR ELECTRON TRANSPORT (PRESET): A 3U CUBESAT MISSION
Magalie Durepos-Létourneau, McMaster University, Timmins, Canada

IAC-24.B4.2.7

HERMES PATHFINDER: SCIENTIFIC GOALS AND DATA HANDLING.
Simonetta Puccetti, Agenzia Spaziale Italiana (ASI), Roma, Italy

IAC-24.B4.2.8

THE PHOTSAT MISSION: UV-OPTICAL ALL-SKY MONITORING WITH A CUBESAT
Ignasi Esteve Gras, Institut d'Estudis Espacials de Catalunya (IEEC), Barcelona, Spain

IAC-24.B4.2.9

HERMES PATHFINDER & SPIRIT: A PROGRESS REPORT
Fabrizio Fiore, INAF - Istituto Nazionale di AstroFisica, Trieste, Italy

IAC-24.B4.2.10

FLIGHT EXPERIENCE IN SPACE WEATHER MONITORING USING CUBESATS
Valeriia Melnikova, Bauman Moscow State Technical University, Tula, Russian Federation

IAC-24.B4.2.11

LARES 2 MISSION: THE CONSOLIDATION OF ITALIAN HERITAGE IN LASER RANGED SATELLITES
Simone Pirrotta, Italian Space Agency (ASI), Roma, Italy

IAC-24.B4.2.12

AURORA: ESA'S SMALL SATELLITE MISSIONS TO MONITOR THE AURORAL OVAL
Mehdi Scoubeau, European Space Agency (ESA-ESOC), Darmstadt, Germany

B4.3. Small Satellite Operations

October 15 2024, 15:00 — Space Hall 2

Co-Chair(s): Andreas Hornig, AerospaceResearch.net, Germany; Nijin Jose Thykkathu, Science and Technology Facilities Council, United Kingdom; Stephan Roemer, OHB, Germany

Rapporteur(s): Lynette Tan, Singapore Space and Technology LTD (SSTL), Singapore, Republic of

IAC-24.B4.3.1

THE SPACE RIDER OBSERVER CUBE (SROC) CUBESAT MISSION
Luca Deva, Tyvak International, Turin, Italy

IAC-24.B4.3.2

PROTOTYPE OF A WORKFLOW FOR A DIGITAL TWIN IN SMALL SATELLITE OPERATIONS
Ulrich Kling, German Aerospace Center (DLR), Oberpfaffenhofen, Germany

IAC-24.B4.3.3

TOWARDS THE DEVELOPMENT OF A REUSABLE SMALLSATS SPACECRAFT: THE EARS PROJECT
Valentina Raimondi, 'Nello Carrara' Institute of Applied Physics - National Research Council of Italy (CNR-IFAC), Sesto Fiorentino, Italy

IAC-24.B4.3.4

NEPAL'S NEXT GENERATION CUBESAT BUS: IMPROVING BIRDS OPEN SOURCE SATELLITE BUS SYSTEM FOR INCREASED PAYLOAD VOLUME AND REDUCED COST
Trishna Shrestha, Nepal Space Foundation, kathmandu, Nepal

IAC-24.B4.3.5

ENHANCING AUTONOMY FOR CLOSE-PROXIMITY OPERATIONS: THE MSCA-FUNDED PROJECT CASTOR
Carmine Giordano, Politecnico di Milano, Milan, Italy

IAC-24.B4.3.6

ONBOARD CLASSIFICATION TO GUIDE CAPTURE DOWNLINK USING THE HYPPO-1 SATELLITE
Simen Berg, Norwegian University of Science and Technology, Trondheim, Norway

IAC-24.B4.3.7

MISSION OPERATIONS FOR PRECISE IN-ORBIT COLLISION PREDICTION AND SPACE ENVIRONMENT SURVEILLANCE
Anton Johann Große Siestrup, Technische Universität Berlin, Berlin, Germany

IAC-24.B4.3.8

COLLABORATION IN SPACE: AN INNOVATIVE BUSINESS APPROACH TO UNLOCKING THE NEW IN-ORBIT SERVICING MARKET
Marco Guerzoni, SAB Launch Services srl, Lugo, Italy

IAC-24.B4.3.9

A CHALLENGING CONCEPT OF OPERATIONS: THE HENON MISSION
Paride Amabili, Argotec, Turin, Italy

IAC-24.B4.3.10

ADAPTIVE ON-ORBIT SOFTWARE RECONFIGURATION OF SPHERE-1 EYE AOCs HARDWARE FAILURE
Riki Nakamura, University of Tokyo, Tokyo, Japan

IAC-24.B4.3.11

INNOVATIONS AND RELIABILITY IN MINICOR: HOW FMEA AND ARCHITECTURE RELIABILITY ANALYSIS CAN IMPACT A MISSION POTENTIAL SUCCESS
Giorgia Casadei, Argotec, Turin, Italy

IAC-24.B4.3.12

AUTONOMOUS ADCS COMMISSIONING FOR NADIR POINTING SMALL SATELLITES
Ben Hudson, KISPE Space Systems Limited, Farnborough, United Kingdom

B4.4. Small Earth Observation Missions

October 16 2024, 10:15 — Space Hall 2

Co-Chair(s): Carsten Tobehn, European Space Agency (ESA), The Netherlands; Larry Paxton, The John Hopkins University Applied Physics Laboratory, United States; Eugene D Kim, Satrec Initiative, Korea, Republic of

Rapporteur(s): Werner R. Balogh, European Space Agency (ESA), France; Marco Gomez Jenkins, United Kingdom

IAC-24.B4.4.1

THE DESIGN EVOLUTION OF A NEXT-GENERATION MICROSATELLITE GREENHOUSE GAS MONITORING CONSTELLATION

Rahul Ravin, Space Flight Laboratory, University of Toronto, Toronto, Ontario, Canada; Elise Lariviere, Space Flight Laboratory (SFL), Toronto, Canada

IAC-24.B4.4.2

ROSPIN-SAT-1: ROMANIA'S FIRST OPEN SOURCE EARTH OBSERVATION CUBESAT MISSION

Sebastian Severin, Politehnica University of Bucharest, Constanta, Romania

IAC-24.B4.4.3

THE HYPSON RGB CAMERAS AND RGB-HYPERSPECTRAL SUPER-RESOLUTION

Dennis Langer, Norwegian University of Science and Technology, Trondheim, Norway

IAC-24.B4.4.4

AMBIC (AMBITIOUS CZECH SATELLITES) – CZECH ADVANCED PLATFORM FOR NATIONAL EARTH OBSERVATION MISSION

Michal Kubik, Vyzkumny a Zkusebni letecky ustav, a.s. - vzlu, Prague, Czech Republic

IAC-24.B4.4.5

NANOSATELLITES AND VOLCANO MONITORING: GXIBA-1'S CONTRIBUTION TO MEXICAN RISK MANAGEMENT

Alan Gomez, Universidad Popular Autónoma del Estado de Puebla, Puebla, Mexico

IAC-24.B4.4.6

FUCHENG-1: THE FIRST SMALL SAR SATELLITE TO ROUTINELY \\\ MONITOR GROUND DISPLACEMENT TO MILLIMETER LEVEL

Yuxiao Qin, Northwestern Polytechnical University, Xi'an, China

IAC-24.B4.4.7

ADVANCED TECHNOLOGY AND ON-ORBIT PERFORMANCE OF DALIAN 1-LIANLI SATELLITE

Xiaozhou Yu, Dalian University of Technology (DUT), Dalian, China

IAC-24.B4.4.8

SMALL SATELLITE DESIGN FOR HIGH-RESOLUTION METHANE EMISSIONS MONITORING

Abdullah Algharrash, Space Generation Advisory Council (SGAC), Riyadh, Saudi Arabia; Sara Santoro, Space Generation Advisory Council (SGAC), Milan, Italy

IAC-24.B4.4.9

ANALYSIS OF VIEWING GEOMETRY FOR HIGH AGILITY SMALL SATELLITE PLATFORM FOR GHG EMISSIONS OBSERVATIONS IN SUN GLINT MODE

Andrew Karim, Space Generation Advisory Council (SGAC), Montreal, Canada

IAC-24.B4.4.10

DESIGN OF THE PRELUDE CUBESAT FOR OBSERVING ELECTROMAGNETIC PERTURBATIONS ASSOCIATED WITH SEISMIC ACTIVITY

Nagisa Sone, Nihon University, Funabashi, Japan

IAC-24.B4.4.11

PLATINO MULTI-MISSION PLATFORM: APPLICATIONS

Andrea Mafficini, Sitael Spa, ROMA, Italy

IAC-24.B4.4.12

THE SCOUT FRAMEWORK: ESA'S EARTH SCIENCE SMALL SATELLITES PROGRAM

Massimiliano Pastena, ESA - European Space Agency, Noordwijk, The Netherlands

IAC-24.B4.4.13

DEVELOPMENT OF SMALL SATELLITE NEXTSAT-2 FOR X-BAND SAR DEMONSTRATION

Tae Seong Jang, Satellite Technology Research Center, KAIST, Daejeon, Korea, Republic of

IAC-24.B4.4.14

OVERVIEW OF THE ARAB SATELLITE 813: A SMALL SATELLITE FOR EARTH OBSERVATION WITH HYPERSPECTRAL IMAGING CAPABILITIES

Mohammed Altamimi, The National Space Science and Technology Center (NSSTC), Alain, United Arab Emirates

B4.5. Access to Space for Small Satellite Missions

October 16 2024, 15:00 — Space Hall 2

Co-Chair(s): Yves Gerard, Airbus Defence & Space, France; Philip Davies, Surrey Satellite Technology Ltd (SSTL), United Kingdom

Rapporteur(s): Jeff Emdee, The Aerospace Corporation, United States; Carlos Niederstrasser, Northrop Grumman Corporation, United States

IAC-24.B4.5.1

HYMOVE: ENABLING HYMPULSE IN-ORBIT CAPABILITIES FOR SMALL SATELLITE MISSIONS

Michele Spirolazzi, Hympulse Technologies GmbH, Neuenstadt am Kocher, Germany

IAC-24.B4.5.2

CONFIGURATION DESIGN AND APPLICATION OF LM-2D LAUNCH VEHICLE SMALL SATELLITE RIDESHARE MISSION

Yide Li, Aerospace System Engineering Shanghai, China, Shanghai, China

IAC-24.B4.5.3

FRAMSAT-1: THE FIRST NORWEGIAN SATELLITE FROM NORWEGIAN SOIL

Roger Birkeland, Norwegian University of Science and Technology, Trondheim, Norway

IAC-24.B4.5.4

ITU REGULATORY PROCEDURES AND THE ITU-R HANDBOOK FOR SMALL SATELLITES

Xiuqi Wang, International Telecommunication Union (ITU), Geneva, Switzerland

IAC-24.B4.5.5

INTEGRATED RIDESHARE MISSION PLANNING FOR SMALL SATELLITES USING ORBITAL TRANSFER VEHICLE

Junsub Hwang, Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea, Republic of

IAC-24.B4.5.6

FOUR SPACEX RIDESHARE LAUNCH MISSIONS: FACILITATING ACCESS TO SPACE FOR FIVE SATELLITES IN 1.5 YEARS - INSIGHTS FROM A SATELLITE OPERATOR'S PERSPECTIVE IN THE FIRST TWO YEARS OF COMPANY OPERATIONS

Ceyda Yarimbatman, Plan-S Satellite and Space Technologies, ANKARA, Türkiye

IAC-24.B4.5.7

STACKED SMALL-SATELLITE LAUNCH CONCEPT FOR COST EFFICIENT, FLEXIBLE AND HIGHLY RELIABLE MULTIPLE SATELLITE LAUNCHES

Tomas Ridosko, OHB Czechspace, Brno, Czech Republic

IAC-24.B4.5.8

STRATEGIC DYNAMICS IN SMALL SATELLITE LAUNCH INDUSTRY: MARKET FIT AND BUSINESS MODEL SUSTAINABILITY IN QUESTION

Maxime PUTEAUX, Euroconsult, Paris, France

IAC-24.B4.5.9

DESIGN AND VALIDATION OF HOLD DOWN RELEASE MECHANISM (HDRM) FOR THE 6U CUBESAT SPORT
Breno Cruciali, Instituto Tecnológico de Aeronáutica (ITA), Espoo, Finland

IAC-24.B4.5.10

ADDRESSING THE ACCESS-TO-SPACE BOTTLENECK FOR AUSTRALIAN START-UPS WITH UNIVERSITY-LED HIGH ALTITUDE BALLOON LAUNCHES
Ariane Platell, QL Space, Perth, Australia

B4.6A. Generic Technologies for Small/Micro Platforms

October 18 2024, 13:45 — Space Hall 2

Co-Chair(s): Philip Davies, Surrey Satellite Technology Ltd (SSTL), United Kingdom; Joost Elstak, ICEYE, The Netherlands

Rapporteur(s): Jian Guo, Delft University of Technology (TU Delft), The Netherlands; Thomas Terzibaschian, DLR, German Aerospace Center, Germany

IAC-24.B4.6A.1

AUTOMATED REACTION WHEEL DESATURATION USING VECTORING ELECTRIC PROPULSION IN GEO
Ivelin Penchev, Space Inventor, Aalborg, Denmark

IAC-24.B4.6A.2

ORBIT PREDICTION OF 16U CUBESAT OBSERVER-1A USING ONBOARD GPS DATA
Hyunghik Oh, NARA SPACE TECHNOLOGY Inc., Seoul, Korea, Republic of

IAC-24.B4.6A.3

PERFORMANCE CHARACTERIZATION OF REACTION WHEELS FOR A SMALL SATELLITE ASTRONOMICAL OBSERVATION MISSION
Abigail MacGillivray, Space Flight Laboratory, University of Toronto, Toronto, Canada

IAC-24.B4.6A.4

ON-ORBIT PERFORMANCE VERIFICATION OF A NANOSAT STAR TRACKER
Mikel Samson, LEUVEN, Belgium

IAC-24.B4.6A.5

IN-ORBIT VERIFICATION ON ATTITUDE CONTROL SYSTEM (ACS) OF DEAR-1
Guan Wang, Beijing AZSPACE Technology Co., Ltd, Beijing, China

IAC-24.B4.6A.6

ADRASTEIA: A DEMONSTRATION OF MOMENTUM EXCHANGE TETHER TECHNOLOGY FOR SMALL SATELLITES
Ben Campbell, University of Alabama in Huntsville, Huntsville, United States

IAC-24.B4.6A.7

ON-ORBIT DEMONSTRATION OF AN INNOVATIVE ASYNCHRONOUS ONE-WAY RANGING DEVICE ONBOARD A 3U SATELLITE
Junichiro Kawaguchi, Australian National University (ANU), Canberra, Australia

IAC-24.B4.6A.8

DYNAMIC SIMULATION OF ELECTRICAL AND THERMAL SYSTEMS FOR RAPID DESIGN ITERATION AND VALIDATION OF POWER PROFILES FOR 3U IMAGING CUBESAT
Aryan Garg, Birla Institute of Technology and Science (BITS), Bengaluru, India

IAC-24.B4.6A.9

COMPARATIVE ANALYSIS OF GROUND AND IN ORBIT THERMAL PERFORMANCE OF THE PRETTY CUBESAT SDR PLATFORM
Andreas Johann Hörmer, Graz University of Technology (TU Graz), Graz, Austria

IAC-24.B4.6A.10

IN-ORBIT DEMONSTRATION OF NEAR REAL-TIME COMMUNICATION UTILIZING THE GLOBALSTAR FOR TIME-DOMAIN ASTRONOMY
Katsuki Tashiro, Tokyo Institute of Technology, Tokyo, Japan

IAC-24.B4.6A.11

STATUS OF HELIOS-R MEMBRANE-DEPLOYED MICROWAVE INTERFEROMETER DEMONSTRATION MISSION
Ahmed Kiyoshi Sugihara El Maghraby, Japan Aerospace Exploration Agency (JAXA), Sagami City, Japan

IAC-24.B4.6A.13

CUBESATS & NANOSATELLITES - 2024 STATISTICS, FORECAST AND RELIABILITY
Erik Kulu, Tallinn, Estonia

B4.6B. Generic Technologies for Nano/Pico Platforms

October 17 2024, 10:15 — Space Hall 2

Chairman(s): Andy Vick, RAL Space, United Kingdom

Co-Chair(s): Zeger de Groot, Innovative Solutions in Space BV, The Netherlands

Rapporteur(s): Martin von der Ohe, Germany; Paolo Marzioli, Sapienza University of Rome, Italy

IAC-24.B4.6B.1

MICROHETSAT FIRST NINE MONTHS IN-ORBIT
Vincenzo Stanzione, Sitael Spa, Mola di Bari (BA), Italy

IAC-24.B4.6B.2

ALTCUBE+: A LOW-COST LONG FIXED-BASELINE RADAR ALTIMETER SOLUTION BASED ON CUBESATS ON-ORBIT ASSEMBLY
Jian Guo, Delft University of Technology (TU Delft), Delft, The Netherlands

IAC-24.B4.6B.3

ADDRESSING THE DOWNLINK DATA BOTTLENECK
Andrew Haslehurst, Surrey Satellite Technology Ltd (SSTL), Guildford, United Kingdom

IAC-24.B4.6B.4

FLIGHT RESULTS OF THE ATTITUDE DETERMINATION SYSTEM BASED ON OPENHARMONY REAL-TIME OPERATING SYSTEM
Wenlong Zhang, Dalian University of Technology (DUT), Dalian City, China

IAC-24.B4.6B.5 (unconfirmed)

LILIUM CUBESATS FOR SMART REMOTE SENSING AND KU-BAND COMMUNICATION
Jyh-Ching Juang, National Cheng Kung University, Tainan, Taiwan, China

IAC-24.B4.6B.6

FPGA-BASED ONBOARD ANOMALY DETECTION FOR OPS-SAT TELEMETRY UTILIZING STATISTICAL METHODS
Filip Novoselnik, Protostar Labs, Osijek, Croatia

IAC-24.B4.6B.7

ENHANCING CUBESAT RELIABILITY AND EFFICIENCY: AN APPROACH TO HOT REDUNDANCY WITH HETEROGENEOUS HARDWARE-SOFTWARE ARCHITECTURE
Yinghao Xiang, Beihang University, Beijing, China

IAC-24.B4.6B.8

RECONFIGURATION OF FPGA DURING OPERATION OF SMALL SATELLITE FOR FLEXIBLE HYPERSPECTRAL DATA COMPRESSION
Simen Eine, Norwegian University of Science and Technology, Trondheim, Norway

IAC-24.B4.6B.9

ADVANCED RADIATION MONITORING SOLUTION FOR NEW SPACE APPLICATIONS
Jussi Lehti, Aboa Space Research Oy, Turku, Finland

IAC-24.B4.6B.10

FLEXIBLE INFERENCE OF ARBITRARY PRECISION NEURAL NETWORK ACCELERATOR FOR CLOUD DETECTION
Samuel Boyle, Norwegian University of Science and Technology, Trondheim, Norway

IAC-24.B4.6B.11

A BENCHMARKING PIPELINE TO EVALUATE NEURAL NETWORK ACCELERATION APPROACHES ON FPGA
Ric Dengel, University of Tartu, Tõravere, Estonia

IAC-24.B4.6B.12

ADVANCING IN-SPACE PRECISE TRACKING: A FORMATION-FLYING PICOSATELLITES MISSION
Marianna Centrella, Politecnico di Torino, Torino, Italy

IAC-24.B4.6B.13

CORAL: A 2U CUBESAT PLATFORM TO TEST TT&C SERVICES USING INTERNET-OF-THINGS DEVICES
Paolo Marzioli, Sapienza University of Rome, Rome, Italy

IAC-24.B4.6B.14

TANGO CUBESAT MISSION FOR EMISSION MONITORING
Richard Meadows, ISIS - Innovative Solutions In Space B.V., Delft, The Netherlands

B4.7. Constellations and Distributed Systems

October 17 2024, 15:00 — Space Hall 2

Co-Chair(s): Rainer Sandau, International Academy of Astronautics (IAA), Germany; Michele Grassi, University of Naples "Federico II", Italy

Rapporteur(s): Jaime Esper, National Aeronautics and Space Administration (NASA), United States; Maria Daniela Graziano, University of Naples "Federico II", Italy

IAC-24.B4.7.1

SPACE WEATHER INVESTIGATION FRONTIER (SWIFT) MISSION CONCEPT: CONTINUOUS DISTRIBUTED OBSERVATIONS OF GEO-EFFECTIVE, HELIOSPHERIC STRUCTURES FROM THE VANTAGE POINTS OF SUN-EARTH L1 AND SUB- L1
Les Johnson, National Aeronautics and Space Administration (NASA), Marshall Space Flight Center, Huntsville, AL, United States

IAC-24.B4.7.3

MISSION DESIGN AND ANALYSIS OF A POCKETQUBE SWARM MISSION FOR DISTRIBUTED BEAMFORMING
Citlali Bruce Rosete, University of Luxembourg, Luxembourg, Luxembourg

IAC-24.B4.7.4

IMPLEMENTATION OF A FEDERATED LABORATORIES NETWORK FOR TESTING FORMATION FLYING TECHNOLOGIES
Marco Sabatini, Sapienza University of Rome, Rome, Italy

IAC-24.B4.7.6

ARARA CONSTELLATION: A CUBESAT CONSTELLATION FOR MONITORING THE BLUE AMAZON
Prof. William Silva, University of Brasilia, Brasilia, DF, Brazil

IAC-24.B4.7.7

PHASE-0 DESIGN OF THE 16U4SBSP SPACECRAFT: A SCALED DEMONSTRATION OF SPACE-BASED SOLAR POWER IN EARTH ORBIT USING A SWARM OF CUBESATS
Angelo Cervone, Delft University of Technology (TU Delft), Delft, The Netherlands

IAC-24.B4.7.8

SMALL X/L BAND SAR SATELLITES FOR MEGA CONSTELLATION AT VLEO/LEO
Hirobumi Saito, Nihon University, Tokyo, Japan

IAC-24.B4.7.9

RECONFIGURABLE DISCONTINUOUS COVERAGE SATELLITE CONSTELLATIONS ON REPEAT GROUND TRACK ORBITS
Fatima Alnaqbi, Technology Innovation Institute (TII), Abu Dhabi, United Arab Emirates

IAC-24.B4.7.10

MULTI-SATELLITE SPATIAL OPTIMIZATION IN GEOLOCATION ALGORITHM VIA PASSIVE SENSORS ONBOARD SATELLITES
Marcello Asciolla, Politecnico di Bari, Bari, Italy

IAC-24.B4.7.11

LATENCY OPTIMIZATION IN CENTRALIZED AND DECENTRALIZED COORDINATION OF TIME-VARYING SCALED SATELLITE NETWORKS: THE IMPACT OF DATA SIZE
Vincenzo Messina, Technische Universität München, Ottobrunn, Germany

IAC-24.B4.7.12

ADVANCING SATELLITE-TO-CELL CONNECTIVITY: A NOVEL APPROACH USING FRACTIONATED CUBESAT SYSTEMS
Andreas Makoto Hein, University of Luxembourg, Luxembourg, Luxembourg

IAC-24.B4.7.13

DESIGNING NEWSPACE VERY-HIGH RESOLUTION (VHR) CONSTELLATIONS: OPTICAL HIGH PERFORMANCE EARTH OBSERVATION (EO) SMALL SATELLITES OPPORTUNITIES
Henrique Candeias, N3O – NEWSPACE EARTH OBSERVATION ORBITAL OBJECTS, LDA, Matosinhos, Portugal

IAC-24.B4.7.14

TOM - ADVANCES IN FORMATION FLIGHT AND DATA PROCESSING
Lisa Elsner, Zentrum für Telematik, Würzburg, Germany

IAC-24.B4.7.15

SPEYE: A CUBESAT TECHNOLOGY DEMONSTRATION MISSION FOR ON-ORBIT INSPECTION AND FORMATION-FLYING USING NANOSATELLITES
Vincenzo Capuano, Techno System Developments S.R.L., Pozzuoli, Italy

IAC-24.B4.7.17

RODIO MISSION STATUS AND FUTURE DEVELOPMENTS
Alfredo Renga, University of Naples "Federico II", Napoli, Italy

IAC-24.B4.7.18

HYDROSWARM – USING A COOPERATIVE SWARM OF CUBESATS TO ENHANCE GNSS-R CAPABILITIES FOR SURFACE SOIL MOISTURE AND INUNDATION MEASUREMENTS.
William Hill, Surrey Satellite Technology Ltd (SSTL), Guildford, United Kingdom

B4.8. Small Spacecraft for Deep-Space Exploration

October 18 2024, 10:15 — Space Hall 2

Co-Chair(s): Leon Alkalai, Mandala Space Ventures, United States; Rene Laufer, Luleå University of Technology, Sweden

Rapporteur(s): Lihua Zhang, DFH Satellite Co. Ltd., China; Jaime Esper, National Aeronautics and Space Administration (NASA), United States

IAC-24.B4.8.1

NASA'S BIOSENTINEL DEEP SPACE CUBESAT MISSION: SUCCESSES AND LESSONS LEARNED
Sergio Santa Maria, NASA Ames Research Center, Pittsburg, United States

IAC-24.B4.8.3

A SMALL LOW-COST NANO SATELLITE SWARM FOR A FLY-BY MISSION OF APOPHIS IN 2029
Pavlos Vlazakis, Luleå University of Technology, Kiruna, Sweden

IAC-24.B4.8.4

LUNAR COMMUNICATIONS SERVICES – ON THE VERGE OF A COMMERCIAL REVOLUTION!
Philip Davies, Surrey Satellite Technology Ltd (SSTL), West Byfleet, Surrey, United Kingdom

IAC-24.B4.8.5

LUMIO - PAYLOAD DESIGN FOR LUNAR METEORIDS IMPACT DETECTION
Maria Giulia Pancalli, Leonardo S.p.A., RM, Italy

IAC-24.B4.8.6

MODULAR INTEGRATED ELECTRONIC SYSTEM DESIGN FOR LUNAR EXPLORATION CUBESAT

Hang Zhou, Shanghai Jiao Tong University, Shanghai, China

IAC-24.B4.8.7

THE FLL BASED BIT SYNCHRONIZATION AND FREQUENCY REFINEMENT METHOD FOR SMALL LUNAR MISSION

Jia Tian, China Academy of Space Technology (Xi'an), Xi'an, China

IAC-24.B4.8.8

TIME-OF-FLIGHT-BASED RELATIVE DISPLACEMENT MEASUREMENT ON ULTRA-SMALL SPACE STRUCTURES FOR DEEP SPACE EXPLORATION

Tomoyo Shibata, Tokyo Metropolitan University, Tokyo, Japan

IAC-24.B4.8.9

ADVANCING SMALL SPACECRAFT CAPABILITIES FOR DEEP-SPACE MISSIONS: A COMPREHENSIVE OVERVIEW OF THE EMIRATES' MISSION TO THE ASTEROID BELT LANDER

Mohammed Ibrahim, Dubai, United Arab Emirates

IAC-24.B4.8.10

MISSION AND SYSTEM DESIGN OF OPENS-0 MISSION: OUTER PLANET EXPLORATION BY MICRO-SPACECRAFT

Naoya Ozaki, Japan Aerospace Exploration Agency (JAXA), ISAS, Sagami-hara, Japan

IAC-24.B4.8.11

APOPHIS CRATERING EXPERIMENT

Viliam Klein, Southwest Research Institute, Boulder, United States; Ethan Kayser, Advanced Space, Westminster, United States

IAC-24.B4.8.12

ICUBE-Q: PAKISTAN'S LUNAR CUBESAT ONBOARD CHANG'E 6 LUNAR MISSION

Prof. Qamarul Islam, Islamabad, Pakistan; Muhammad Rizwan Mughal, Sultan Qaboos University (SQU), Muscat, Oman

B4.9-GTS.5. Small Satellite Missions Global Technical Session

October 17 2024, 15:00 — Yellow Hall 1

Co-Chair(s): Matthias Hetscher, DLR (German Aerospace Center), Germany; Norbert M.K. Lemke, OHB System AG - Oberpfaffenhofen, Germany; LIKHIT WARANON, Geo-Informatics and Space Technology Development Agency (Public Organization), Thailand

Rapporteur(s): Alex da Silva Curiel, Surrey Satellite Technology Ltd (SSTL), United Kingdom; Victoria Barabash, Luleå University of Technology, Sweden

IAC-24.B4.9-GTS.5.1

TESTING STRATEGY FOR LEAN SATELLITE CONSTELLATIONS

MENGU CHO, Kyushu Institute of Technology, Kitakyushu-shi, Japan

IAC-24.B4.9-GTS.5.2

OPTIMIZATION STRATEGIES FOR BEYOND-LEO CUBESAT NAVIGATION

Rene Laufer, Luleå University of Technology, Kiruna, Sweden

IAC-24.B4.9-GTS.5.4

NEW THREE DIMENSIONAL PHASED ARRAY ANTENNA FOR THE SIMULTANEOUS COMMUNICATIONS WITH SMALL SATELLITES

Nobuyuki Kaya, Kobe University, Kobe, Japan

IAC-24.B4.9-GTS.5.5

ORBITAL HPC EXPERIMENT ONBOARD YARILO-3 CUBESAT

Kristina Zhdanova, Bauman Moscow State Technical University, Moscow, Russian Federation

IAC-24.B4.9-GTS.5.6

ENVOY: A VERSATILE STANDARD PLATFORM FOR SMALL SATELLITE MISSIONS IN THE EVOLVING SATELLITE INDUSTRY LANDSCAPE

Emile Jäger, OHB System AG, Bremen, Germany

IAC-24.B4.9-GTS.5.7

CUBESAT TECHNOLOGY DEMONSTRATORS AT SSLAB: FROM SPACE TRAFFIC MANAGEMENT IDENTIFICATION PAYLOADS TO INTERNET-OF-THINGS DISTRIBUTED TELEMETRY

Paolo Marzioli, Sapienza University of Rome, Rome, Italy

IAC-24.B4.9-GTS.5.8

ADVANCING SMALL SATELLITE CAPABILITIES IN THE ASIA PACIFIC: INTEGRATED APPROACHES IN PROPULSION, POWER, THERMAL MANAGEMENT, REGULATORY FRAMEWORKS, AND END-OF-LIFE STRATEGIES

KangSan Kim, Space Generation Advisory Council (SGAC), Incheon, Korea, Republic of

IAC-24.B4.9-GTS.5.9

DRAGONFLY: UNVEILING THE BIRDS-X 2U CUBESAT, ITS ADVANCEMENTS, FLIGHT READINESS, AND LESSONS LEARNT.

Jorge Rubén Casir Ricaño, Kyushu Institute of Technology, Kitakyushu, Japan

IAC-24.B4.9-GTS.5.10

BELIEFSAT-0: CONCEPTION, DESIGN, DEVELOPMENT, TESTING AND LEARNINGS

Rohit Bokade, Nagpur, India

B5. IAF SYMPOSIUM ON INTEGRATED APPLICATIONS

Coordinator(s): Jeanne Holm, City of Los Angeles, United States; Roberta Mugellesi-Dow, European Space Agency (ESA), United Kingdom

B5.1. Tools and Technology in Support of Integrated Applications

October 16 2024, 10:15 — Yellow Hall 1

Co-Chair(s): Jeanne Holm, City of Los Angeles, United States; Roberta Mugellesi-Dow, European Space Agency (ESA), United Kingdom

Rapporteur(s): Marion Allayioti, European Space Agency (ESA), United Kingdom

IAC-24.B5.1.1

A COORDINATED APPROACH USING HYPERSPECTRAL SATELLITE, USV, AND VTOL DRONE SYSTEMS FOR ALGAE BLOOM MONITORING IN NORWEGIAN COASTAL WATERS

Corrado Chiatante, Norwegian University of Science and Technology, Trondheim, Norway

IAC-24.B5.1.2

A DEEP LEARNING FRAMEWORK WITH GEOGRAPHIC INFORMATION ADAPTIVE LOSS FOR REMOTE SENSING IMAGES BASED UAV SELF-POSITIONING

Mingkun Li, China Academy of Aerospace Science and Innovation, Beijing, China

IAC-24.B5.1.3

AIOPEN – AN EO PLATFORM THAT INTEGRATES AND COMBINES AI/ML METHODS TO SUPPORT MODEL DEVELOPMENT AND EXPLOITATION OF APPLICATIONS

Leslie Gale, Space Applications Services, Sint-Stevens-Woluwe, Belgium

IAC-24.B5.1.4

THE UNIVERSE OF TREES: A JOURNEY FROM SPACE TO EARTH. SUSTAINABILITY AND DIGITAL TREES: THE ROLE OF SATELLITES, IN-SITU SENSORS AND CITIZEN SCIENCE.

Matilda Van den Bosch, Rome, Italy

IAC-24.B5.1.5

SATELLITE-BASED DATA LAKES: A TECHNICAL CASE STUDY BASED ON EXISTING CLOUD TECHNOLOGIES

Markus Sauer, Siemens AG, Munich, Germany

IAC-24.B5.1.6

LUCIOLES: A MOBILE APPLICATION TO EMPOWER CITIZENS FOR A SUSTAINABLE PLANET, AN INITIATIVE OF FRENCH INSTITUTIONS (CNES, ADEME AND OFB) WITHIN THE OPEN PLANET FACTS PROJECT

Francois Jacteur Monrozier, Centre National d'Etudes Spatiales (CNES), TOULOUSE, France

IAC-24.B5.1.8

TOOLS AND TECHNOLOGY IN SUPPORT OF INTEGRATED APPLICATIONS ARTIFICIAL INTELLIGENCE-DRIVEN NAVIGATION AND OBSERVATION SYSTEM(A.I.N.O.S)

Safarali Safarli, Azerbaijan Technical University, Xirdalan, Azerbaijan

IAC-24.B5.1.9

ARTIFICIAL INTELLIGENCE-POWERED SYSTEM SYSTEMS INCLUDING LAUNCH, SPACE, GROUND, AND USER SEGMENTS: CURRENT STATUS AND FUTURE CHALLENGES

Krishna Kumar, Ryerson University, Toronto, Canada

IAC-24.B5.1.10

EXPLAINABLE AI FOR ENHANCED METEORITE CLASSIFICATION: A COMPARATIVE STUDY OF LIME AND SHAP

Aisha Alowais, Sharjah Academy for Astronomy, Space Sciences and Technology (SAASST), Sharjah, United Arab Emirates

IAC-24.B5.1.11

BRIDGING THE DIGITAL DIVIDE: SPACE IN SUPPORT OF TERRESTRIAL NETWORKS FOR GLOBAL CONNECTIVITY

Giorgia D'Agostinis, Fondazione E. Amaldi, Roma, Italy

IAC-24.B5.1.12

A CYBER-PHYSICAL SYSTEM (CPS) SUPPORTING LARGE-SCALE SATELLITE-DRONE HYBRID APPLICATION DEVELOPMENT

Soojeon Lee, ETRI, Daejeon, Korea, Republic of

IAC-24.B5.1.13

INTEGRATING GEOGRAPHICAL INFORMATION SYSTEMS IN MANAGEMENT AND ORCHESTRATION OF SATELLITES CONSTELLATION TO ACHIEVE A SPATIAL-AWARE 6G NON-TERRESTRIAL NETWORKS ARCHITECTURE

Jose Avila, i2CAT, Barcelona, Spain

IAC-24.B5.1.14

ENERGY COMPANIES SECTOR AMBITIONS TO CREATE SUSTAINABILITY THROUGH SPACE TECHNOLOGIES ECOSYSTEM

Abdullah Shaikh, Aramco, DHAHRAN, Saudi Arabia; Abdulaziz Bahri, Aramco, DHAHRAN, Saudi Arabia

B5.2. Integrated Applications End-to-End Solutions

October 16 2024, 15:00 — Green Hall 2

Co-Chair(s): Boris Penne, OHB System AG, Germany; Roberta Mugellesi-Dow, European Space Agency (ESA), United Kingdom
Rapporteur(s): Marion Allayioti, European Space Agency (ESA), United Kingdom

IAC-24.B5.2.1

SPACE-BASED TOOLS FOR SUSTAINABLE SOLUTIONS: THE ROLE OF THE EUROPEAN UNION SPACE PROGRAMME

Christina Giannopapa, European Union Agency for the Space Programme (EUSPA), Prague, Czech Republic

IAC-24.B5.2.2

EXPLORING SPACE BOUNDARIES: ITALY'S LEADERSHIP IN SPACE INNOVATION AND DOWNSTREAM APPLICATIONS

Francesco Longo, ASI - Italian Space Agency, Rome, Italy

IAC-24.B5.2.3

INTEGRATION OF HIGH ALTITUDE PSEUDO-SATELLITES (HAPS) IN THE SPACE ECOSYSTEM

Jesús Gonzalo, University of León, León, Spain

IAC-24.B5.2.4

IT TAKES TWO TO TANGO: IDENTIFYING AND MITIGATING REGULATORY CHALLENGES OF UAV TO PROVIDE INTEGRATED EO-UAV END-TO-END SOLUTIONS

Sara Venditti, Axient Systems, Amsterdam, The Netherlands

IAC-24.B5.2.5

HAPS IN MULTILAYERED CONSTELLATIONS

Jiri Pavlik, Praha 6, Czech Republic

IAC-24.B5.2.6

SPACE TECHNOLOGY FOR SMART TRANSPORTATION AND MOBILITY

Francois Spiero, Centre National d'Etudes Spatiales (CNES), Paris, France

IAC-24.B5.2.7

SPACE FOR MARITIME APPLICATIONS: ITALIAN SPACE AGENCY ACTIVITIES

Giancarlo Natale Varacalli, ASI - Italian Space Agency, Roma, Italy

IAC-24.B5.2.8

SATELLITE IMAGE APPLICATION SYSTEM DEVELOPMENT FOR KOREAN MARITIME DOMAIN AWARENESS

Noh-hun Seong, Korea Aerospace Research Institute (KARI), Daejeon, Korea, Republic of

IAC-24.B5.2.9

OSCAR: AN INTEGRATED SERVICE FOR ENHANCED VESSEL MANAGEMENT IN OFFSHORE WIND FARMS

Omasan Akporiaye, Clyde Space Ltd, Glasgow, United Kingdom

IAC-24.B5.2.10

MONITORING THE STATE OF RAILWAY INFRASTRUCTURE FROM SATELLITE USING IMAGE ANALYSIS TECHNIQUES AND ARTIFICIAL INTELLIGENCE FOR ANOMALY DETECTION

Valerio Roscani, Fondazione E. Amaldi, Roma, Italy

IAC-24.B5.2.11

SEAMLESS AND RELIABLE RAILWAY SYSTEMS: A CASE STUDY ON INTEGRATING SATELLITE COMMUNICATION AND COMPUTING FOR CONTINUOUS OPERATIONS

Florian Zeiger, Siemens AG, Munich, Germany

IAC-24.B5.2.12

INTEGRATED APPLICATIONS FOR FOOD SECURITY IN THE FRAMEWORK OF ASI INTERNATIONAL COOPERATION

Fabrizio Lenti, Agenzia Spaziale Italiana (ASI), Roma, Italy

IAC-24.B5.2.13

AN INTEGRATED EU SPACE FOR CLIMATE ACTION: SUCCESS STORIES OF EUROPEAN SATELLITE APPLICATIONS IN SUPPORTING THE EU GREEN DEAL

Gabriella Quattropanetti, EURISY, Paris, France

B5.3. Satellite Applications for Sustainability and Climate

October 17 2024, 10:15 — Green Hall 2

Co-Chair(s): John M. Horack, The Ohio State University College of Engineering, United States; Bruce Chesley, Teaching Science and Technology, Inc (TSTI), United States

Rapporteur(s): Marcello Romano, Politecnico di Torino, Italy

IAC-24.B5.3.2

MESSA: A METHODOLOGY FOR EVALUATING THE SUSTAINABILITY OF SPACE APPLICATIONS

Oliver Swainston, International Space University (ISU), Strasbourg, France; Alvin Michael Mulumba, International Space University (ISU), Illkirch Graffenstaden, France

IAC-24.B5.3.4

ENABLING CARBON CREDITS INITIATIVES WHILE PRESERVING BIODIVERSITY, WATER SECURITY, AND SOIL HEALTH THROUGH EARTH OBSERVATION AND OTHER INNOVATIVE TECHNOLOGIES: THE INNO4CFIS PROJECT

Valerio Roscani, Fondazione E. Amaldi, Roma, Italy

IAC-24.B5.3.5

DEVELOPMENT OF A NEURAL NETWORK FOR THE RECONSTRUCTION OF VIS-NIR SPECTRA FROM SENTINEL-2 SATELLITE IMAGES.

Laura Margarita Rodríguez-Ortiz, University of America, Bogotá, Colombia

IAC-24.B5.3.6

PLANETARY SUNSHADE FOR SOLAR GEOENGINEERING: PRELIMINARY DESIGN OF A PRECURSOR SYSTEM AND MISSION

Marina Coco, Politecnico di Torino, cefalù, Italy

IAC-24.B5.3.7

SHAPING SATELLITE APPLICATIONS AND SUSTAINABILITY AND CLIMATE THROUGH WORLD RADIOCOMMUNICATION CONFERENCE 2023 (WRC-23)

Mehtap Dufour, ITU, Geneva, Switzerland

IAC-24.B5.3.8

SATELLITE NAVIGATION IN DISASTER MANAGEMENT HIGHLIGHTING THE USE OF GPS AND OTHER SATELLITE NAVIGATION SYSTEMS IN DISASTER RESPONSE AND MANAGEMENT, INCLUDING RESCUE OPERATIONS AND LOGISTICS PLANNING

Nurlan Abdullayev, Azerbaijan State Oil and Industry University (ASOIU), Baku, Azerbaijan

IAC-24.B5.3.9

CHINESE HIGH-RESOLUTION COMMERCIAL INTERFEROMETRIC SAR FUCHENG-1: DINSAR RESULT FOR LANDSLIDES MONITORING

Yakun Han, Chengdu University of Technology, Chengdu, China

IAC-24.B5.3.10

EARLY WARNING SYSTEM FOR FLOODS (EWSF) : BUILDING A PROCESS REPOSITORY TO LEVERAGE OPEN-SOURCE EARTH OBSERVATION DATA FOR FLOOD WARNING ACROSS DIFFERENT STAKEHOLDERS IN PAKISTAN

Mahhad Nayyer, Space Generation Advisory Council (SGAC), Lahore, Pakistan; Abdullah Algharrash, Space Generation Advisory Council (SGAC), Riyadh, Saudi Arabia; KangSan Kim, Space Generation Advisory Council (SGAC), Incheon, Korea, Republic of; Martina Dimoska, International Space University (ISU), Illkirch - Graffenstaden, France; Vastata Koul, Space Generation Advisory Council (SGAC), New Delhi, India; Nhat Nguyen, Space Generation Advisory Council (SGAC), Sydney, Australia

IAC-24.B5.3.11

LIFTING EXTREME MASSES TO SUPPORT SOLAR POWER SATELLITE ASSEMBLY AT GEO WITH SPACE ELEVATORS

Peter Swan, Space Elevator Development Corporation, Paradise Valley, United States

B6. IAF SPACE OPERATIONS SYMPOSIUM

Coordinator(s): Andreas Rudolph, European Space Agency (ESA), Germany; Otfried G. Liepack, National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, United States; Zeina Mounzer, Telespazio VEGA Deutschland GmbH, Germany

B6.1. Ground Operations - Systems and Solutions

October 18 2024, 10:15 — Green Hall 2

Co-Chair(s): Sean Burns, EUMETSAT, Germany; Claude AUDOUY, Centre National d'Etudes Spatiales (CNES), France

Rapporteur(s): Regina Mosenkis, Airbus Defence & Space, Germany; Keyur Patel, National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, United States

IAC-24.B6.1.1

ARTIFICIAL INTELLIGENCE-BASED AUTOMATION OF MISSION POST-LAUNCH OPERATIONS PROCESSES

Gabriele De Canio, European Space Agency (ESA-ESOC), Darmstadt, Germany

IAC-24.B6.1.2

AUTOMATIC SCHEDULING SYSTEM FOR SAR SATELLITE CONSTELLATION

Shadman Sakib, Institute for Q-shu Pioneer of Space, Inc. (iQPS), Fukuoka, Japan

IAC-24.B6.1.3

CNES 'AUTOMATION', A GENERIC SOLUTION TO FACE TODAY'S NECESSITIES

Clément HUBIN--ANDRIEU, Centre National d'Etudes Spatiales (CNES), Toulouse, France

IAC-24.B6.1.4

CUBENAV: AN OPERATIONAL FLIGHT DYNAMICS TOOL TO SUPPORT GUIDANCE AND NAVIGATION OF DEEP-SPACE CUBESATS

Alessandro Morselli, Politecnico di Milano, Milano, Italy

IAC-24.B6.1.5

INFORMATION VISUALIZATION FOR SUPPORTING SHORT-TERM AND LONG-TERM SITUATION AWARENESS IN GROUND SEGMENTS MONITORING: APPLICATION TO SWOT COMMAND AND CONTROL OPERATIONS

Célia Martinie, University of Toulouse III, Toulouse, France

IAC-24.B6.1.6

MULTI-MISSION MSC & SDC: SHARED INFRASTRUCTURES, FRAMEWORKS AND FACILITIES FOR GROUND SEGMENT

Rosario Messineo, Altec S.p.A., Turin, Italy

IAC-24.B6.1.7

OPSCONF - CONFIGURATION MANAGEMENT FOR NON-DEVELOPERS

Olivier Churlaud, Centre National d'Etudes Spatiales (CNES), TOULOUSE, France

IAC-24.B6.1.8

DEVELOPMENT OF ASTRAX COMMERCIAL SPACECRAFT MISSION SUPPORT CONTROL CENTER IN JAPAN 2024

Taichi Yamazaki, ASTRAX, Inc., Kamakura, Japan

IAC-24.B6.1.9

THE ASI-NASA COSI MISSION AND ITS SCIENTIFIC AND OPERATIONAL GROUND SEGMENT ARCHITECTURE

Giancarlo Santilli, Italian Space Agency (ASI), Rome, Italy

IAC-24.B6.1.10

EMPOWERING STUDENT-LED SPACE EXPLORATION: DEPLOYMENT OF AN INNOVATIVE MULTI-BAND GROUND STATION FOR AMATEUR SATELLITE COMMUNICATIONS AND OPERATIONS

Léonard Lebrun, Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland

IAC-24.B6.1.11

SUSTAINABLE PROCESS SOLUTION FOR MANAGEMENT OF SPACECRAFT HEALTH OPERATION DATABASE SYSTEM

Nitin Bhardwaj, U R RAO SATELLITE CENTRE (URSC), Bangalore, India

IAC-24.B6.1.12

ADDRESSING COMPLEXITY IN ENVIRONMENTAL IMPACT ASSESSMENTS OF MULTI-PARTY CONSTELLATION GROUND SEGMENTS

Matteo Manieri, Telespazio, Noordwijk, The Netherlands

B6.2. Innovative Space Operations Concepts and Advanced Systems

October 15 2024, 15:00 — Green Hall 2

Co-Chair(s): Mario Cardano, Thales Alenia Space France, Italy; Andreas Ohndorf, DLR (German Aerospace Center), Germany

Rapporteur(s): Jackelynne Silva-Martinez, NASA, United States; Yuichiro Nogawa, Japan Manned Space Systems Corporation

(JAMSS), Japan

IAC-24.B6.2.1

DEVELOPING THE ITALIAN IN-ORBIT SERVICING DEMO MISSION

Maria Antonietta Perino, Thales Alenia Space Italia, Turin, Italy

IAC-24.B6.2.2

SMART SPACE OPERATIONS: OCAI'S CONTRIBUTION TO OPERATIONAL EXCELLENCE

Evriddiki Ntagiou, European Space Agency (ESA-ESOC), Darmstadt, Germany

IAC-24.B6.2.3

COLLISION AVOIDANCE MANOEUVRE AUTOMATION WITH DEEP REINFORCEMENT LEARNING

Massimiliano Vasile, University of Strathclyde, Glasgow, United Kingdom

IAC-24.B6.2.4

SURFACE WATER OCEAN TOPOGRAPHY LEOP : A VERY EXCITING CNES/NASA EXPERIENCE OF OPERATIONS

Said Haouchine, Centre National d'Etudes Spatiales (CNES), Toulouse, France

IAC-24.B6.2.5

CLIMB'S INNOVATIVE GROUND SEGMENT: AN OPERATIONS PERSPECTIVE EMPLOYING MISSION PLANNING BASED ON A FLEXIBLE SDR GROUND STATION PLATFORM OF AN ORBIT RAISING CUBESAT

Fabian Hauser, Fachhochschule Wiener Neustadt GmbH, Wiener Neustadt, Austria; Alexander Spaniol, Fachhochschule Wiener Neustadt GmbH, Wiener Neustadt, Austria

IAC-24.B6.2.6

AUTOMATION OF FLIGHT DYNAMICS PLANNING FOR ESA'S XMM-NEWTON

Nieves Salor moral, Rhea Group, Madrid, Spain

IAC-24.B6.2.7

A STUDY ON AI-BASED SYSTEM ANOMALY DETECTION AND MONITORING METHOD USING KOREA PATHFINDER LUNAR ORBITER (KPLO) OPERATION DATA

Hyojung Ahn, Korea Aerospace Research Institute (KARI), Daejeon, Korea, Republic of

IAC-24.B6.2.8

DATAX: A STATE OF THE ART DATA STRATEGY FOR MISSION OPERATIONS

Evriddiki Ntagiou, European Space Agency (ESA-ESOC), Darmstadt, Germany

IAC-24.B6.2.9

ADVANCING SATELLITE OPERATIONS WITH THE V3C SYSTEM: TOWARDS SELF-RELIANT, ROBUST, AND CLOUD-ENABLED MISSION CONTROL

Sacha Tholl, German Aerospace Center (DLR), Trauen, Germany

IAC-24.B6.2.10

COMET OPS: AN EFFICIENT WAY TO FOSTER COLLABORATION AND INNOVATION BETWEEN OPERATORS OF DIFFERENT AREAS

Arthur Fostier, Centre National d'Etudes Spatiales (CNES), Toulouse, France

B6.3. Mission Operations, Validation, Simulation and Training

October 18 2024, 13:45 — Green Hall 2

Co-Chair(s): Andreas Rudolph, European Space Agency (ESA), Germany; Zeina Mounzer, Telespazio VEGA Deutschland GmbH, Germany

Rapporteur(s): Borre Pedersen, Kongsberg Satellite Services AS, Norway; Matthew Duggan, The Boeing Company, United States

IAC-24.B6.3.1

KEYNOTE: EUCLID SATELLITE ON ORBIT COMMISSIONING

Massimiliano Saponara, Thales Alenia Space Italia (TAS-I), Turin, Italy

IAC-24.B6.3.2

LESSONS LEARNED DURING PREPARATION AND EXECUTION OF THE SATELLITE OPERATIONS OF THE E-BAND TECHNOLOGY DEMONSTRATION CUBESAT EIVE

Markus Kranz, IRS, University of Stuttgart, Stuttgart, Germany

IAC-24.B6.3.4

ANALYSIS OF QUASI-COLD GAS 'TRIM' DISPOSAL MANOEUVRE FOR THE ESA'S INTEGRAL MISSION

Greta De Marco, European Space Agency (ESA-ESOC), Darmstadt, Germany

IAC-24.B6.3.5

TRAINING A STUDENT TEAM: NAVIGATING CHALLENGES TOWARD MISSION READINESS

Divya Rao, Carnegie Mellon University, Pittsburgh, United States

IAC-24.B6.3.6

RAPID REPAIR METHOD FOR SPACECRAFT PLAN FAILURES USING TEMPORAL DECOUPLING STRATEGY

Shizhen Li, Beijing Institute of Technology, Beijing, China

IAC-24.B6.3.7

SPHERICAL ROVER CONTROLLED THROUGH INTERNAL PENDULUM: INNOVATIVE APPROACH IN ROBOTIC NAVIGATION

Gabriele Pancia, Turin Polytechnical University, Torino, Italy

IAC-24.B6.3.8

PROX-SIMA: A MODULAR SIMULATOR FOR THE VALIDATION OF IN-ORBIT SERVICING AND CLOSE PROXIMITY MISSIONS GNC TECHNIQUES

Niccolò Faraco, Politecnico di Milano, Milan, Italy

IAC-24.B6.3.9

DESIGNING FUTURE IN-ORBIT MISSIONS : A SIMULATION AND MONITORING FRAMEWORK FOR ROBOTIC OPERATIONS

Thierry GERMA, Magellium, Ramonville St Agne, France

B6.5. Large Constellations & Fleet Operations

October 17 2024, 15:00 — Green Hall 2

Co-Chair(s): Simon Plum, European Space Agency (ESA-ESOC), Germany; Thomas Uhlig, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

Rapporteur(s): Shawn Linam, Qwaltec, Inc., United States; Mario Cardano, Thales Alenia Space Italia, Italy

IAC-24.B6.5.1

ADAPTIVE RECONFIGURATION IN DISTRIBUTED SATELLITE SYSTEMS: A FRAMEWORK FOR ENHANCED SPACECRAFT OPERATIONS WITH COLLISION AVOIDANCE APPLICATIONS

Sidhant Patra, Technische Universität München, Munich, Germany

IAC-24.B6.5.2

AN AGNOSTIC APPROACH TO REVOLUTIONIZE SATELLITE MISSION CONTROL WORKFLOWS WITH OPENAPI-POWERED AUTOMATION

Edoardo Cocci, Telespazio Germany GmbH, Darmstadt, Germany

IAC-24.B6.5.3

ARCHITECTURE OF A SIMULATION TEST BENCH FOR OPERATING LARGE SATELLITE CONSTELLATIONS

Michele Campanelli, DLR (German Aerospace Center), Weßling, Germany

IAC-24.B6.5.4

AUTOMATED SPACE TRAFFIC MANAGEMENT PLATFORM WITH PROTOCOL-BASED COORDINATION

Esfandiar Farahvashi, OKAPI:Orbits GmbH, Braunschweig, Germany

IAC-24.B6.5.5

CONSTELLATION AUTONOMY: AI SOLUTIONS FOR ADAPTABLE AND EFFICIENT OPERATIONS

Evriddiki Ntagiou, European Space Agency (ESA-ESOC), Darmstadt, Germany

IAC-24.B6.5.6

COOPERATIVE TRACKING STRATEGIES FOR OPTICAL SPACE-TO-SPACE SURVEILLANCE CONSTELLATIONS

Antonio D'Anniballe, Cranfield University, Cranfield, United Kingdom

IAC-24.B6.5.7

IMPACT OF LAUNCH CADENCE ON THE AUTOMATION & ECONOMICS OF CONSTELLATION OPERATIONS
Luca Pizzuto, DLR (German Aerospace Center), München, Germany

IAC-24.B6.5.8

LARGE HETEROGENEOUS EARTH OBSERVATION CONSTELLATIONS EXPLOITATION: ARCHITECTURE OF A PIPELINE FOR AUTOMATED OPERATIONS, FROM USER NEEDS TO ACQUISITIONS DOWNLINK
Fabrizio Maccari, Politecnico di Milano, Viterbo, Italy

IAC-24.B6.5.9

METHODS FOR GENERATING PUBLICLY RELEASABLE MODELING INPUTS TO SUPPORT DEVELOPMENT OF REFERENCE SPACE ENVIRONMENT SCENARIOS
Miles Lifson, The Aerospace Corporation, Hull, MA, United States

IAC-24.B6.5.10

THE AUTONOMOUS SCHEDULING PROBLEM IN SATELLITE CONSTELLATIONS FOR EO MISSIONS. A ROBUST DISTRIBUTED OPTIMIZATION APPROACH
Giulio De Angelis, Sapienza University of Rome, Italy

IAC-24.B6.5.11

TRANSIT OF THE LEO COMMUNICATIONS SATELLITE CONSTELLATION ACROSS THE COMMUNICATION RANGE OF A GEOSTATIONARY ORBIT SATELLITE
Byoung-Sun LEE, Electronics and Telecommunications Research Institute (ETRI), Daejeon, Korea, Republic of

IAC-24.B6.5.12

UPDATE ON ESTABLISHING "RULES OF THE ROAD" FOR SATELLITE COLLISION AVOIDANCE MANEUVER PLANNING - IAA STUDY GROUP 5.20
David Spencer, The Aerospace Corporation, Aldie, United States

IAC-24.B6.5.14

COLLISION AVOIDANCE OF MEGA-CONSTELLATION BASED ON GRAPH ATTENTION CONVOLUTION AND MULTI-AGENT REINFORCEMENT LEARNING
Wenxiu Zhang, Innovation Academy for Microsatellites, Chinese Academy of Sciences, Shanghai, China

C1. IAF ASTRODYNAMICS SYMPOSIUM

Coordinator(s): Daniel Scheeres, Colorado Center for Astrodynamics Research, University of Colorado, United States; Vincent Martinot, Thales Alenia Space France, France

C1.1. Attitude Dynamics (1)

October 16 2024, 15:00 — Blue Hall 2

Co-Chair(s): Giovanni B. Palmerini, Sapienza University of Rome, Italy; Zhanfeng Meng, China Academy of Space Technology (CAST), China

Rapporteur(s): Robert G. Melton, Pennsylvania State University, United States

IAC-24.C1.1.1

ATTITUDE CONTROL IN WHEEL REDUCTION OPERATION OF HAYABUSA2 EXTENDED MISSION
Takefumi Kosaka, NEC Corporation, Tokyo, Japan

IAC-24.C1.1.2

MODEL PREDICTIVE CONTROL FOR UNDERACTUATED SPACECRAFT EQUIPPED WITH TWO REACTION WHEELS IN THE PRESENCE OF A RESIDUAL ANGULAR MOMENTUM
Giulio Avanzini, Università del Salento, Lecce, Italy

IAC-24.C1.1.3

GRAVITY GRADIENT EFFECTS ON THE ATTITUDE DYNAMICS ON SATELLITES IN NEAR-RECTILINEAR HALO ORBITS
Erica Scantamburlo, Politecnico di Torino, Torino, Italy

IAC-24.C1.1.4

REAL-TIME ATTITUDE CONTROL FOR OPTIMAL LOW-THRUST MULTI-REVOLUTION COPLANAR TRANSFERS
Stefano Carletta, Sapienza University of Rome, Rome, Italy

IAC-24.C1.1.5

AGILE ATTITUDE CONTROL OF VARIABLE-SHAPE SPACECRAFT WITH REDUCED TIME DELAY
Kei Watanabe, Tokyo Institute of Technology, Meguro, Tokyo, Japan

IAC-24.C1.1.6

STUDY OF ATTITUDE DETERMINATION ACCURACY AND EARTH-POINT STABILIZATION PERFORMANCE USING ASYNCHRONOUS STAR TRACKER AND ANGULAR VELOCITY SENSOR MEASUREMENTS
Danil Ivanov, Keldysh Institute of Applied Mathematics, RAS, Moscow, Russian Federation

IAC-24.C1.1.7

ANALYSIS METHOD AND RESEARCH OF CONTACT COLLISION PROCESS BASED ON ATTITUDE EVOLUTION OF FAST TUMBLING TARGET IN SPACE
Jiale Chen, Northwestern Polytechnical University; National Key Laboratory of Aerospace Flight Dynamics, Xi'an, China

IAC-24.C1.1.8

A CAUSAL LEARNING APPROACH TO IN-ORBIT INERTIAL PARAMETER ESTIMATION FOR MULTI-PAYLOAD DEPLOYERS.
Konstantinos Platanitis, Cranfield University, UK, Cranfield, United Kingdom

IAC-24.C1.1.9

GYSELE : AN ATTITUDE ESTIMATION AND NON-STELLAR OBJECT TRACKING SYSTEM
Etienne Perot, Centre National d'Etudes Spatiales (CNES), Toulouse, France

IAC-24.C1.1.10

CONTROL OF EXTERNAL DIRECTIONAL EXPOSURES OF VARIOUS SURFACE LOCATIONS ON THE TUMBLING SPACECRAFT USING "INERTIAL MORPHING"
Pavel M. Trivailo, RMIT University, Australia, Melbourne, VIC, Australia

C1.2. Attitude Dynamics (2)

October 17 2024, 10:15 — Blue Hall 2

Co-Chair(s): Toshio Kamiya, Meisei University, Japan; Mikhail Ovchinnikov, Keldysh Institute of Applied Mathematics, RAS, Russian Federation

Rapporteur(s): Bang Hyochoon, Korea Advanced Institute of Science and Technology (KAIST), Korea, Republic of

IAC-24.C1.2.1

CONSTRAINED RENDEZVOUS AND MATING WITH GATEWAY USING NONLINEAR CONTROL TECHNIQUES
Leonardo Russo, DLR (German Aerospace Center), Weßling, Germany

IAC-24.C1.2.2

ELASTIC OSCILLATIONS OF A DEBRIS REMOVAL TETHER IN AN INCLINED TOWING CONFIGURATION
Arun Misra, Mc Gill Institute for Aerospace Engineering (MIAE), Montreal, Canada

IAC-24.C1.2.3

ON-ORBIT EXPERIMENT RESULTS ON VARIABLE-SHAPE SATELLITE ATTITUDE DYNAMICS USING ATMOSPHERIC DRAG TORQUE AND GRAVITY GRADIENT TORQUE
Kiyona Miyamoto, Tokyo Institute of Technology, Meguro-ku, Japan

IAC-24.C1.2.4

SIMULATION AND EXPERIMENTAL TESTING OF AN ITERATIVE LEARNING CONTROL STRATEGY FOR EARTH OBSERVATION ATTITUDE MANOEUVRES
Federica Angeletti, University of Rome "La Sapienza", Rome, Italy

IAC-24.C1.2.5

POINTING ACCURACY USING MODEL PREDICTIVE CONTROL-BASED GUIDANCE CONTROL FOR DESTINY+ FLYBY MISSION
Yusuke Ozawa, NEC Corporation, Tokyo, Japan

IAC-24.C1.2.6

BORESIGHT STABILIZATION OF AN AXISYMMETRIC EARTH-POINTING SATELLITE USING MAGNETORQUERS
Fabio Celani, Sapienza University of Rome, Rome, Italy

IAC-24.C1.2.7

SATELLITE ATTITUDE ESTIMATION WITH HYPERSPECTRAL IMAGING FOR AUTONOMOUS NAVIGATION
Simão Marto, University of Strathclyde, Glasgow, United Kingdom

IAC-24.C1.2.8

DESIGN OF FLIGHT CONTROL SYSTEMS FOR RLVS WITH STRUCTURAL FLEXIBILITY: APPLICATION TO THE CALLISTO VEHICLE
José Alfredo Macés-Hernández, German Aerospace Center (DLR), Bremen, Bremen, Germany

IAC-24.C1.2.9

SMALL SATELLITE ATTITUDE VERIFICATION USING MULTISPECTRAL IMAGERY OF MOON AND EARTH HORIZON CONSTELLATION
Victoria Kofack, Technische Universität Berlin, Germany, Germany

IAC-24.C1.2.10

ADAPTIVE PRESCRIBED PERFORMANCE ATTITUDE CONTROL FOR FLEXIBLE SPACECRAFT USING OBSERVER
Juhyeong Park, Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea, Republic of

C1.3. Guidance, Navigation and Control (1)

October 17 2024, 15:00 — Blue Hall 2

Co-Chair(s): Guo Linli, Institute of Manned Space System Engineering, China Academy of Space Technology (CAST), China; Krishna Kumar, Ryerson University, Canada
Rapporteur(s): Juan Carlos Bastante, OHB System AG-Bremen, Germany

IAC-24.C1.3.1

RELATIVE ORBIT ESTIMATION COMBINING BEARING AND PHOTOMETRIC MEASUREMENTS
Yasuhiro Yoshimura, Kyushu University, Fukuoka, Japan

IAC-24.C1.3.2

UNCOOPERATIVE SPACECRAFT RELATIVE NAVIGATION VIA VISIBLE AND THERMAL-INFRARED IMAGE FUSION
Gaia Letizia Civardi, Politecnico di Milano, San giuliano milanese, Italy

IAC-24.C1.3.3

APPLICATION OF THE ONBOARD DOPPLER MEASUREMENT FOR DEEP-SPACE RENDEZVOUS AND DOCKING COMPARED WITH MOVING STEREO-BASED OPTICAL NAVIGATION
Yukiho Ohtsuki, The University of TOKYO, Graduate school, Kawasaki-shi, Kanagawa, Japan

IAC-24.C1.3.4

AUTONOMOUS GUIDANCE, NAVIGATION, AND CONTROL FOR CLOSE FORMATIONS THROUGH SEQUENTIAL CONVEX PROGRAMMING AND INTER-SATELLITE RANGING
Enrico Belloni, Politecnico di Milano, Milan, Italy

IAC-24.C1.3.5

CONVEX OPTIMIZATION FOR COVARIANCE CONTROL IN RENDEZVOUS AND DOCKING OPERATIONS
Alessandro Garzelli, University of Seville, Sevilla, Spain

IAC-24.C1.3.6

A SEMI ANALYTICAL APPROACH FOR IMPULSIVE RENDEZVOUS IN ECCENTRIC ORBITS USING OPTIMAL CONTROL THEORY
Davide Costigliola, Politecnico di Torino, Turin, Italy

IAC-24.C1.3.7

FORMATION RECONFIGURATION ON LIBRATION POINT ORBITS BASED ON GEOMETRIC CONFIGURATION INVARIANTS
Xue Bai, Beihang University, Beijing, China

IAC-24.C1.3.8

AUTONOMOUS MISSION PLANNING FOR MULTI-AGENT LUNAR MISSION
Fabrizio Pilone, Università di Pisa (Unipi), Pisa, Italy

IAC-24.C1.3.9

GUIDANCE AND CONTROL FOR AERODYNAMIC BASED NANOSAT MULTI-STATIC SAR FORMATION FLYING MISSION AIMED AT SUB-MILLI-METER SPACE DEBRIS CHARACTERIZATION.
Vishnuvardhan Shakthibala, 'Space Dynamics Control and Systems Engineering' Research Group, Pordenone, Italy

C1.4. Guidance, Navigation and Control (2)

October 18 2024, 10:15 — Blue Hall 2

Co-Chair(s): Mai Bando, Kyushu University, Japan; Eberhard Gill, Delft University of Technology, The Netherlands
Rapporteur(s): Hanspeter Schaub, Colorado Center for Astrodynamics Research, University of Colorado, United States

IAC-24.C1.4.1

OPTIMAL GUIDANCE CONTROL CONSIDERING MULTIPLE CONSTRAINTS FOR ASTEROID SAMPLE RETURN
Toshio Kamiya, Meisei University, Tokyo, Japan

IAC-24.C1.4.2

STUDY ON ONBOARD EXPLICIT CELESTIAL DESCENT GUIDANCE USING RECEDING HORIZON CONTROL ADAPTABLE IN MICROGRAVITY ENVIRONMENTS
Kent Yoshikawa, Japan Aerospace Exploration Agency (JAXA), Sagamihara, Japan

IAC-24.C1.4.3

ON-ORBIT OPERATION RESULTS OF THE POWERED DESCENT GUIDANCE ALGORITHM FOR PINPOINT LUNAR LANDING
Satoshi Ueda, Japan Aerospace Exploration Agency (JAXA), Sagamihara-shi, Kanagawa, Japan

IAC-24.C1.4.4

THE DEVELOPMENT AND VERIFICATION METHOD OF SLIM LUNAR LANDING NAVIGATION ALGORITHMS
Kentaro Watanabe, Mitsubishi Electric Corporation, Kamakura, Kanagawa, Japan

IAC-24.C1.4.5

INTEGRATED OPTICAL TERRAIN RELATIVE NAVIGATION FOR AUTONOMOUS LUNAR LANDING
Giovanni Pio Parracino, Politecnico di Milano, Milan, Italy

IAC-24.C1.4.6

HIGH-FIDELITY OPTIMAL CONTROL LAWS TO CHARACTERIZE THE MANEUVERING CAPABILITIES OF EARTH-BOUND SOLAR SAILS
Livio Carzana, Delft University of Technology (TU Delft), Delft, The Netherlands

IAC-24.C1.4.7

FUEL-OPTIMAL TRAJECTORIES OF THE PERTURBED CIRCULAR RESTRICTED THREE-BODY PROBLEM FOR LUNAR OCCULTATION APPLICATIONS
Nicolo Woodward, Embry-Riddle Aeronautical University, Daytona Beach, FL, United States

IAC-24.C1.4.8

DESIGN OF MINIMUM-TIME LOW-THRUST TRANSFER BETWEEN QUASI-PERIODIC ORBITS
Naoki Hiraiwa, Kyushu University, Fukuoka, Japan

IAC-24.C1.4.9

ANALYSIS OF PERIODIC AND QUASI-PERIODIC ORBITS WITH OPTIMAL FEEDBACK CONTROL
Ayano Tsuruta, Kyushu University, Fukuoka, Japan

IAC-24.C1.4.10

SPACECRAFT TRAJECTORY OPTIMISATION USING DIFFERENTIAL DYNAMIC PROGRAMMING

Pietro Mondino, ISAE - Institut Supérieur de l'Aéronautique et de l'Espace, Toulouse, France; Vincenzo Saladino, ISAE - Institut Supérieur de l'Aéronautique et de l'Espace, Toulouse, France

C1.5. Guidance, Navigation & Control (3)

October 18 2024, 13:45 — Blue Hall 2

Co-Chair(s): Jean de Lafontaine, NGC Aerospace Ltd., Canada; Yung Fu Tsai, National Cheng Kung University, Taiwan, China

Rapporteur(s): Miguel Bello Mora, Deimos Space SLU, Spain

IAC-24.C1.5.1

ROBUSTNESS ANALYSIS OF DATA DRIVEN IMAGE PROCESSING METHODS FOR AUTONOMOUS NAVIGATION WITH APPLICATION TO THE HERA MISSION

Aurelio Kaluthantrige, University of Strathclyde, Glasgow, United Kingdom

IAC-24.C1.5.2

HARDWARE-IN-THE-LOOP TEST OF A CNN-BASED IMAGE PROCESSING ALGORITHM FOR AUTONOMOUS VISUAL-BASED NAVIGATION APPLIED TO THE HERA MISSION

Aurelio Kaluthantrige, University of Strathclyde, Glasgow, United Kingdom

IAC-24.C1.5.3

AI-BASED SENSOR FUSION FOR ROBUST POSE ESTIMATION AND AUTONOMOUS NAVIGATION OF SPACECRAFT MISSIONS TO ASTEROIDS

Iain Hall, University of Strathclyde, Glasgow, United Kingdom

IAC-24.C1.5.4

THE VALUE OF CONFIGURABLE AND INTELLIGENT ONBOARD SOFTWARE FOR THE CAPSTONE MISSION

Jack Kelly, Tyvak Nanosatellite Systems, Irvine, United States

IAC-24.C1.5.5

STABILITY ANALYSIS OF GUIDANCE AND CONTROL NETWORKS THROUGH DIFFERENTIAL ALGEBRA

Dario Izzo, European Space Agency (ESA), Noordwijk, The Netherlands

IAC-24.C1.5.6

NEO SURVEYOR MISSION: FIRST COURSE CORRECTION MANEUVER STRATEGIES

Dr. Mar Vaquero, NASA Jet Propulsion Laboratory, United States

IAC-24.C1.5.7

AUTONOMOUS IMAGE-BASED NAVIGATION IN CISELUNAR ORBITS VIA META-REINFORCEMENT LEARNING

Elia Violino, Politecnico di Milano, Milano, Italy

IAC-24.C1.5.8

NONLINEAR OPTIMAL FEEDBACK CONTROL DESIGN FOR SAFE RENDEZVOUS AND PROXIMITY OPERATIONS

Zachary Preissman, Pennsylvania State University, Richboro, United States

IAC-24.C1.5.9

MACHINE LEARNING-BASED MODEL PREDICTIVE CONTROL MOTION PLANNING FOR AUTONOMOUS ON-ORBIT ASSEMBLY

Siavash Tavash, Ryerson University, Toronto, Canada

IAC-24.C1.5.10

AN IMPROVED DEEPONET FRAMEWORK TO REDUCE COMPUTATIONAL DEMAND IN PREDICTOR-CORRECTOR GUIDANCE

Bo Tang, Harbin Institute of Technology, Shenzhen, China

C1.6. Mission Design, Operations & Optimization (1)

October 14 2024, 15:30 — Blue Hall 2

Co-Chair(s): Yury Razoumny, RUDN University, Russian Federation; Mauro Pontani, Sapienza University of Rome, Italy

Rapporteur(s): Liang Tang, Beijing Institute of Control Engineering, CAST, China

IAC-24.C1.6.1

ROBUST TRAJECTORY DESIGN AND CONTROLLABLE SET METHODS

Robyn Natherson, University of Colorado Boulder, Boulder, United States

IAC-24.C1.6.2

MISSION DESIGN STRATEGIES FOR RENDEZVOUS AND SERVICING OF SUN-EARTH LIBRATION POINT MISSIONS

Cassandra Webster, NASA Goddard Space Flight Center Greenbelt MD 20771, Edgewater, United States

IAC-24.C1.6.3

ANIME ASTEROID CUBESAT MISSION CONCEPT AND RENDEZVOUS PHASE: PROGRESSIVE HYPERBOLIC ARCS DESIGN FOR RADIO-SCIENCE AND CLOSE OBSERVATION

Enrico Belloni, Politecnico di Milano, Milan, Italy

IAC-24.C1.6.4

A DIRECT OPTIMIZATION APPROACH FOR ROBUST TRAJECTORIES OF INTERPLANETARY CUBESATS

Carmine Giordano, Politecnico di Milano, Milan, Italy

IAC-24.C1.6.5

PRELIMINARY DESIGN OF THE RENDEZVOUS AND INTERCEPTION TRAJECTORIES TO ASTEROID 2015 XF261

Zhong Zhang, Tsinghua University, Beijing, China

IAC-24.C1.6.6

INTERPLANETARY TRAJECTORY DESIGN TOOL FOR COMETARY SAMPLE RETURN MISSIONS

Anna Barbieri, Politecnico di Milano, Milano, Italy

IAC-24.C1.6.7

APPROACH STRATEGIES FOR INSERTING INTO ENCELADUS SCIENCE ORBIT CONFIGURATIONS

Spencer Boone, Institut Supérieur de l'Aéronautique et de l'Espace (ISAE), Toulouse, France

IAC-24.C1.6.8

GENERALIZED GAUSSIAN SMOOTHING HOMOTOPY METHOD FOR SOLVING NONLINEAR OPTIMAL CONTROL PROBLEMS

Prof. Bin Feng Pan, Northwestern Polytechnical University, Xi'an, China

IAC-24.C1.6.9

ON THE KEPLERIAN TSP AND VRP: BENCHMARK SETS AND ENCODING TECHNIQUES

Dario Izzo, European Space Agency (ESA), Noordwijk, The Netherlands

IAC-24.C1.6.10

ASTEROID FLYBYS FROM THE L2 SUN-EARTH LAGRANGE POINT

Sho Wright, Farnham, United Kingdom

C1.7. Mission Design, Operations & Optimization (2)

October 15 2024, 10:15 — Blue Hall 2

Co-Chair(s): Erick Lansard, Satellite Research Center, Nanyang Technological University (NTU), Singapore, Republic of; Richard Epenoy, Centre National d'Etudes Spatiales (CNES), France

IAC-24.C1.7.1

OPTIMAL LOW-THRUST ORBIT TRANSFERS CONNECTING EARTH, MOON, AND GATEWAY

Chiara Pozzi, Khalifa University of Science and Technology (KUST), Abu Dhabi, United Arab Emirates

IAC-24.C1.7.2

POWERED DESCENT TRAJECTORY DESIGN AND GUIDANCE STRATEGY OF CHANDRAYAAN-3 LUNAR LANDER MISSION
RUEESH M P, Indian Space Research Organization (ISRO), BANGALORE, India

IAC-24.C1.7.3

A GRAPH-AIDED DESIGN FRAMEWORK OF LOW-ENERGY TRANSFERS
Kenta Oshima, Hiroshima Institute of Technology, Hiroshima, Japan

IAC-24.C1.7.4

CISLUNAR TRAJECTORY DESIGN AND MANEUVER AUTONOMY FOR NASA'S MOON TO MARS ARCHITECTURE
Aaron Houin, NASA, Huntsville, United States

IAC-24.C1.7.5

PRACTICAL RENDEZVOUS SCENARIO FOR LOGISTICS RESUPPLY MISSION TO THE LUNAR GATEWAY AFTER NRHO INSERTION AT THE PERILUNE.
Naomi Murakami, Japan Aerospace Exploration Agency (JAXA), Tsukuba, Ibaraki, Japan

IAC-24.C1.7.6

UTILIZING MOMENTUM DUMPS FOR KPLO FINE TRAJECTORY CORRECTION IN BALLISTIC LUNAR TRANSFER
SeungBum Hong, Korea Aerospace Research Institute (KARI), Daejeon, Korea, Republic of

IAC-24.C1.7.7

LUNAR NAVIGATION CONSTELLATION DESIGN WITH PERIODIC ORBITS IN EARTH-MOON SYSTEM BY MULTI-OBJECTIVE OPTIMIZATION
Ryusei Komatsu, The Graduate University of Advanced Studies, Sagami-hara, Japan

IAC-24.C1.7.8

INTERPLANETARY TRANSFERS BY THE AUTOMATIC SEARCH OF EARTH AND EARTH/MOON RESONANT ARCS
Davide Basso, European Space Agency (ESA-ESOC), Darmstadt, Germany

IAC-24.C1.7.9

EARTH MULTI-TARGET TRAJECTORY DESIGN WITH ARTIFICIAL NEURAL NETWORK
Anna Barbieri, Politecnico di Milano, Milano, Italy

IAC-24.C1.7.10

DYNAMICS OF JETTISON DURING EARTH-TO-NRHO TRANSFERS
Diane Davis, National Aeronautics and Space Administration (NASA), Johnson Space Center, Houston, TX, United States

C1.8. Orbital Dynamics (1)

October 15 2024, 15:00 — Blue Hall 2

Co-Chair(s): Yuichi Tsuda, Japan Aerospace Exploration Agency (JAXA), Japan; Elena Fantino, Khalifa University of Science and Technology (KUST), United Arab Emirates

Rapporteur(s): Kathleen Howell, Purdue University, United States

IAC-24.C1.8.1

INVESTIGATION OF LONG-TERM ORBITAL BEHAVIOUR IN THE HIGH-ORDER LUNAR GRAVITY FIELD
Alessandro Masat, IMS Space Consultancy, Darmstadt, Germany

IAC-24.C1.8.2

NAVIGATION STRATEGIES FOR MARTIAN SATELLITES EXPLORATION MISSION
Hitoshi Ikeda, Japan Aerospace Exploration Agency (JAXA), Sagami-hara, Japan

IAC-24.C1.8.3

NEW FAMILIES OF HALO ORBITS ABOUT THE PHOTO-GRAVITATIONAL EQUILIBRIUM IN THE SUN - EARTH-MOON SYSTEM'S CENTER OF MASS ELLIPTIC RESTRICTED THREE BODY PROBLEM FOR PLANETARY SUNSHADE MISSIONS
Catello Leonardo Matonti, Politecnico di Torino, Turin, Italy

IAC-24.C1.8.4

THE SUN-EARTH L1-L2 HETEROCLINICS IN RESTRICTED FOUR-BODY NON-AUTONOMOUS MODELS
Ruilong Li, Universitat Politècnica de Catalunya (UPC), Barcelona, Spain

IAC-24.C1.8.5

DYNAMICS OF THE 9:2 NEAR RECTILINEAR HALO ORBIT IN THE SUN-EARTH-MOON SYSTEM: STAGING, PHASING, AND TRANSPORT
Gavin Brown, University of Colorado Boulder, Boulder, United States

IAC-24.C1.8.6

BRIDGING EPHEMERIS TRANSITION GAPS: LEVERAGING STRUCTURES WITHIN INTERMEDIATE MODELS
Beom Park, Purdue University, West Lafayette, United States

IAC-24.C1.8.7

LOW-THRUST GRAVITY-ASSISTED RENDEZVOUS TRAJECTORY \\\ TO HALLEY'S COMET
Alessandro Beolchi, Khalifa University of Science and Technology (KUST), Abu Dhabi, United Arab Emirates

IAC-24.C1.8.8

DESIGN OF ROBUST TRAJECTORIES AROUND BINARY ASTEROIDS VIA MOMENT MAPS
Giacomo Acciarini, European Space Agency (ESA), Leiden, The Netherlands

IAC-24.C1.8.9

INVESTIGATING (65803) DIDYMOS PROPERTIES AND DYNAMICAL EVOLUTION AS AN N-BODY SYSTEM
Giorgia Rota, Politecnico di Milano, Milan, Italy

IAC-24.C1.8.10

ORBITAL CAPTURE OF THE DART IMPACT EJECTA AROUND THE DIDYMOS BINARY ASTEROID SYSTEM
Xiaoyu Fu, University of Liverpool, LIVERPOOL, United Kingdom

C1.9. Orbital Dynamics (2)

October 16 2024, 10:15 — Blue Hall 2

Co-Chair(s): Othon Winter, UNESP - São Paulo State University, Brazil; Josep J. Masdemont, Universitat Politècnica de Catalunya (UPC), Spain

Rapporteur(s): David C. Folta, National Aeronautics and Space Administration (NASA), Goddard Space Flight Center, United States

IAC-24.C1.9.1

KEYNOTE: BREAKWELL LECTURE - UNIQUE ORBITS FOR UNIQUE SPACE MISSIONS
Amalia Ercoli Finzi, Politecnico di Milano, Milan, Italy

IAC-24.C1.9.2

STEREOGRAPHIC PROJECTION AND STATIC DIGRAPH FOR INFORMATION ROUTING IN SATELLITE CONSTELLATIONS
Giulio De Angelis, Sapienza University of Rome, Rome, Italy

IAC-24.C1.9.3

ANALYSIS OF ATMOSPHERIC AND NON-SPHERICAL GRAVITATIONAL PERTURBATIONS ON HYPERBOLIC ORBITS ABOVE VENUS, EARTH, AND MARS.
Jhonathan Murcia Piñeros, Federal University of São Paulo (UNIFESP), São José dos Campos, Brazil

IAC-24.C1.9.4

SATELLITE EPHEMERIS COMPUTATION WITH IDEAL-HODOGRAPHIC ELEMENTS USING BREAKWELL AND VAGNERS' ENERGY-CALIBRATION CONTROL
Martin Lara, Universidad de La Rioja, Sada, Spain

IAC-24.C1.9.5

INVESTIGATION OF INTERIOR MEAN MOTION RESONANCES AND HETEROCLINIC CONNECTIONS IN THE EARTH-MOON SYSTEM
Bhanu Kumar, Heidelberg University, Alphetta, United States

IAC-24.C1.9.6

POST MISSION DISPOSAL DESIGN IN THE LAPLACE PLANE LEVERAGING ORBITAL PERTURBATIONS
Xiaodong Lu, Politecnico di Milano, MILANO, Italy

IAC-24.C1.9.7

GENERATION AND STABILITY ANALYSIS OF LONG-TERM BOUNDED SPACECRAFT CLUSTER ORBITS USING LAGRANGIAN COHERENT STRUCTURES

Lin Chen, Beihang University (BUAA), Beijing, China

IAC-24.C1.9.8

GENERATION AND CLASSIFICATION OF CRITICAL POINTS IN UNCERTAIN N-BODY PROBLEMS VIA MACHINE LEARNING

Callum Wilson, University of Strathclyde, Glasgow, United Kingdom

IAC-24.C1.9.9

SEPARATRIX OF BOUNDED ORBITS AND ESCAPING MANIFOLDS IN HYPERBOLIC RESTRICTED THREE-BODY PROBLEM

Lei Peng, Beihang University, Beijing, China

C2. IAF MATERIALS AND STRUCTURES SYMPOSIUM

Coordinator(s): Jochen Albus, ArianeGroup, Germany; Alwin Eisenmann, IABG Industrieanlagen - Betriebsgesellschaft mbH, Germany

C2.1. Space Structures I Design, Development and Verification (Launch Vehicles and Space Vehicles, including their Mechanical/Thermal/Fluidic Systems)

October 14 2024, 15:30 — Orange Hall 1

Co-Chair(s): Alwin Eisenmann, IABG Industrieanlagen - Betriebsgesellschaft mbH, Germany; Jochen Albus, ArianeGroup, Germany

Rapporteur(s): Zijun Hu, China Academy of Launch Vehicle Technology (CALT), China; Coraline Dalibot, Rutherford Appleton Laboratory, United Kingdom

IAC-24.C2.1.1

ENHANCING CRASHWORTHINESS OF LEGGED-TYPE LANDER HONEYCOMB BUFFERS UNDER LOW-VELOCITY IMPACTS THROUGH MACHINE LEARNING FRAMEWORK

Bianca Omede', Politecnico di Milano, Milano, Italy

IAC-24.C2.1.3

PREDICTION OF THERMO-MECHANICAL STATE OF REENTRY CAPSULE BASED ON LIMITED SENSORS

Jian-Jun Gou, Northwestern Polytechnical University, Xi'an, China

IAC-24.C2.1.4

DEVELOPMENT OF NON-DETONIC SEPARATION SYSTEM – VERIFICATION OF RELEASE DELAY-TIME EFFECT ON LV STRUCTURES

Marco Ancillai, AVIO S.p.A., Colleferro, Italy

IAC-24.C2.1.5

STRUCTURAL OPTIMIZATION OF A STIFFENED CYLINDER USING ARTIFICIAL NEURAL NETWORKS

S M SHEHZEB ABBAS, Pakistan Space and Upper Atmosphere Research Commission (SUPARCO), Karachi, Pakistan

IAC-24.C2.1.6

NUMERICAL STUDY OF VIBRATION FATIGUE FAILURE FOR PIPELINE WELDED STRUCTURE IN LIQUID ROCKET ENGINES

Hanyang Shi, Xi'an Aerospace Propulsion Institute, xi'an, China

IAC-24.C2.1.7

DEVELOPMENT AND TESTING OF A THRUST VECTOR CONTROL SYSTEM FOR A HYBRID ROCKET ENGINE

Patrick Christian Melo, University of Brasilia, Gama, Brazil

IAC-24.C2.1.8

INHOUSE DEVELOPMENT OF ADDITIVE MANUFACTURED (AM) DIAPHRAGM TANK FOR GREEN MONO-PROPELLANT (GMP) BASED PROPULSION SYSTEM

Kuldeep Singh Rajput, Bellatrix Aerospace Private Limited., Bangalore, India

IAC-24.C2.1.9

ENHANCING THE NATURAL FREQUENCY OF THAI SPACE CONSORTIUM-1 SATELLITE (TSC-1) BY PERFORMING AN ANALYSIS OF DIFFERENT STRUCTURAL CONFIGURATIONS AND MATERIALS

Wichayuth Klankla, National Astronomical Research Institute of Thailand (NARIT), Chiangmai, Thailand

IAC-24.C2.1.10

AN EVALUATION OF COMPOSITE PRIMARY STRUCTURE FOR HABITAT MODULES

Bennett Torrance, Boeing, Hermosa Beach, United States

IAC-24.C2.1.11

HOMEOSTATIC INFLATABLE DECENTRALIZED AUTONOMOUS STRUCTURES: INTELLIGENT SPACE STRUCTURE USING INFLATABLE STRUCTURE AND DECENTRALIZED AUTONOMY

Yoshino Sakuraba, Tokyo University of Science, Chiba, Japan

IAC-24.C2.1.12

STE: A NOVEL TOOL FOR SPACE THERMAL ENVIRONMENT ASSESSMENT

Lorenzo Rabagliati, Verona, Italy

C2.2. Space Structures II Development and Verification (Orbital deployable and dimensionally stable structures, including mechanical and robotic systems and subsystems)

October 15 2024, 10:15 — Orange Hall 1

Co-Chair(s): Paolo Gasbarri, University of Rome "La Sapienza", Italy; Pavel Trivailo, RMIT University (Royal Melbourne Institute of Technology), Australia

Rapporteur(s): Jiawen Qiu, China

IAC-24.C2.2.1

DESIGN AND OPTIMIZE OF SOFT ROBOTIC MANIPULATOR BASED ON CABLE-DRIVEN BELLOWS STRUCTURE

Rui Lin, Beihang University (BUAA), Beijing, China

IAC-24.C2.2.2

DESIGN OF BISTABLE DEPLOYABLE BOOMS USING NON-DOMINATED SORTING ALGORITHM

Flavia Palmeri, Sapienza University of Rome, Rome, Italy

IAC-24.C2.2.3

MEMBRANE REFLECTARRAY ANTENNA DESIGN DEPLOYED ON SMALL SATELLITES USING COMPOSITE BOOMS

Hiraku Sakamoto, Tokyo Institute of Technology, Tokyo, Japan

IAC-24.C2.2.4

IMPLICIT VS EXPLICIT NONLINEAR DYNAMICS FOR THE UNFOLDING OF DEPLOYABLE SPACE STRUCTURES USING ADVANCED ONE-DIMENSIONAL FINITE ELEMENTS

Riccardo Augello, Politecnico di Torino, Torino, Italy

IAC-24.C2.2.5

DYNAMIC MODELING AND ANALYSIS OF DEPLOYABLE TELESCOPE TUBULAR MAST (TTM) IN SPACECRAFT SYSTEMS USING HYBRID COORDINATE AND KANE'S METHODS

Tongtong Sun, Northwestern Polytechnical University, Xi'an, China

IAC-24.C2.2.6

FAILURE ONSET EVALUATION OF DEPLOYABLE ROLLED-UP COMPOSITE SYNTHETIC APERTURE RADAR (DERAC-SAR) ANTENNA VIA GLOBAL/LOCAL APPROACH

Karim Abu Salem, Politecnico di Torino, Turin, Italy

IAC-24.C2.2.7

ACTIVELY CONTROLLED DEPLOYABLE POLYMER REFLECTORS FOR SMALL SATELLITE APPLICATIONS

Carl Johan Nielsen, Université Libre de Bruxelles, Brussels, Belgium

IAC-24.C2.2.8

DEPLOYMENT AND REACHABILITY ANALYSIS OF TENDON-ACTUATED STRUCTURAL MODULES FOR AN IN-SPACE ASSEMBLED SEGMENTED REFLECTOR

Nate Osikowicz, Pennsylvania State University, University Park, United States

IAC-24.C2.2.9

A COMPREHENSIVE ERROR ANALYSIS OF HIGH-PRECISION DOCKING PROCESS FOR MICRO SATELLITE

Zhang Bo, Innovation Academy for Microsatellites, Chinese Academy of Sciences, Shanghai, China

IAC-24.C2.2.10

DEPLOYMENT MECHANISM DESIGN FOR ATMOSPHERIC REENTRY PROTECTION SYSTEMS

Artem Andrianov, University of Brasilia, Gama-DF, Brazil

IAC-24.C2.2.11

NEW CONFIGURATION OPTIMIZATION ALGORITHM FOR RECONFIGURATION SPACE MANIPULATOR BASED ON GENERALIZED FLEXIBILITY INDEX

Ying Tian, Beihang University, Beijing, China

IAC-24.C2.2.12

CO-DESIGN ROBOTS AND STRUCTURES FRAMEWORK FOR AUTOMATED CONSTRUCTION OF MODULAR SPACE PLATFORMS

Mathieu Rognant, Office National d'Etudes et de Recherches Aéropatiales (ONERA), Toulouse, France

C2.3. Space Structures III Design, Development and Verification (Orbital infrastructure for in orbit service & manufacturing, Robotic and Mechatronic systems, including their Mechanical/Thermal/Fluidic Systems)

October 15 2024, 15:00 — Orange Hall 1

Co-Chair(s): Andreas Rittweger, DLR (German Aerospace Center), Germany; Oleg Alifanov, MAI, Russian Federation

Rapporteur(s): Ijar Da Fonseca, ITA-DCTA, Brazil

IAC-24.C2.3.1

3D-PRINTING MECHATRONICS COMPONENTS FOR RECONFIGURABLE ROBOTICS

Kevin Sankar, Carleton University, Space Exploration and Engineering Group, Ottawa, Canada

IAC-24.C2.3.3

STUDY ON MICROSATELLITE STRUCTURE TO MITIGATE MECHANICAL ENVIRONMENT

Kentaro Shirai, Tokyo Metropolitan University, Machida-shi, Tokyo, Japan

IAC-24.C2.3.4

MORPHOLOGY AND BEHAVIOR CO-OPTIMIZATION OF MODULAR SATELLITES FOR ATTITUDE CONTROL

Yuxing Wang, Tsinghua University, Shenzhen, China

IAC-24.C2.3.5

DESIGN OF ROBOTIC ARMS WITH SMART END-EFFECTORS FOR IN-ORBIT ASSEMBLY AND DIS-ASSEMBLY

Yun-Hang Cho, University of Sheffield, Sheffield, United Kingdom

IAC-24.C2.3.6

ENABLING ROBOTIC GRASPING IN SPACE: PRELIMINARY PERFORMANCE EVALUATION IN SPACE-LIKE ENVIRONMENT OF ADAPTRONICS' ELECTRO-ADHESIVE TECHNOLOGY

Francesca Giardina, Adaptronics s.r.l., Milan, Italy

IAC-24.C2.3.7

EXPERIMENTAL ANALYSIS OF A SPACE RE-ENTRY VEHICLE AT LANDING CONDITIONS

Nicolina Montella, Università degli Studi della Campania "Luigi Vanvitelli", Aversa, Italy

IAC-24.C2.3.9

PIEZOELECTRIC SENSOR SYSTEM FOR STRUCTURAL HEALTH MONITORING OF SPACECRAFT DOCKING

Lukas Peterson, New Mexico Tech, Socorro, United States

IAC-24.C2.3.10

GENERATIVE IN-SPACE MANUFACTURING OF LARGE SPACE STRUCTURES USING FIBRE-REINFORCED PHOTOPOLYMERS

Jannik Pimpi, Munich University of Applied Sciences, Munich, Germany

IAC-24.C2.3.11

TECHNOLOGY DEMONSTRATOR FOR INFINITE LENGTH ON-ORBIT PRINTING (ILOOP)

Moritz Förster, Experimental Raumfahrt-Interessen Gemeinschaft e.V., Braunschweig, Germany

IAC-24.C2.3.12

EXPERIMENT-BASED PERFORMANCE ANALYSIS OF THE MOTION SUSPENSION SYSTEM FOR SPACE ROBOT TESTING

Ferdinand Elhardt, German Aerospace Center (DLR), Oberpfaffenhofen-Wessling, Germany

C2.4. Space Structures Control, Dynamics and Microdynamics

October 16 2024, 10:15 — Orange Hall 1

Co-Chair(s): Federica Angeletti, University of Rome "La Sapienza", Italy; Élcio Jeronimo de Oliveira, Associação Italiana de Aeronautica e Astronautica (AIDAA), Brazil

Rapporteur(s): Harijono Djojodihardjo, Bandung Institut of Technology, Indonesia

IAC-24.C2.4.1

SPACE CIRCUITRY TUNABLE MASS DAMPER DESIGN PARAMETERS SENSITIVITY ANALYSIS

MANUELE LAURENZI, University of L'Aquila, L'AQUILA, Italy

IAC-24.C2.4.2

ON THE IMPACT OF GRAVITY DURING THE MICRO-VIBRATION CHARACTERIZATION OF REACTION-WHEELS: AN EXPERIMENTAL ASSESSMENT

Matias Bestard Körner, German Aerospace Center (DLR), Bremen, Germany

IAC-24.C2.4.3

MULTIBODY SIMULATIONS AND IMPACT TESTS OF A DOCKING SYSTEM FOR SMALL SATELLITES

Martina Imperatrice, CISAS – "G. Colombo" Center of Studies and Activities for Space, Padova, Italy

IAC-24.C2.4.4

DESIGN AND ANALYSIS OF MULTIPLE COMPETING "INERTIAL MORPHING" CONTROL SCHEMES FOR AUTONOMOUS SPINNING SPACECRAFT, ENABLING ATTITUDE ACROBATICS WITH AIMED AGILITY

Pavel M. Trivailo, RMIT University, Australia, Melbourne, VIC, Australia

IAC-24.C2.4.5

MODELING AND CONTROL OF AN EARTH OBSERVATION SATELLITE EQUIPPED WITH A SPINNING FLEXIBLE ANTENNA

David Paolo Madonna, Sapienza University of Rome, Rome, Italy

IAC-24.C2.4.6

MACHINE LEARNING FOR PATH PLANNING OF SPACE ROBOTS RVD/B ORBITAL OPERATIONS

Ijar Da Fonseca, ITA-DCTA, São José dos Campos, Brazil

IAC-24.C2.4.7

INVESTIGATING SHOCK PROPAGATION THROUGH COMPOSITE STRUCTURES

Ada Ranieri, Politecnico di Bari, Bari, Italy

IAC-24.C2.4.8

SIMULATION AND EXPERIMENTAL INVESTIGATION OF CALLISTO'S LANDING LEG DEPLOYMENT DYNAMICS

Anton Schneider, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Bremen, Germany

IAC-24.C2.4.9

DESIGN, VALIDATION AND PRODUCTION OF SMALL-SIZE ROVER ELASTIC WHEELS: A SOLUTION TO PLASTIC DEFORMATIONS

Mattia Trentini, Politecnico di Torino, Torino, Italy; Giulio Candita, Politecnico di Torino, Turin, Italy

IAC-24.C2.4.10

NASH EQUILIBRIUM-BASED VIBRATION CONTROL FOR LARGE FLEXIBLE SPACE STRUCTURES USING DISTRIBUTED CONTROL MOMENT GYROSCOPES

TingXiang Zhang, Beijing Institute of Technology, Beijing, China

IAC-24.C2.4.11

USING GENETIC ALGORITHM TO CHARACTERIZE DYNAMIC JOINT PARAMETERS OF SSRMS

Sarah Halabieh, MDA, Brampton, Canada

IAC-24.C2.4.12

CHARACTERIZATION OF A NOVEL MICRO-VIBRATION MITIGATION DEVELOPED FOR AN EXPERIMENTAL LIFE SCIENCES CUBE USED AT THE INTERNATIONAL SPACE STATION

Saban Otenkaya, TUBITAK Uzay, Space Technologies Research Institute, Ankara, Türkiye

IAC-24.C2.4.13

METOP-SG MICROWAVE IMAGER INSTRUMENT MICROVIBRATION CAMPAIGN

Claudio Maini, OHB Italia SpA, Milano, Italy

C2.5. Space Structures and Materials for Extreme Environment (High-temperature and cryogenic-temperature applications including thermal insulation concepts)

October 16 2024, 15:00 — Orange Hall 1

Co-Chair(s): David E. Glass, National Aeronautics and Space Administration (NASA), United States; Thierry Pichon, ArianeGroup, France

Rapporteur(s): Zijun Hu, China Academy of Launch Vehicle Technology (CALT), China; James Tucker, [unlisted], United States

IAC-24.C2.5.1

KEYNOTE: PAOLO SANTINI MEMORIAL LECTURE - IN SPACE MANUFACTURING AND EXTRATERRESTRIAL CONSTRUCTION - HOW DID WE GET HERE? - WHERE ARE WE? - WHERE SHOULD WE BE GOING? - THE CHALLENGE: WILL WE BE READY?

Raymond G. Clinton, NASA Marshall Space Flight Center, Huntsville, United States

IAC-24.C2.5.2

ADVANCED OXIDE CERAMIC MATRIX COMPOSITE INLET WITH DEPLOYABLE FLAP FOR RE-ENTRY ENVIRONMENTS

Valerie L. C. Dosch, Walter E.C. Pritzkow Spezialkeramik, Filderstadt, Germany

IAC-24.C2.5.3

MULTI-PLATEAU AUXETIC METAMATERIALS CONSTRUCTED BY INTRACELLULAR AND INTERCELLULAR GRADIENTS FOR ENERGY ABSORPTION IN SPACE

Changfang Zhao, Tsinghua University, Beijing, China

IAC-24.C2.5.4

MATERIAL CHARACTERIZATION AND PLASMA TESTING FOR AN INFLATABLE HEATSHIELD FOR THE EARS REUSABLE SMALLSAT PLATFORM

Simone Del Monte, von Karman Institute for Fluid Dynamics, Bruxelles, Belgium; Diana Martins, von Karman Institute for Fluid Dynamics, Sint-Genesius-Rode, Belgium

IAC-24.C2.5.5

THE AURORA CONFIGURATION OF SCIROCCO PLASMA WIND TUNNEL FOR EXPERIMENTS AT SUPER-ORBITAL RE-ENTRY CONDITIONS

Eduardo Trifoni, Australian National University (ANU), Weston Creek, Australia

IAC-24.C2.5.6

METAMATERIAL DESIGN AND MANUFACTURING TECHNOLOGIES FOR EXTREME ENVIRONMENT APPLICATIONS

Pengfei Wang, China Academy of Aerospace Science and Innovation, Beijing, China

IAC-24.C2.5.7

THE FATIGUE PERFORMANCE STUDY OF A LEADING EDGE UNDER HIGH TEMPERATURE

Xiaowei WANG, China Academy of Launch Vehicle Technology (CALT), Beijing, China; Rong Chen, China Academy of Launch Vehicle Technology (CALT), Beijing, China

IAC-24.C2.5.8

MULTILAYER ANISOTROPIC HEAT SHIELD: ANALYSIS OF THE STRUCTURE AND THERMAL STRESS STATE IN CASE OF A LUNAR PROBE RE-ENTRY MODULE

Victor Leonov, Bauman Moscow State Technical University, Moscow, Russian Federation

IAC-24.C2.5.10

JOINING OF C/C-SIC CERAMIC MATRIX COMPOSITES TO HIGH-ENTROPY ALLOYS USING COBALT-BASED FILLERS FOR IN-SPACE APPLICATIONS

Ebrar Ekiz, ARCEON B.V., Delft, The Netherlands

IAC-24.C2.5.11

NUMERICAL STUDY OF THERMAL ANISOTROPY AND LAY-UP CONFIGURATION ON DEFECT DETECTION IN COMPOSITE PLATE USING LOCK-IN THERMOGRAPHY TEST

Sidra Riaz, Politecnico di Bari, Bari, Italy

C2.6. Space Environmental Effects and Spacecraft Protection

October 17 2024, 10:15 — Orange Hall 1

Co-Chair(s): Antonio Del Vecchio, CIRA Italian Aerospace Research Centre, Italy; Anatolii Lohvynenko, Yuzhnoye State Design Office, Ukraine

Rapporteur(s): Kyeum-rae Cho, Pusan National University, Korea, Republic of

IAC-24.C2.6.1

DEVELOPMENT OF POLY(VINYL ALCOHOL) ORGANOGELS CROSSLINKED BY BORIC ACID FOR RADIATION PROTECTION IN SPACE

Lucia Lambertini, Sapienza University of Rome, Rome, Italy

IAC-24.C2.6.2

EVALUATION OF SPACECRAFT SHIELDING CAPABILITIES AGAINST THE CHALLENGES OF THE SPACE RADIATION ENVIRONMENT (CASE STUDY)

Abdullah Alsubaihi, King Abdulaziz City for Science & Technology (KACST), Riyadh, Saudi Arabia

IAC-24.C2.6.3

DESIGNING MAGNETIC SHIELDING FOR SPACE APPLICATIONS USING SPRAY COATING TECHNOLOGY

Peter Koss, Fraunhofer IPM, Freiburg im Breisgau, Germany

IAC-24.C2.6.4

RADIATION ENVIRONMENT AND EFFECT ANALYSIS OF THE ZODIAC PIONEER MISSION

Eleonora Vacca, Politecnico di Torino, Torino, Italy

IAC-24.C2.6.5

ADVANCING HABITABILITY PROPERTIES IN SPACE: SHIELDING AGAINST COSMIC RADIATION WITH POLYMER-BASED MATERIALS AND BEYOND

Esteban Decline, ALTEN, Ecqueville, France

IAC-24.C2.6.6

RADIATION SHIELDING PERFORMANCE OF CFRP-BASED SATELLITE STRUCTURAL PANELS IN LEO

Jeremy Brown, Swinburne University of Technology, Hawthorn, Australia

IAC-24.C2.6.7

NANOSILICA-BASED COMPOSITES FOR SPACE DURABILITY

Daniele Tortorici, Sapienza University of Rome, Rome, Italy

IAC-24.C2.6.9

WEAR-RESISTANCE INVESTIGATIONS ON CERAMIC COATINGS FOR LUNAR DUST MITIGATION

Seetha Raghavan, Embry-Riddle Aeronautical University, Daytona Beach, United States

IAC-24.C2.6.10

ATOMIC OXYGEN AND UV RADIATION SYNERGISTIC AGEING EFFECTS ON SOLAR ARRAYS OF SAPIENZA UNIVERSITY OF ROME LEDSAT CUBESAT

Andrea Delfini, Sapienza University of Rome, Roma, Italy

IAC-24.C2.6.12

STUDYING THE EFFECTS OF SPACE ENVIRONMENTAL FACTORS ON THE FATIGUE BEHAVIOR OF A MATERIAL ON SPACECRAFT'S BODY

Shubham Das, R V College of Engineering, Bengaluru, Patna, India

C2.7. Manufacturing and industrialization for Launch Vehicle and Space Vehicle Structures and components (High volume production, industrialization, automatization and digitalization)

October 17 2024, 15:00 — Orange Hall 1

Co-Chair(s): Oliver Kunz, Beyond Gravity, Switzerland; Aicke Patzelt, MT Aerospace AG, Germany

Rapporteur(s): Elizabeth Barrios, NASA, United States

IAC-24.C2.7.1

KEYNOTE: AUTOMATION AND DIGITALIZATION FOR ADVANCED MANUFACTURING AND LAUNCHERS INDUSTRIALIZATION

Jean Mathieu Guimard, ArianeGroup, Les Mureaux, France

IAC-24.C2.7.2

A GENERAL FRAMEWORK FOR THE INTEGRATION OF INDUSTRY 4.0 METHODOLOGIES INTO THE MANUFACTURING, ASSEMBLY, INTEGRATION, AND TESTING PROCESSES OF THE SPACE INDUSTRY

Marco Eugeni, Sapienza University of Rome, Rome, Italy

IAC-24.C2.7.3

STRUCTURAL HEALTH MONITORING AS AN ENABLER FOR SPACE 4.0

Evaristo Odinolfi, Beyond Gravity, Zurich, Switzerland

IAC-24.C2.7.4

SCRAP RECYCLING POTENTIAL OF PREPREG COMPOSITES

Tasneem Fatima, UNSW Australia, Glebe, Australia

IAC-24.C2.7.5

FOSTERING SUSTAINABILITY OF EUROPEAN LAUNCHER MANUFACTURING THROUGH THE ARIANE 6 & P120C PROCESS IMPROVEMENT PROGRAMME

Michael Mallon, ESA - European Space Agency, Noordwijk, The Netherlands

IAC-24.C2.7.6

LOW-COST STRUCTURAL SCALE MODELLING FOR SPACE SYSTEMS

Andrew Bowman, University of Manitoba, Winnipeg, Canada

IAC-24.C2.7.8

NOVEL MANUFACTURING APPROACH FOR COPPER-ALLOY MATERIAL USED IN THE MANUFACTURE OF COMBUSTION-FACING THRUST CHAMBER ASSEMBLY COMPONENTS

Peter Böhlke, KME Germany GmbH, Osnabrück, Germany

IAC-24.C2.7.9

LATEST RESEARCH ON DYNAMIC ENVIRONMENTAL TESTING FOR SPACE HARDWARE

Alberto Garcia de Miguel, Siemens, Leuven, Belgium

IAC-24.C2.7.10

LASER MICROMACHINING OF COMPOSITES FOR AEROSPACE APPLICATIONS. A REVIEW

Atharva Sawant, BRAC's, Vishwakarma Institute of Information Technology, Dattanagar chowk, India

IAC-24.C2.7.11

3D PRINTED POLYMER STRUCTURES FOR SPACE APPLICATIONS

Adam Pinkner, Prague, Czech Republic; David Šorm, Prague, Czech Republic

IAC-24.C2.7.12

ADDITIVE MANUFACTURING OF COPPER COMPONENTS FOR THE SPACE SECTOR: A TECHNOLOGY COMPARISON

Paolo Parenti, Politecnico di Milano, Milano, Italy

C2.8. Advancements in Materials Applications, Additive Manufacturing, and Rapid Prototyping Manufacturing and Rapid Prototyping

October 18 2024, 10:15 — Orange Hall 1

Co-Chair(s): Pierre Rochus, CSL (Centre Spatial de Liège), Belgium; Raymond G. Clinton, NASA Marshall Space Flight Center, United States

Rapporteur(s): Bangcheng Ai, China Aerospace Science and Industry Corporation, China; Mario Marchetti, Sapienza University of Rome, Italy

IAC-24.C2.8.1

DEMONSTRATION OF ADVANCED MANUFACTURING FOR LAUNCH VEHICLES AND ENGINES

Yun-Hang Cho, University of Sheffield, Sheffield, United Kingdom

IAC-24.C2.8.2

LASER POWDER BED FUSION FOR OPTO-MECHANICAL FLIGHT HARDWARE ON SATELLITES

Stephan Roemer, OHB, Bremen, Germany

IAC-24.C2.8.3

ADDITIVE MANUFACTURING OF SPACE PROPULSIVE COMPONENTS: CHARACTERIZATION OF IN718 POWDER RECYCLING ON FINAL SAMPLE PROPERTIES

Ludovica Cavallucci, Politecnico di Milano, Como, Italy

IAC-24.C2.8.4

PRACTICAL INVESTIGATION INTO THE DIFFUSION BONDING OF 316L STAINLESS STEEL WITH BORON CARBIDE FOR RADIATION SHIELDING IN NUCLEAR THERMAL PROPULSION APPLICATION

Calvin Chandler, The Ohio State University, Columbus, United States

IAC-24.C2.8.5

ATILUS - ADDITIVE TECHNOLOGIES FOR INNOVATIVE LOW-THRUST IODINE SPACE UNIT FROM SCRAP

Tommaso Tirelli, taino, Italy

IAC-24.C2.8.6

ADVANCING SUSTAINABLE ADDITIVE MANUFACTURING IN SPACE VIA IN-SITU DATA MINING: CHALLENGES AND FUTURE PROSPECTS

Prof. Bianca Maria Colosimo, Politecnico di Milano, Milano, Italy

IAC-24.C2.8.7

REVOLUTIONIZING SPACECRAFT MANUFACTURING: 3D-PRINTABLE GRAPHENE-PLA COMPOSITE FOR ENHANCED CUBESAT STRUCTURES.

Basel Altawil, Khalifa University of Science and Technology (KUST), Abu Dhabi, United Arab Emirates

IAC-24.C2.8.9

METAL 3D PRINTER TECHNOLOGY DEMONSTRATOR; IN ORBIT DEMONSTRATION OF PRINTING 3D METAL PARTS

Rob Postema, ESA - European Space Agency, Noordwijk, The Netherlands

IAC-24.C2.8.10

GATEWAY EARTH ISRU: MANUFACTURING MECHANICAL MODULES ON THE MOON

Matjaz Vidmar, The University of Edinburgh, Edinburgh, United Kingdom

IAC-24.C2.8.11

BINDER JETTING OF LUNAR REGOLITH: 3D PRINTING AND DENSIFICATION

Maxim Isachenkov, Politecnico di Milano, Milano, Italy

IAC-24.C2.8.12

DEVELOPMENT AND FLIGHT RESULTS OF NOVEL CARBON FIBER CHASSIS AND WHEELS FOR LUNAR NANOROVER

Nicholas Acuna, Carnegie Mellon University, Pittsburgh, United States

C2.9. Smart Materials and Adaptive Structures & Specialized Technologies, Including Nanotechnology

October 18 2024, 13:45 — Orange Hall 1

Co-Chair(s): Behnam Ashrafi, National Research Council, Canada;

Aashish Agrawal, Space Applications Centre (ISRO), India

Rapporteur(s): Kanjuro Makihara, Tohoku University, Japan

IAC-24.C2.9.1

ENHANCING LUNAR HABITAT CONSTRUCTION: AN EXPERIMENTAL EVALUATION OF THERMAL PERFORMANCE AND DURABILITY OF FBG SENSOR-EMBEDDED LUNAR BRICKS

Carlo Giovanni Ferro, Politecnico di Torino, Turin, Italy

IAC-24.C2.9.2

SMART REPAIRABLE, RECYCLABLE, AND RESHAPABLE (3R) FIBER REINFORCED POLYMERS (FRP) WITH STRUCTURAL HEALTH MONITORING CAPABILITIES (SHM) BASED ON A VITRIMERIC MATRIX DOPED WITH CARBON-BASED NANOCOMPOSITES

Javier Gómez Sánchez, Universidad Rey Juan Carlos, Móstoles, Spain

IAC-24.C2.9.3

SIMPLE SHAPE FINDING FOR SPHERICAL TENSEGRITY BASED ON ROTATIONAL LOCATION

Kanjuro MAKIHARA, Tohoku University, Sendai, Japan

IAC-24.C2.9.4

SUSTAINABILITY ASSESSMENT OF PLASMA-ASSISTED PROCESSES FOR THIN FILM DEPOSITION IN SPACE APPLICATIONS

Veronica Orlandi, Université Paul Sabatier Toulouse III, Toulouse, France

IAC-24.C2.9.5

POLYIMIDE/GRAPHENE NANOCOMPOSITES AS ANTIBACTERIAL COATINGS FOR HUMAN EXPLORATION MISSIONS IN SPACE

Francesca Blondelli, Sapienza University of Rome, Roma, Italy

IAC-24.C2.9.6

APPLICATION OF SMART SENSORS AND ACTUATORS FOR SPARSE APERTURE

Brij Agrawal, Naval Postgraduate School, Monterey, United States

IAC-24.C2.9.7

STUDY OF THE MECHANICAL PROPERTIES OF EPOXY NANOCOMPOSITE MATERIALS WITH UCNPS AND GRAPHENE AND THEIR COMPARISON WITH A COMPUTATIONAL RVE/FEM MODEL.

Jevet Emiliano Damixi Lopez-Campos, Universidad Nacional Autónoma de México (UNAM), Queretaro, Mexico

IAC-24.C2.9.8

NANOMATERIALS REVOLUTIONIZING ENGINE DESIGN: ENHANCING EFFICIENCY AND SUSTAINABILITY

Akshat Tahiramani, University of Petroleum and Energy Studies, Nagpur, India

IAC-24.C2.9.9

PHOTOELECTROCHEMICAL GREEN HYDROGEN PRODUCTION UTILIZING ZNO NANOSTRUCTURED PHOTOELECTRODES

Sameerah Al-Saeedi, Princess Nourah bint Abdulrahman University, Riyadh, Saudi Arabia

IAC-24.C2.9.10

MULTI INPUT SINGLE OUTPUT ELECTROMECHANICAL IMPEDANCE STRUCTURAL HEALTH MONITORING: HARDWARE IMPLEMENTATION AND APPLICATION TO SPACE VEHICLES

Andrei Zagrai, New Mexico Tech, Socorro, United States

IAC-24.C2.9.11

PREDICTING AND MITIGATING CRYSTALLOGRAPHIC DEFECTS IN CARBON NANOTUBES

Rati Srivastava, University of Petroleum and Energy Studies, Prayagraj, India

IAC-24.C2.9.12

GRAPHENE INTEGRATION IN LITHIUM-ION BATTERIES FOR SMALL SATELLITES: ENHANCING EFFICIENCY AND DURABILITY

Camilo Andres Reyes Mantilla, Space Generation Advisory Council (SGAC), Dubai, United Arab Emirates

IAC-24.C2.9.13

REUSABLE SHAPE MEMORY SHOCK ABSORPTION ELEMENTS FOR SPACE USING ADDITIVE MANUFACTURING

Eleonore Poli, Centre Suisse d'Electronique et de Microtechnique SA (CSEM), Lausanne, Switzerland

C2.10. CATEGORY C "TECHNOLOGY" - Extra Session

October 18 2024, 13:45 — Green Hall 3

Co-Chair(s): John C. Mankins, ARTEMIS Innovation Management Solutions, LLC, United States; Paolo Gasbarri, University of Rome "La Sapienza", Italy

IAC-24.C2.10.1

ARCHITECTURAL DESIGN FOR ATTITUDE STABILIZATION OF A SPACE MEGASTRUCTURE

Eloïse Ropert, ISAE - Institut Supérieur de l'Aéronautique et de l'Espace, Toulouse, France

IAC-24.C2.10.2

ASSEMBLY AND DISASSEMBLY COUPLED ORBIT-ATTITUDE DYNAMICS OF THE EUROPEAN REFERENCE SOLAR POWER SATELLITE

Maria Anna Laino, University of Strathclyde, Glasgow, United Kingdom

IAC-24.C2.10.3

SPACECRAFT SHAPE OPTIMIZATION THEORETICAL GUIDELINES FOR FUNDAMENTAL FREQUENCY REGULATION

Giuseppe Maurizio Gagliardi, Università degli Studi di Napoli "Federico II", Napoli, Italy

IAC-24.C2.10.4

MULTIBODY DYNAMICS ANALYSIS AIMING ON-ORBIT ASSEMBLY OF 30M-CLASS SQUARE LIGHTWEIGHT PLANE ANTENNA

Mizuki Abe, Japan Aerospace Exploration Agency (JAXA), Tsukuba, Japan

IAC-24.C2.10.5

TESSELLATED ORIGAMI FOR MAXIMIZING POWER GENERATION IN SPACE EXPLORATION

M.omar ALBALBAKI, Blinc- Borderless lab, Amman, Jordan; Subhi Rabi, Blinc- Borderless lab, zarqa, Jordan

IAC-24.C2.10.6

GUIDANCE STRATEGIES TO DEPLOY A LUNAR SATELLITE CONSTELLATION FROM GATEWAY

Edoardo Maria Leonardi, Sapienza University of Rome, Rome, Italy

IAC-24.C2.10.7

NASA PROGRESS ON THE DEVELOPMENT AND QUALIFICATION OF A 12-KW HALL-EFFECT, SOLAR ELECTRIC PROPULSION THRUSTER

Bryan Smith, NASA Glenn Research Center, Cleveland, United States

IAC-24.C2.10.8

TRAJECTORY DESIGN FOR RETRIEVING NEAR-EARTH ASTEROID RESOURCES USING HIGH POWER SOLAR ELECTRIC PROPULSION

Ruida Xie, Sydney, Australia

IAC-24.C2.10.9

NEXT GENERATION ULTRA-LIGHT WEIGHT FLEXIBLE SPACE SOLAR CELL DESIGN

Guler Kocak, SPACELIS Space Technologies, Ankara, Türkiye

IAC-24.C2.10.10

DEEP-SPACE SOLID PROPULSION SYSTEM FOR ORBITING EXPLORATION OF LARGE GRAVITY BODIES BEYOND THE ASTEROID BELT

Shinichiro Tokudome, Japan Aerospace Exploration Agency (JAXA), Sagamiyara, Japan

C3. IAF SPACE POWER SYMPOSIUM

Coordinator(s): John C. Mankins, ARTEMIS Innovation Management Solutions, LLC, United States; Koji Tanaka, Institute of Space and Astronautical Science (ISAS), Japan Aerospace Exploration Agency, Japan

C3.1. Solar Power Satellite

October 15 2024, 10:15 — Space Hall 3

Co-Chair(s): John C. Mankins, ARTEMIS Innovation Management Solutions, LLC, United States; Ming Li, China Academy of Space Technology (CAST), China

Rapporteur(s): Leopold Summerer, European Space Agency (ESA), The Netherlands; Koji Tanaka, Institute of Space and Astronautical Science (ISAS), Japan Aerospace Exploration Agency, Japan

IAC-24.C3.1.1

AN INDEPENDENT INTERNATIONAL ASSESSMENT OF SPACE SOLAR POWER

John C. Mankins, ARTEMIS Innovation Management Solutions, LLC, SANTA MARIA, United States

IAC-24.C3.1.2

VISION FOR THE ECOSYSTEM DEVELOPMENT FOR SSPS

Ming Li, China Academy of Space Technology (CAST), Beijing, China

IAC-24.C3.1.3

THE DEVELOPMENT RESULTS OF THE CURRENT SSPS PROJECT AND THE PROGRESS STATUS OF THE FOLLOW-ON OHISAMA PROJECT FOR THE REALIZATION OF THE OPERATIONAL SSPS

Koichi Ijichi, Japan Space Systems, Tokyo, Japan

IAC-24.C3.1.4

AN OVERVIEW OF THE UK ACTIVITIES ON SPACE-BASED SOLAR POWER

Mamatha Maheshwarappa, UK Space Agency, Swindon, United Kingdom

IAC-24.C3.1.5

SPACE SOLAR POWER - STATE OF THE INDUSTRY REPORT 2024

Kevin Barry, LightBridge Strategic Consulting, Stillwater, United States

IAC-24.C3.1.6

A PROPOSED SPS TECHNOLOGIES DEMONSTRATION MISSION IN SPACE

Xinbin Hou, CAST, Beijing, China

IAC-24.C3.1.7

A SIGNIFICANT UPDATE TO THE HYPER-MODULAR APPROACH TO SPACE SOLAR POWER: SPS-ALPHA MARK-IV

John C. Mankins, ARTEMIS Innovation Management Solutions, LLC, SANTA MARIA, United States

IAC-24.C3.1.8

SPACE SOLAR PHASE 1A PROGRAMME – DEVELOPING SPACE-BASED SOLAR POWER

David Homfray, Space Solar, Harwell, United Kingdom

IAC-24.C3.1.9

AVOIDING GREENWASH IN REPORTING LIFE CYCLE GREENHOUSE GAS EMISSIONS OF SPACE SOLAR POWER: ENVIRONMENTALLY-EXTENDED INPUT-OUTPUT VERSUS PROCESS-BASED APPROACHES

Haroon Oqab, Space Canada Corporation, Kitchener, Canada

IAC-24.C3.1.10

ORBITAL CAPACITY AND MAXIMUM POTENTIAL ENERGY OUTPUT FOR A SPACE-BASED SOLAR POWER CONSTELLATION

Armando Vittorio Atzori, Politecnico di Torino, Turin, Italy

IAC-24.C3.1.11

TOWARDS SUSTAINABLE SPACE-BASED SOLAR POWER: ASSESSING A MODULAR APPROACH INTEGRATING IN-SPACE MANUFACTURING AND SPACE RESOURCES

Florian Kiko, Institute of Space Systems, University of Stuttgart, Stuttgart, Germany

IAC-24.C3.1.12

BRINGING SPACE-BASED SOLAR POWER WITHIN REACH WITH NEXT GENERATION SILICON PHOTOVOLTAICS

Diana Aponte, Solestial, Inc., Tempe, United States

C3.2. Wireless Power Transmission Technologies and Application

October 14 2024, 15:30 — Orange Hall 2

Co-Chair(s): Ming Li, China Academy of Space Technology (CAST), China

Rapporteur(s): Massimiliano Vasile, University of Strathclyde, United Kingdom; Haroon B. Oqab, Space Canada Corporation, Canada; Elias Wilcoski, Naval Research Laboratory, United States; Nobuyuki Kaya, Kobe University, Japan

IAC-24.C3.2.1

RESULTS FROM THE FIRST TEST OF A CONVERSION MODULE FOR SPACE SOLAR IN ORBIT

Paul Jaffe, Naval Research Laboratory, Washington, DC, United States

IAC-24.C3.2.3

DEVELOPMENT OF MISSION SYSTEM FOR WIRELESS POWER TRANSMISSION EXPERIMENTS IN ORBIT

Koji Tanaka, Institute of Space and Astronautical Science (ISAS), Japan Aerospace Exploration Agency, Sagamiyara, Japan

IAC-24.C3.2.4

EFFICIENT AND COST-EFFECTIVE TECHNIQUES FOR WIRELESS POWER TRANSMISSION: A SIMULATION STUDY ON SPACE-BASED SOLAR POWER

Joon-Min Choi, HanSeo University, Daejeon, Korea, Republic of

IAC-24.C3.2.5

HIGH FREQUENCY RECTIFICATION: A DISRUPTIVE SCENARIO FOR WIRELESS POWER TRANSMISSION

Remo Proietti Zaccaria, Italian Institute of Technology (IIT), Genova, Italy

IAC-24.C3.2.6

THE 16U4SBSP MISSION: A SWARM OF CUBESATS FOR DEMONSTRATING SPACE-BASED SOLAR POWER IN EARTH ORBIT
Matteo Madi, Sirin Orbital Systems AG, Zurich, Switzerland

IAC-24.C3.2.7

DEMONSTRATION MISSION DESIGN OF MICROWAVE POWER TRANSMISSION ON LOW EARTH ORBIT
Shi-Wei Dong, China Academy of Space Technology (Xi'an), Xi'an, China

IAC-24.C3.2.8

DEVELOPMENT OF AN ARRAYED RECTENNA SYSTEM TO DEMONSTRATE 1.8KM WIRELESS POWER TRANSMISSION FROM A DEEP SPACE ANTENNA TO AN AEROSTAT
Sang-Hwa Yi, Korea Electrotechnology Research Institute (KERI), Ansan, Korea, Republic of

IAC-24.C3.2.10

WIRELESS POWER TRANSFER: THE WEAK LINK IN SPACE-BASED SOLAR POWER?
Jean-Didier Gayraud, Thales Alenia Space France, Toulouse, France

IAC-24.C3.2.11

3D PRINTING APPLICATIONS FOR LARGE-SCALE CONSTRUCTION IN SPACE
Xiaojun Li, Xi'an, China

C3.3. Advanced Space Power Technologies

October 18 2024, 10:15 — Space Hall 3

Co-Chair(s): Gary Barnhard, Xtraordinary Innovative Space Partnerships, Inc., United States; Lisa May, Lockheed Martin (Space Systems Company), United States

Rapporteur(s): Lee Mason, National Aeronautics and Space Administration (NASA), Glenn Research Center, United States; Koji Tanaka, Institute of Space and Astronautical Science (ISAS), Japan Aerospace Exploration Agency, Japan

IAC-24.C3.3.1

ENABLING UNIVERSAL ACCESS TO POWER ON THE LUNAR SURFACE
Aaron Weaver, National Aeronautics and Space Administration (NASA), Bay Village, United States

IAC-24.C3.3.2

ECSM: EUROPEAN CHARGING STATION FOR THE MOON
Craig Pitcher, Space Applications Services NV/SA, Sint-Stevens-Woluwe, Belgium

IAC-24.C3.3.3

MASS AND POWER SCALING OF HALEU FUELED HEAT-PIPE NUCLEAR REACTORS FOR SELECTED LUNAR BASE SCENARIOS
Riccardo Boccelli, Politecnico di Milano, Cremona, Italy

IAC-24.C3.3.4

NASA'S FISSION SURFACE POWER PROJECT
Lindsay Kaldon, NASA Glenn Research Center, Cleveland, United States

IAC-24.C3.3.5

TOWARDS A FEASIBILITY STUDY FOR A LUNAR SPACE NUCLEAR REACTOR
Carlo Carrelli, ENEA - Italian National Agency for New Technologies, Energy and Sustainable Economic Development, Bologna, Italy

IAC-24.C3.3.6

DESIGN AND TRL5 TEST OF THE REGENERATIVE FUEL CELL SYSTEM (RFCS) FOR LUNAR NIGHT SURVIVAL
Alessandro Bacchini, Thales Alenia Space Italia (TAS-I), Torino, Italy

IAC-24.C3.3.7

HELIUM-COOLED NUCLEAR REACTORS: POWERING THE FUTURE OF DEEP SPACE EXPLORATION
Ugur Guven, UN CSSTEAP, London, United Kingdom

IAC-24.C3.3.8

DEVELOPING A NOVEL HYBRID PERPETUAL MECHANICAL FLYWHEEL ENERGY GENERATOR (HPM-FEG) TO OPTIMIZE ENERGY FOR SUSTAINABLE SPACE MISSIONS.
Adwait Sidhana, University of Petroleum and Energy Studies, Timarni, India

IAC-24.C3.3.9

A NOVEL POWER SYSTEM ARCHITECTURE FOR ALL-ELECTRIC PROPULSION SATELLITE BASED ON MPPT AND S3R HYBRID REGULATION
Jian Li, China Academy of Space Technology (CAST), Beijing, China

IAC-24.C3.3.10

ELECTRICAL POWER SYSTEM DATA MANAGEMENT ALGORITHM FOR TSC-1 SATELLITE
Jirapat Seangyong, National Astronomical Research Institute of Thailand (NARIT), Chiang Mai, Thailand

IAC-24.C3.3.11

(SPACE)**2: A MANAGEMENT OPERATIONS CONTROL ARCHITECTURE APPLICATION FOR EVOLVING SPACE SOLAR POWER SYSTEMS
Gary Barnhard, Xtraordinary Innovative Space Partnerships, Inc., Cabin John, United States

IAC-24.C3.3.12

POWER PRODUCTION IN SPACE WITH CIGS SOLAR CELLS
Andrea Zanin, Research Consortium Hypatia, Roma, Italy

C3.4. Space Power Systems for Ambitious Missions

October 18 2024, 13:45 — Space Hall 3

Co-Chair(s): Massimiliano Vasile, University of Strathclyde, United Kingdom; Lisa May, Lockheed Martin (Space Systems Company), United States

Rapporteur(s): Xinbin Hou, CAST, China; Koji Tanaka, Institute of Space and Astronautical Science (ISAS), Japan Aerospace Exploration Agency, Japan

IAC-24.C3.4.1

BIOVOLT: USE OF HUMAN WASTE THROUGH PYROLYSIS IN FUTURE EXTRATERRESTRIAL SETTLEMENTS, PROVIDING SUSTAINABILITY AND ENERGY AUTONOMY IN SPACE
Christian Andres Acabon Rivera, Universidad de San Carlos de Guatemala, USAC/CUNOC, Santa Lucia Milpas Altas, Guatemala

IAC-24.C3.4.2

OPTIMIZING SPACE-BASED SOLAR POWER: ADVANCED MONITORING AND DIAGNOSTICS STRATEGIES
Prathmesh Barapatre, National Space Society (USA) -Mumbai chapter, Kalyan, India

IAC-24.C3.4.3

LUNAR WIRELESS POWER TRANSMISSION: KEY SUBSYSTEMS FOR A CONSTELLATION OF LASER ENERGY-TRANSMITTING SATELLITES.
Anna Mauro, Politecnico di Torino, Torino, Italy

IAC-24.C3.4.4

META-LUNA: DISRUPTIVE ISRU FOR BUILDING FUTURE SOLAR POWER SATELLITES
Haroon B. Oqab, Space Canada Corporation, Canada

IAC-24.C3.4.5

MICROBIAL FUEL CELLS : A STATE-OF-THE-ART AND REVOLUTIONIZING TECHNOLOGY FOR SUSTAINABLE MANNED SPACE EXPLORATION BEYOND LOW EARTH ORBIT
Anand Nagesh, Grahaa Space, Bengaluru, India

IAC-24.C3.4.6

NEW END-TO-END LASER POWER TRANSFER ARCHITECTURE FOR GLOBAL ENERGY PROVISION ON THE MOON
Paolo Pino, Volta Space Technologies Inc., Montréal, Québec, Canada

IAC-24.C3.4.7

PRODUCING PYRITE BASED SOLAR PANELS FOR THE FUTURE LUNAR HABITAT

Katriin Kristmann, Tallinn University of Technology, Tallinn, Estonia

IAC-24.C3.4.8

SOLAR POWER FOR ON-SITE ORBITAL USE : THE SPACE DATA CENTERS SYSTEM CONCEPT

Gautier DURAND, Thales Alenia Space – France, Cannes La Bocca, France

IAC-24.C3.4.9

DEVELOPMENT OF A SMALL-SCALE ENERGY GENERATION SYSTEM ON MARS USING FORMIC ACID

Paulina Valle, Space Generation Advisory Council (SGAC), Saltillo, Mexico

IAC-24.C3.4.10

ELECTRICAL POWER SYSTEM DESIGN ASPECTS IN THE DEVELOPMENT AND OPERATIONS OF THE EUROPEAN SERVICE MODULE

Arturo Fernandez, European Space Agency (ESA), Noordwijk, The Netherlands

IAC-24.C3.4.11

THE ZEUS CONSTELLATION: PAVING THE WAY TO SUSTAINABILITY ON THE MOON WITH SOLAR POWER SATELLITES

Denis Michael Acker, Institute of Space Systems, University of Stuttgart, Stuttgart, Germany

IAC-24.C3.4.12

AN EVALUATION OF SOLAR ENERGY SYSTEMS FOR DEEP SPACE APPLICATIONS.

Ivy Mayor, Stockholm, Sweden

IAC-24.C3.4.13

AN UNEXPECTED MISSION : SPACE POWER SYSTEMS

Turkey Huseynova, National Aviation Academy - Azerbaijan, Baku, Azerbaijan

C4. IAF SPACE PROPULSION SYMPOSIUM

Coordinator(s): Angelo Cervone, Delft University of Technology (TU Delft), The Netherlands; Elena Toson, Space Generation Advisory Council (SGAC), Italy; Riheng Zheng, Beihang University, China; Christophe Bonhomme, Centre National d'Etudes Spatiales (CNES), France

C4.1. Liquid Propulsion (1)

October 14 2024, 15:30 — Blue Hall 1

Co-Chair(s): Christophe Bonhomme, Centre National d'Etudes Spatiales (CNES), France; Ulrich Gotzig, ArianeGroup, Germany

Rapporteur(s): Annafederica Urbano, ISAE - Institut Supérieur de l'Aéronautique et de l'Espace, France; Vanniyaperumal Narayanan, Indian Space Research Organization (ISRO), India

IAC-24.C4.1.1

PROGRESSES IN APPLIED RESEARCH ON LIQUID ROCKET PROPULSION BY T(H)RUST RESEARCH TEAM AT SAPIENZA UNIVERSITY OF ROME

Francesco Nasuti, Sapienza University of Rome, Rome, Italy

IAC-24.C4.1.2

600 SECONDS OF QUALIFICATION TEST ON A LOW-TOXIC HYPERGOLIC BI-PROPELLANT THRUSTER

Hyeonjun Im, Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea, Republic of

IAC-24.C4.1.3

ESRANGE SPACE CENTER: DEVELOPING A MODERN, FLEXIBLE, AND SUSTAINABLE ROCKET ENGINE TEST SITE

Casper Liavåg, Swedish Space Corporation (SSC), Kiruna, Sweden

IAC-24.C4.1.4

IN-ORBIT DEMONSTRATION OVERVIEW OF A NITROUS-BASED BI-PROPELLANT THRUSTER

Davide Zuin, Politecnico di Milano, Milan, Italy

IAC-24.C4.1.5

LUMEN: LIQUID UPPER STAGE DEMONSTRATOR ENGINE - A VERSATILE TEST BED FOR ROCKET ENGINE COMPONENTS: HOT-FIRE TEST RESULTS

Tobias Traudt, DLR (German Aerospace Center), Hardthausen, Germany

IAC-24.C4.1.6

ENLIGHTEN PROJECT: NEW KEY TECHNOLOGIES FOR FUTURE LAUNCHERS

Antonio Accettura, AZO GmbH, Weßling, Germany

IAC-24.C4.1.7

STUDY ON MULTI-MODE SPACE PROPULSION OF CH₄/N₂O PROPELLANT

tae young Lee, Chosun University, Dong-gu, Gwangju, Korea, Republic of

IAC-24.C4.1.8

DESIGN AND DEVELOPMENT OF A GREEN ENGINE FOR IN-ORBIT SERVICING AND SPACE LOGISTICS APPLICATIONS

Roberto Bertacin, Italian Space Agency (ASI), Rome, Italy

IAC-24.C4.1.9

EFFECT OF FUEL INJECTION TEMPERATURE ON THE STABILITY OF LOX-METHANE SUPERCRITICAL COMBUSTION

Abhishek Sharma, Indian Space Research Organization (ISRO), THIRUVANANTHAPURAM, India

IAC-24.C4.1.10

DESIGN AND DEVELOPMENT OF THE LARGEST STUDENT-BUILT LIQUID ROCKET ENGINE FOR SUBORBITAL FLIGHT: A COMPREHENSIVE OVERVIEW AND LESSONS LEARNED

Oleg Khalimonov, Concordia University, Westmount, Canada

IAC-24.C4.1.11

ON DEVELOPMENT OF GREEN STORABLE LIQUID ROCKET ENGINE WITH THRUST VARIATION

Dawid Cieslinski, Łukasiewicz Research Network – Institute of Aviation (ILOT), Warsaw, Poland

IAC-24.C4.1.12

CAPACITIES AND DEVELOPMENT PROSPECTS OF THE LLEIDA-ALGUAIRE AIRPORT TESTING FACILITIES FOR ROCKET ENGINES, SUB-COMPONENTS AND PROTOTYPES

Lluís Montilla Rodríguez, Institut d'Estudis Espacials de Catalunya (IEEC), Castelldefels, Spain

C4.2. Liquid Propulsion (2)

October 16 2024, 10:15 — Blue Hall 1

Co-Chair(s): Angelo Cervone, Delft University of Technology (TU Delft), The Netherlands; Annafederica Urbano, ISAE - Institut Supérieur de l'Aéronautique et de l'Espace, France

Rapporteur(s): Christian Bach, Technische Universität Dresden (DTU), Germany; Ulrich Gotzig, ArianeGroup, Germany; Ozan Kara, Technology Innovation Institute (TII), United Arab Emirates

IAC-24.C4.2.1

H-IMP: A NEW PROPULSION TEST FACILITY FOR LOX/LCH₄ LIQUID ROCKET ENGINES WITH ADVANCED OPTICS/LASER DIAGNOSTICS

Federico De Filippis, CIRA Italian Aerospace Research Centre, Capua, Italy

IAC-24.C4.2.2

SUBSYSTEM AND SYSTEM TEST RESULTS OF THE 4-TON CLASS ROCKET ENGINE FOR ROCKET STARTUPS

Ryoma Yamashiro, Japan Aerospace Exploration Agency (JAXA), Tokyo, Japan

IAC-24.C4.2.3

ENHANCING PROPULSION EFFICIENCY IN THE DEVELOPMENT OF ITALY'S FIRST PRIVATE LAUNCHER: THE ROLE OF COAXIAL SWIRL INJECTOR DESIGN

Davide Cozzi, Sidereus Space Dynamics, Nerviano, Italy

IAC-24.C4.2.4

PROPULSION SYSTEM TECHNOLOGY TRADES FOR STARLAB SPACE STATION FOR UNLEASHING THE NEXT GENERATION OF SPACE DESTINATIONS

Markus Jaeger, Airbus Defence & Space, Space Systems, Bremen, Germany

IAC-24.C4.2.5

COMPARISON OF COMBUSTION CHARACTERISTICS IN VARIOUS SPRAY NOZZLE INJECTOR GEOMETRIES FOR LOW-TOXIC HYPERGOLIC THRUSTER

Hyeonjun Im, Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea, Republic of

IAC-24.C4.2.7

PRESSURE MEASUREMENT OVER TRUNCATED LINEAR AEROSPIKE NOZZLE IN DIFFERENTIAL THROTTLING CONFIGURATION

JEHANGIR HASSAN, Politecnico di Torino, Torino, Italy

IAC-24.C4.2.8

FLIGHT QUALIFICATION LOGIC OF ADDITIVE MANUFACTURED CRITICAL PART IN THE ARIANE 6 VINCI ENGINE

Li Forsberg, GKN Aerospace Engine Systems, Trollhättan, Sweden

IAC-24.C4.2.9

STUDIES ON THE ADDITIVE FABRICATION CONCEPT FOR FUTURE LAUNCHER ENGINE NOZZLE EXTENSION DESIGN AND MANUFACTURING

Christo Dordlofva, GKN Aerospace Engine Systems, Trollhättan, Sweden

IAC-24.C4.2.10

AUTOMATION OF ENGINE MEDIUM SUBSTITUTION FOR CRYOGENIC ENGINES TESTING IN HIGH ALTITUDE TEST BAY VINOD P, Indian Space Research Organization (ISRO), Hyderabad, India

IAC-24.C4.2.11

CFD PERFORMANCE PREDICTION OF CRYOGENIC HIGH-SPEED BEARINGS FOR REUSABLE PUMP-FED LIQUID ROCKET ENGINES

Kento Sakai, Waseda University, Tokyo, Japan

IAC-24.C4.2.12

RESEARCH OF REUSABLE LOX/RP-1 PROPULSION SYSTEM FIRING TEST

Sheng Zhao, China Academy of Launch Vehicle Technology (CALT), Beijing, China

C4.3. Solid and Hybrid Propulsion (1)

October 15 2024, 10:15 — Blue Hall 1

Co-Chair(s): Yen-Sen Chen, American Institute of Aeronautics and Astronautics (AIAA), United States; Christian Bach, Technische Universität Dresden (DTU), Germany

Rapporteur(s): Adam Okninski, Łukasiewicz Research Network – Institute of Aviation (ILOT), Poland; Yuji Saito, Tohoku University, Japan; Ozan Kara, Technology Innovation Institute (TII), United Arab Emirates

IAC-24.C4.3.1

PRELIMINARY DESIGN AND FLIGHT PERFORMANCE OF PARAFFIN/N₂O SOUNDING ROCKET PROGRAM IN THE UAE

Ozan Kara, Technology Innovation Institute (TII), Masdar City, United Arab Emirates

IAC-24.C4.3.2

ANALYTICAL AND EXPERIMENTAL INVESTIGATION OF A H₂O₂-HDPE HYBRID AUTOPHAGE ROCKET ENGINE

Martin Gros, Toulouse, France

IAC-24.C4.3.4

IMPACT ASSESSMENT OF LONG TERM VERTICAL STORAGE ON BALLISTIC PERFORMANCE AND VALIDATION THROUGH HOT TEST OF SOLID ROCKET BOOSTER

Arun Raj, Vikram Sarabhai Space Centre (VSSC), TRIVANDRUM, India

IAC-24.C4.3.5

RESEARCH AND DEVELOPMENT OF HYBRID THRUSTER FOR ELS-R100: MISSION CONCEPT & FIRING TEST RESULTS

Yuji Saito, Tohoku University, Sendai, Japan

IAC-24.C4.3.6

INSIGHTS INTO MOUETTE HYBRID ROCKET SLAB BURNER TESTING ACTIVITIES

Olexiy Shynkarenko, University of Brasilia, Brasilia, Brazil

IAC-24.C4.3.7

NUMERICAL MODELING OF SCALE EFFECTS IN PARAFFIN-HYDROGEN PEROXIDE HYBRID ROCKETS WITH SWIRL INJECTION

Alessio Sereno, Sapienza University of Rome, Rome, Italy

IAC-24.C4.3.8

EXPERIMENTAL VERIFICATION OF ADVANCED HYBRIDS PERFORMANCE AND SCALING FACTORS

Manuel Stella, T4i, Padua, Italy

IAC-24.C4.3.9

EXPERIMENTAL STUDY OF WATER AND ALUMINUM COMBUSTION AIMING FOR A NOVEL PULSED-CHEMICAL MICROPROPULSION SYSTEM

Masaya Murahara, ZHAW – Zurich University of Applied Sciences, Zell, Switzerland

IAC-24.C4.3.10

RAVEN: RESULTS AND INSIGHTS FROM THE FIRST TEST CAMPAIGN OF A HYBRID ROCKET ENGINE

Mike Wettke, Luleå University of Technology, Kiruna, Sweden

IAC-24.C4.3.11

PROPULSIVE AND COMBUSTION MODELLING OF SABRE ENGINE IN ROCKET MODE TO SUPPORT NOX EMISSIONS ESTIMATION IN CONCEPTUAL DESIGN

Fabrizio Borgna, Politecnico di Torino, Turin, Italy

IAC-24.C4.3.12

AUTOMATIC OUTLIER DETECTION FOR HYBRID ROCKET STATIC FIRING TESTS

Oliver Assenmacher, German Aerospace Center (DLR), Cologne, Germany

C4.4. Solid and Hybrid Propulsion (2)

October 16 2024, 10:15 — Yellow Hall 2

Co-Chair(s): Didier Boury, ArianeGroup SAS, France; Yuji Saito, Tohoku University, Japan

Rapporteur(s): Jean-Claude Traineau, Office National d'Études et de Recherches Aéronautiques (ONERA), France; Ozan Kara, Technology Innovation Institute (TII), United Arab Emirates; Arif Karabeyoglu, Koc University, Türkiye

IAC-24.C4.4.1

KEYNOTE: HYBRID PROPULSION SYSTEM PRACTICES AND SAFETY CONSIDERATIONS BOTH FOR LAUNCH VEHICLES AND IN-SPACE MISSIONS

Ozan Kara, Technology Innovation Institute (TII), Masdar City, United Arab Emirates

IAC-24.C4.4.2

NOZZLE EROSION AVOIDANCE THROUGH REGENERATIVE COOLING SYSTEMS IN HYBRID ROCKET ENGINES: EXPERIMENTAL CAMPAIGN AND NUMERICAL MODELING

Riccardo Cambertoni, Politecnico di Torino, San Severino Marche, Italy

IAC-24.C4.4.3

A NEW CATALYTIC CHAMBER CONCEPT FOR MULTI-PHASE INJECTION OF HYDROGEN PEROXIDE

Nora Bierwagen, DLR (German Aerospace Center), Faßberg, Germany

IAC-24.C4.4.4

EXPERIMENTAL INVESTIGATION OF SWIRL OXIDIZER INJECTOR EFFECT ON 3D PRINTED ABS HYBRID ROCKET FUEL REGRESSION RATE

ANWER HASHISH, Military Technical College, Cairo, Egypt

IAC-24.C4.4.6

THE THREE-DIMENSIONAL DYNAMIC NUMERICAL SIMULATION OF STAR-SHAPED GRAINS IN HYBRID ROCKET MOTORS

XIAOTING NIU, Beihang University (BUAA), Beijing, China

IAC-24.C4.4.7

SCALABLE HYBRID ROCKET SYSTEMS FOR AGILE AND AFFORDABLE IN-SPACE PROPULSION

Toku Sakai, Letara Ltd., Tokyo, Japan

IAC-24.C4.4.8

GREEN SOLID FUELS WITH ENHANCED MECHANICAL PROPERTIES: USE OF SUSTAINABLE WAXES AND SCALE-UP ANALYSIS OF ARMORED GRAINS.

Ch Paravan, Politecnico di Milano, Milan, Italy

IAC-24.C4.4.9

SOLID FUEL ANALYSIS IN HYBRID ROCKET ENGINE USING IMAGE PROCESSING

Felipe Fernandes, Universidade de Brasília, São Paulo, Brazil

IAC-24.C4.4.10

EXPERIMENTAL INVESTIGATION OF A 10 KN CLASS HYDROGEN PEROXIDE - PARAFFIN WAX HYBRID MOTOR DEMONSTRATOR

Lucia Zeni, T4i, Tesero, Italy

IAC-24.C4.4.11

IMPROVING ALUMINA-CAP CHARACTERISATION IN ALUMINIZED SOLID-ROCKET MOTORS WITH COMPUTER VISION

Andrea Sportillo, Office National d'Etudes et de Recherches Aéropatiales (ONERA), Palaiseau, France

IAC-24.C4.4.13

CHALLENGES IN VERIFICATION PROCESS OF THE SOLID ROCKET MOTOR FOR DIRECT DEORBITATION ENGINEERING MODEL

Arthur Pazik, Łukasiewicz Research Network – Institute of Aviation (ILOT), Warsaw, Poland

C4.5. Electric Propulsion (1)

October 15 2024, 15:00 — Blue Hall 1

Co-Chair(s): Jean-Claude Traineau, Office National d'Etudes et de Recherches Aéropatiales (ONERA), France; Andrei Shumeiko, Bauman Moscow State Technical University, Russian Federation

Rapporteur(s): Marco Di Clemente, Italian Space Agency (ASI), Italy; Vincent Guyon, SAFRAN, France

IAC-24.C4.5.1

KEYNOTE: A LIFETIME WORTH OF SPACE: IN MEMORY OF PROF. MARIANO ANDRENUCCI

Giorgio Saccoccia, European Space Agency (ESA), Paris, France

IAC-24.C4.5.2

DEVELOPMENT AND OPERATION DEMONSTRATION OF PULSED PLASMA THRUSTER FOR 2U-CUBESAT

Yoshihiro Kajimura, National Institute of Technology (Japan), Akashi-city, Hyogo, Japan

IAC-24.C4.5.3

PERFORMANCE CHARACTERIZATION OF THE FIRST ECLIPSE THRUSTER PROTOTYPE

Laura Bettiol, FOTEC Forschungs- und Technologietransfer GmbH, Wiener Neustadt, Austria

IAC-24.C4.5.4

EFFECT OF SPACECRAFT CHARGING ON PERFORMANCE OF ION ELECTROSPRAY PROPULSION SYSTEMS

Saba Shaik, Massachusetts Institute of Technology (MIT), Cambridge, United States

IAC-24.C4.5.5

IN-ORBIT DEMONSTRATION OF BI-DIRECTIONAL ELECTRODELESS PLASMA THRUSTER

Andrei Shumeiko, Bauman Moscow State Technical University, Krasnogorsk, Russian Federation

IAC-24.C4.5.6

INTERMITTENT ELECTRIC PROPULSION USING A MICROWAVE PLASMA THRUSTER

Jens Schmidt, DLR (German Aerospace Center), Bielefeld, Germany

IAC-24.C4.5.7

TRANSFORMING ELECTRIC PROPULSION WITH DIGITAL TWINS: GROUNDBREAKING PROMISES AND FOUNDATIONAL GAPS

Farbod Faraji, Imperial College London, London, United Kingdom

IAC-24.C4.5.8

MAGDRIVE: DEVELOPING NEXT GENERATION ELECTRIC PROPULSION FOR EVOLVING SPACE ENVIRONMENTS AND MARKETS

Savva Theocharous, Didcot, United Kingdom

IAC-24.C4.5.9

DEVELOPMENT AND PERFORMANCE ANALYSIS OF A MINIATURIZED MICRO ION THRUSTER FOR CUBESAT APPLICATION

Ahmed Altunajji, Sharjah Academy for Astronomy, Space Sciences and Technology (SAASST), Sharjah, United Arab Emirates

IAC-24.C4.5.10

INTEGRATED MODULAR POWER UNIT FOR LIGHTWEIGHT AND SCALABLE ELECTRIC PROPULSION (IMPULSE)

Jan Walter Schroeder, CisLunar Industries, Sötern, Germany

IAC-24.C4.5.11

GASDYNAMIC EXPANSION MODELS AND PRELIMINARY HEAT TRANSFER AND THERMAL ANALYSIS FOR THE NOZZLE OF A MICROWAVE ELECTROTHERMAL THRUSTER USING DIFFERENT PROPELLANTS

Michele Nava, Politecnico di Milano, Milan, Italy

C4.6. Electric Propulsion (2)

October 16 2024, 15:00 — Blue Hall 1

Co-Chair(s): Marco Di Clemente, Italian Space Agency (ASI), Italy; Nicoletta Wagner, European Space Agency (ESA), France

Rapporteur(s): Angelo Cervone, Delft University of Technology (TU Delft), The Netherlands; Heji Huang, Institute of Mechanics, Chinese Academy of Sciences, China

IAC-24.C4.6.1

A MIXED VERIFICATION APPROACH FOR AIR-BREATHING ELECTRIC PROPULSION

Tommaso Andreussi, Scuola Superiore Sant'Anna, Pisa, Italy

IAC-24.C4.6.2 (unconfirmed)

DEVELOPMENT OF AN APPLIED FIELD MAGNETO-PLASMA-DYNAMIC (AF-MDP) THRUSTER WITH A HIGH TEMPERATURE SUPERCONDUCTING MAGNET

Randy Pollock, Victoria University of Wellington, Lower Hutt, New Zealand

IAC-24.C4.6.3

ADVANCED COMPUTATIONAL AND MACHINE-LEARNING TOOLS TO ENABLE PREDICTIVE DIGITAL TWINS FOR ELECTRIC PROPULSION

Farbod Faraji, Imperial College London, London, United Kingdom

IAC-24.C4.6.4

BOOST: ADVANCE IODINE ELECTRIC PROPULSION FOR SMALLSATS AND ON-ORBIT SERVICING

Fabrizio Ponti, Alma Mater Studiorum - University of Bologna, Forlì, Italy

IAC-24.C4.6.6

HT100 ELECTRIC PROPULSION FLIGHT EXPERIENCE ON MICROHETSAT

Stefan Gregucci, Sitael Spa, Pisa, Italy

IAC-24.C4.6.7

IN-HOUSE DEVELOPMENT OF GRID OPTICS FOR MINIATURIZED MICRO ION THRUSTER

Ahmed Altunaiji, Sharjah Academy for Astronomy, Space Sciences and Technology (SAASST), Sharjah, United Arab Emirates

IAC-24.C4.6.8

MINIATURIZED ELECTRIC PROPULSION SYSTEM BASED ON HIGHLY EFFICIENT HALL-EFFECT THRUSTER TECHNOLOGY

Merve Balaban, Berlin Space Consortium GmbH, Berlin, Germany

IAC-24.C4.6.9

PERFORMANCE DEPENDENCE OF AN INDUCTIVE RADIO-FREQUENCY PLASMA THRUSTER WITH A RADIAL MAGNETIC FIELD ON ACCELERATION FREQUENCY

Senior Shimhanda, University of Tokyo, Kashiwa, Japan

IAC-24.C4.6.10

SITAE STATE-OF-THE-ART HIGH-POWER ELECTRIC PROPULSION

Stefan Gregucci, Sitael Spa, Pisa, Italy

IAC-24.C4.6.11

EXPERIMENTAL ACTIVITIES ON LOW POWER ELECTRIC THRUSTERS AT CIRA

Angelo Romano, CIRA Italian Aerospace Research Center, Capua, Capua, Italy

IAC-24.C4.6.12

SOLAR ELECTRIC PROPULSION ISOTHERMAL PERFORMANCE & PRESSURE BLOWDOWN MODEL

Mariam Alhammadi, Technology Innovation Institute (TII), Abu Dhabi, United Arab Emirates

C4.7. Hypersonic Air-breathing and Combined Cycle Propulsion, and Hypersonic Vehicle

October 17 2024, 10:15 — Blue Hall 1

Co-Chair(s): Heji Huang, Institute of Mechanics, Chinese Academy of Sciences, China; Jean-Claude Traineau, Office National d'Etudes et de Recherches Aéronautiques (ONERA), France

Rapporteur(s): Didier Boury, ArianeGroup SAS, France; Riheng Zheng, Beihang University, China

IAC-24.C4.7.1

DEVELOPMENT STATUS OF THE AIR TURBO ROCKET ENGINE "ATRIUM"

Hiroaki Kobayashi, Japan Aerospace Exploration Agency (JAXA), Kanagawa, Japan

IAC-24.C4.7.2

ADVANCES IN MIXING AND COMBUSTION MODELLING IN SUPERSONIC FLOWS

Sasi Kiran Palateerdham, University of Rome "La Sapienza", Roma RM, Italy

IAC-24.C4.7.3

MULTI-OBJECTIVE DESIGN OPTIMIZATION OF FUEL INJECTION USING FLEXIBLE GEOMETRY FOR SCRAMJET-POWERED ASCENT FLIGHT VIA SURROGATE-ASSISTED EVOLUTIONARY ALGORITHMS

Mehmet AKSAY, Kyushu University, Fukuoka, Japan

IAC-24.C4.7.4

EXPERIMENTAL STUDY ON THE COMBUSTION CHARACTERISTICS OF MULTI-PINTLE INJECTORS FOR ANNULAR COMBUSTOR

Yaming Zhao, School of Astronautics, Beihang University, Beijing, China

IAC-24.C4.7.5

PHYSICAL INSIGHTS INTO CAVITY FLOWFIELD IN SCRAMJET COMBUSTOR VIA DEEP LEARNING

Chihiro Fujio, Kyushu University, Fukuoka, Japan

IAC-24.C4.7.6

TECHNOLOGICAL CHALLENGES OF THE DESIGN OF A SCRAMJET HYPERSONIC VEHICLE AND ITS FLIGHT MISSION

Oreste Russo, CIRA Italian Aerospace Research Centre, Capua, Italy

IAC-24.C4.7.8

INTEGRATED FLOWPATH MATCHING DESIGN FOR WIDE-ENVELOPE AIR-BREATHING LAUNCH VEHICLES WITH RBCC ENGINES

Jianlei Wang, Northwestern Polytechnical University, Xi'an, China

IAC-24.C4.7.9

STUDY ON LOW-COST PREDICTION OF THE CAVITY FLAME HOLDER FLOW FIELD IN A SCRAMJET AND ITS APPLICATION TO DESIGN OPTIMIZATION

Kotaro Iguchi, Kanazawa Institute of Technology, Ishikawa, Japan

IAC-24.C4.7.10

DEVELOPMENT OF TURBO JET ENGINE HEAT EXCHANGER CODE FOR TBCC USING TIME-DIMENSIONAL ADDED Q1D MODEL

BOYEON KHIM, Korea Aerospace Research Institute (KARI), Deajeon, Korea, Republic of

IAC-24.C4.7.11

COMBINED AIR-BREATHING AND ROCKET PROPULSION SYSTEM TRAJECTORY ANALYSIS FOR DELIVERING PAYLOAD TO SPACE

Pradeep Dass, edmonton, Canada

IAC-24.C4.7.12

PROPULSIVE AND COMBUSTION MODELLING OF SABRE ENGINE IN AIR-BREATHING MODE TO SUPPORT NOX EMISSIONS ESTIMATION IN CONCEPTUAL DESIGN

Fabrizio Borgna, Politecnico di Torino, Turin, Italy

C4.8-B4.5A. Joint Session between IAA and IAF for Small Satellite Propulsion Systems

October 17 2024, 15:00 — Blue Hall 1

Co-Chair(s): Arnau Pons Lorente, Space Generation Advisory Council (SGAC), United States; Jeff Emdee, The Aerospace Corporation, United States

Rapporteur(s): Elena Toson, T4i, Italy; Angelo Cervone, Delft University of Technology (TU Delft), The Netherlands

IAC-24.C4.8-B4.5A.1

DEVELOPMENT OF A BI-PROPELLANT HTP - PROPANE PROPULSION SUBSYSTEM FOR EARS (EUROPEAN ADVANCED REUSABLE SATELLITE) PROGRAM.

Lorenzo Gerolin, T4i, Monselice, Italy

IAC-24.C4.8-B4.5A.2

IN-ORBIT DEMONSTRATION OF A STEAM-POWERED PROPULSION SYSTEM

Marco Pavan, Birmingham, United Kingdom

IAC-24.C4.8-B4.5A.3

ELECTROMAGNETIC AND EXTENDED VIBRATIONAL QUALIFICATION CAMPAIGN FOR AN IMPROVED CENTRE-TRIGGERED PULSED CATHODIC ARC THRUSTER

Patrick Neumann, Adelaide, Australia

IAC-24.C4.8-B4.5A.4

POWDERIZATION OF COMBUSTION PRODUCTS IN MAGNESIUM-WIRE AND WATER MICROPROPULSION SYSTEM: PROOF OF CONCEPT

Minwoo Han, The University of TOKYO, Graduate school, Kashiwa City, Japan

IAC-24.C4.8-B4.5A.5

RESEARCH AND IN-ORBIT VERIFICATION ON THE HAN PROPULSION SYSTEM OF DALIAN-1 LIANLI SATELLITE

Xiaozhou Yu, Dalian University of Technology (DUT), Dalian, China

IAC-24.C4.8-B4.5A.6

THE FULLY WIRELESS SIX-DEGREE-OF-FREEDOM THRUST MEASUREMENT FOR CUBESAT CLASS PROPULSION SYSTEMS

Ten Arai, The University of TOKYO, Graduate school, Bunkyo city, Japan

IAC-24.C4.8-B4.5A.7

IN-FLIGHT PERFORMANCE OF WATER RESISITOJET THRUSTER AQUARIUS; FROM LONG-TERM TREND TO SPACE ENVIRONMENTAL EFFECT

Aoma Fujimori, Department of Engineering, The University of Tokyo, Bunkyo, Tokyo, Japan

IAC-24.C4.8-B4.5A.8

LESSONS LEARNED FROM THE INITIAL OPERATIONS PHASE IN THE NANOFF CUBESAT FORMATION FLIGHT MISSION

Debdeep Roychowdhury, Technische Universität Berlin, Berlin, Germany

IAC-24.C4.8-B4.5A.9

ACTIVELY PULSED DUAL HEATING IN VAPORIZING LIQUID MICROTHRUSTERS: AN INTEGRATED ANALYSIS COMBINING NUMERICAL SIMULATIONS AND EXPERIMENTS.

Angelica Maria Toscano, Università del Salento, Lecce, Italy

IAC-24.C4.8-B4.5A.10

DEVELOPMENT OF A 3D-PRINTED COLD GAS PROPULSION SYSTEM FOR CUBESATS

Victor Joseph Ochave, Philippine Space Agency, Quezon City, The Philippines

IAC-24.C4.8-B4.5A.11

FUEL CHARACTERIZATION, PERFORMANCE ASSESSMENT AND THERMAL ANALYSIS OF A HYDROGEN PEROXIDE-BASED HYBRID THRUSTER FOR CUBESATS

Riccardo Guida, Scuola Superiore Meridionale, Napoli, Italy

IAC-24.C4.8-B4.5A.12

PERFORMANCE ANALYSIS OF DIFFERENT AIR INTAKES FOR ABEP IN VLEO AND EVALUATION OF SCALE EFFECTS

Antonio Sannino, Università degli studi di Napoli Federico II, Dipartimento di Ingegneria Aerospaziale, Napoli, Italy

C4.9. Disruptive Propulsion Concepts for Enabling New Missions

October 18 2024, 10:15 — Blue Hall 1

Co-Chair(s): Elena Toson, T4i, Italy; Christian Bach, Technische Universität Dresden (DTU), Germany

Rapporteur(s): Saroj Kumar, Propulsion Research Center, University of Alabama in Huntsville, United States; Arnau Pons Lorente, Space Generation Advisory Council (SGAC), United States

IAC-24.C4.9.1

DEVELOPMENT OF TRI-PROPELLANT ROCKET ENGINE FOR REUSABLE SSTS

Tadayoshi Shoyama, Innovative Space Carrier Inc., Tokyo, Japan

IAC-24.C4.9.2

EXPERIMENTAL STUDIES FOR THE FEASIBILITY OF A GREEN HYDROLYTIC PROPULSION SYSTEM FOR AOCs

Mirko Bardin, Politecnico di Milano, Vicenza, Italy

IAC-24.C4.9.3

DESIGN AND EXPERIMENTAL RESULTS OF A HYDROLYTIC \\\nPROPULSION SYSTEM FOR IN-SPACE APPLICATIONS

Sergio Paris, Politecnico di Milano, Milano, Italy

IAC-24.C4.9.4

GATEWAY TO THE FUTURE: LESSONS LEARNED IN DEVELOPMENT OF THE REFUELING SYSTEMS FOR NASA'S FIRST LUNAR SPACE STATION

Christopher Radke, NASA, Houston, United States

IAC-24.C4.9.6

FEASIBILITY STUDY OF A MISSION TO SEDNA - NUCLEAR PROPULSION AND ADVANCED SOLAR SAILING CONCEPTS

Elena Ancona, Politecnico di Bari, Monopoli, Italy

IAC-24.C4.9.7

SOLAR SAIL PROPULSION - READY FOR MISSION IMPLEMENTATION

Les Johnson, National Aeronautics and Space Administration (NASA), Marshall Space Flight Center, Huntsville, AL, United States

IAC-24.C4.9.8

CONCEPTUAL DESIGN AND FEASIBILITY ANALYSIS OF MANEUVERABLE SOLAR-SAILED SMALL SATELLITES FOR DEEP-SPACE EXPLORATION AND COMMUNICATION

Abishek Shrestha, Space Generation Advisory Council (SGAC), Campsie, NSW, Australia

IAC-24.C4.9.9

HOW ATMOSPHERE BREATHING ELECTRIC PROPULSION IMPACTS SPACECRAFT GEOMETRIC DESIGN & LAYOUT

Benjamin Kent, University of Manchester, Porthcawl, United Kingdom

IAC-24.C4.9.11

IMPACT OF PLASMA DYNAMICS ON ELECTRODYNAMIC-TETHER CURRENT COLLECTION: EXPERIMENTAL ANALYSIS AND COMPARATIVE STUDY

Shagun Aggarwal, University of New South Wales, Sydney, Australia

IAC-24.C4.9.12

OPTIMIZATION OF SOLAR SAIL TRAJECTORIES UNDER UNCERTAINTIES VIA DEEP REINFORCEMENT LEARNING

Christian Bianchi, University of Pisa, Pisa, Italy

C4.10-C3.5. Joint Session on Nuclear Power and Propulsion Systems, and Propellantless Propulsion

October 18 2024, 13:45 — Blue Hall 1

Co-Chair(s): Leopold Summerer, ESA - European Space Agency, The Netherlands; Saroj Kumar, Propulsion Research Center, University of Alabama in Huntsville, United States; Lisa May, Lockheed Martin (Space Systems Company), United States

Rapporteur(s): Markus Jaeger, Airbus Defence & Space, Space Systems, Germany; Yen-Sen Chen, American Institute of Aeronautics and Astronautics (AIAA), United States

IAC-24.C4.10-C3.5.1

KEYNOTE: DIELECTROPHORESIS AS A MEANS FOR RECYCLING ENTRAINED URANIUM FOR IMPROVED SPECIFIC IMPULSE IN LIQUID CORE NUCLEAR ROCKETS

Jason Cassibry, University of Alabama in Huntsville, Huntsville, United States

IAC-24.C4.10-C3.5.2

UNITED KINGDOM'S CONTRIBUTIONS TO ENHANCING NUCLEAR POWER SYSTEMS FOR SPACE EXPLORATION

Mauro Augelli, UK Space Agency, Harwell, United Kingdom

IAC-24.C4.10-C3.5.3

A COMPREHENSIVE METHODOLOGY FOR DESIGNING A NUCLEAR ELECTRIC PROPULSION (NEP) CONCEPT

Pablo Rubiolo, CNRS-INPG-UJF, Grenoble, France

IAC-24.C4.10-C3.5.4

MARKET STUDY ON NUCLEAR ELECTRIC PROPULSION FOR SPACE APPLICATIONS

Pablo Rubiolo, CNRS-INPG-UJF, Grenoble, France

IAC-24.C4.10-C3.5.5

MODELLING AND OPTIMISATION OF HIGH TEMPERATURES HEAT PIPE RADIATORS FOR NUCLEAR ELECTRICAL PROPULSION (NEP) APPLICATIONS

Alexandre Chappuis, Ecole Polytechnique Fédérale de Lausanne (EPFL), La Croix (Lutry), Switzerland

IAC-24.C4.10-C3.5.6

OPTIMIZING SOLAR SAIL HYBRID SYSTEMS FOR INTERSTELLAR EXPLORATION

RAM ROHIT VANNARTH, BMS College of Engineering, Bengaluru, BENGALURU, India

IAC-24.C4.10-C3.5.7

RECENT PROGRESS ON NUCLEAR ROCKET FUEL TESTING CAPABILITIES IN THE MIT REACTOR FACILITY

Roger X. Lenard, LPS, Edgewood, NM, United States

IAC-24.C4.10-C3.5.8

ADDRESSING CHALLENGES TO ENGINEERING FEASIBILITY OF THE CENTRIFUGAL NUCLEAR THERMAL ROCKET

Dale Thomas, University of Alabama in Huntsville, Huntsville, United States

IAC-24.C4.10-C3.5.9

PROTOTYPIC CENTRIFUGAL FUEL ELEMENT TEST STAND FOR EVALUATING CENTRIFUGAL NUCLEAR THERMAL PROPULSION ENGINE COMPONENTS

Spencer Christian, The Ohio State University College of Engineering, Dayton, United States

IAC-24.C4.10-C3.5.10

ANALYSIS OF NEWLY DESIGNED NTP PARTICLE BED REACTOR COOLANT CHANNEL PERFORMANCE ENHANCED BY AMMONIA DECOMPOSITION

Elia Puccinelli, University of Pisa, Massarosa, Italy

IAC-24.C4.10-C3.5.11

A COMPREHENSIVE STUDY OF SOLAR AND NUCLEAR HYBRID POWER SYSTEMS IN SPACECRAFT DESIGN FOR DEEP SPACE MISSIONS

Ivy Mayor, Stockholm, Sweden

IAC-24.C4.10-C3.5.12

NUCLEAR PROPULSION TECHNOLOGY FOR SATELLITE APPLICATIONS HISTORICAL OVERVIEW AND CURRENT DEVELOPMENTS

Rebecca Sulpizi, Politecnico di Milano, Antrdoco, Italy

IAC-24.C4.10-C3.5.13

IMPACT MODELLING FOR THE ESA RADIOISOTOPE POWER SYSTEMS

Alessandra Barco, University of Leicester, Leicester, United Kingdom

D1. IAF SPACE SYSTEMS SYMPOSIUM

Coordinator(s): Reinhold Bertrand, European Space Agency (ESA), Germany; Jill Prince, National Aeronautics and Space Administration (NASA), United States; Tibor S. Balint, Jet Propulsion Laboratory, United States

D1.1. Innovative Systems toward Future Architectures

October 14 2024, 15:30 — Orange Hall 3

Co-Chair(s): Xavier Roser, Thales Alenia Space France, France; Peter Dieleman, Netherlands Aerospace Centre (NLR), The Netherlands

Rapporteur(s): Mamatha Maheshwarappa, UK Space Agency, United Kingdom; Hui Du, Institute of Spacecraft System Engineering, China Academy of Space Technology (CAST), China

IAC-24.D1.1.1

SPACE AND THE CIRCULAR ECONOMY: EXPLORING EXPERT PERCEPTIONS

Jonas Bahlmann, University of Luxembourg, Belvaux, Luxembourg

IAC-24.D1.1.2

EUROPEAN ROBOTICS FOR SPACE ECOSYSTEM - EU-RISE

Christophe FIGUS, Airbus Defence and Space SAS, Toulouse, France

IAC-24.D1.1.4

ROBOTIC TECHNOLOGIES TOWARDS A SUSTAINABLE ON-ORBIT SERVICING ECOSYSTEM

Fernando Gandía Abellán, GMV Aerospace & Defence SAU, Spain, Tres Cantos, Spain

IAC-24.D1.1.5

SYSTEM DESIGN STUDIES FOR THE EUROPEAN ADVANCED REUSABLE SATELLITE (EARS) ARCHITECTURE

Francesco Barato, University of Padova - DII/CISAS, Padova (PD), Italy

IAC-24.D1.1.6

EROSS-IOD GNC FOR A VERSATILE SERVICING DEMONSTRATION APPLICABLE TO PREPARED AND UNPREPARED CLIENT SPACECRAFT

Vincent DUBANCHET, Thales Alenia Space France, Cannes la Bocca, France

IAC-24.D1.1.7

ENABLING A SPACE CIRCULAR ECONOMY BY 2050

Antonio Caiazza, ESA - European Space Agency, Leiden, The Netherlands

IAC-24.D1.1.8

IN-ORBIT SPACE LAB: THE ITALIAN MULTI-MISSION SPACE LABORATORY FOR THE DEVELOPMENT OF APPLICATIONS, SERVICES, AND NEW SATELLITE DATA ALGORITHMS DIRECTLY IN ORBIT AND ON-DEMAND

Leonardo Amoruso, Planetek Italia, Bari, Italy

IAC-24.D1.1.9

STARFAB: CONCEPT OF OPERATIONS AND PRELIMINARY DESIGN OF AN ORBITAL AUTOMATED HUB FOR IN SPACE OPERATION AND SERVICE ACTIVITIES

Mathieu Deremetz, Space Applications Services, Sint-Stevens-Woluwe, Belgium

IAC-24.D1.1.10

EFESTO: A MODULAR SPACE FACTORY TO ENHANCE SUSTAINABILITY AND OUTPOSTS AUTONOMY

Elia Sindoni, Thales Alenia Space Italia, Turin, Italy

IAC-24.D1.1.11

AI-BASED ROBUST AND FAILURE-TOLERANT PROCESSES FOR IN-ORBIT MANUFACTURING OF MODULAR SMALL SATELLITES

Maximilian Mühlbauer, TU Muenchen, Garching, Germany

IAC-24.D1.1.12

AN INVESTIGATION INTO A COMBINED SERVICE OF SPACE-BASED SOLAR ENERGY AND CLIMATE ENGINEERING VIA ORBITING SOLAR REFLECTORS

Onur Çelik, Delft University of Technology, Delft, The Netherlands

D1.2. Technologies that Enable Space Systems

October 15 2024, 10:15 — Orange Hall 3

Co-Chair(s): Matteo Emanuelli, Airbus Defence and Space, Germany; Steven Arnold, The John Hopkins University Applied Physics Laboratory, United States

Rapporteur(s): Audrey Berquand, European Space Agency (ESA), The Netherlands

IAC-24.D1.2.1

TECHNOLOGY DEVELOPMENTS AND ACTIVITIES AT THE EUROPEAN SPACE AGENCY FOR COGNITIVE SYNTHETIC APERTURE RADAR PAYLOADS

Max Ghiglione, ESA - European Space Agency, Noordwijk, The Netherlands

IAC-24.D1.2.2

SECURING SATELLITE OPERATIONS: A NOVEL APPROACH FOR SPACE ASSETS ON-BOARD SAFETY

Jasmine Rimani, AIKOSPACE SAS, Toulouse, France

IAC-24.D1.2.3

LEVERAGING MACHINE LEARNING FOR ADVANCED FAILURE DETECTION IN SPACECRAFT ATTITUDE AND ORBIT CONTROL SUBSYSTEM

Eleonora Mariotti, Sapienza University of Rome, Rome, Italy

IAC-24.D1.2.4

ALPER: VISION BASED ABSOLUTE LOCALISATION FOR PLANETARY EXPLORATION ROVERS - STATISTICAL ANALYSIS OF COMPLEMENTARY APPROACHES

Loïc Le Cabec, Magellium, Ramonville-Saint-Agne, France

IAC-24.D1.2.5

EXPLORING NEUROMORPHIC VISION SENSORS IN SPACE
EXPLORATION AND APPLICATIONS

*Yusra Alkendi, Technology Innovation Institute (TII), Abu Dhabi,
United Arab Emirates*

IAC-24.D1.2.6

AEYE: MULTI-SPECTRAL IMAGING PAYLOAD EQUIPPED WITH
ON-BOARD IMAGE CLASSIFICATION USING AI-GENERATED
IMAGES

*AbdulHalim Jallad, UAE University, Faculty of Engineering, Al Ain,
United Arab Emirates*

IAC-24.D1.2.7

ONBOARD PROCESSING WITH HYBRID COMPUTING ON SMALL
SATELLITES

*Lianxiang Jiang, China Academy of Space Technology (CAST), Yantai,
China*

IAC-24.D1.2.8

ROBOTIC SYSTEM AND REFUELLING MECHANICAL INTERFACE
DESIGN FOR THE ITALIAN IN-ORBITING SERVICING DEMO
MISSION

Francesco Cavenago, Leonardo S.p.A, Nerviano, Italy

IAC-24.D1.2.9

A MOTION CAPTURE SYSTEM FOR DYNAMIC BEHAVIOR
MEASUREMENT OF DEPLOYING PANELS AND HINGE STIFFNESS
OPTIMIZATION IN DELIGHT MISSION

*Keisuke Watanabe, Japan Aerospace Exploration Agency (JAXA),
Tsukuba, Japan*

IAC-24.D1.2.10

FORFABSAT: A RESEARCH FACTORY TO ANALYZE SERIES
PRODUCTION FOR NETWORKS OF SMALL SATELLITES

Klaus Schilling, Zentrum für Telematik, Wuerzburg, Germany

IAC-24.D1.2.11

INVESTIGATION OF LOW-ENERGY SPIKING NEURAL NETWORKS
BASED ON TEMPORAL CODING FOR SCENE CLASSIFICATION

Paolo Lunghi, Politecnico di Milano, Milano, Italy

IAC-24.D1.2.12

RECENT IN-FLIGHT RESULTS WITH THE MICROHAPS NEAR-SPACE
PLATFORM FOR SPACE TECHNOLOGY TESTING

Salvo Marcuccio, Università di Pisa, Pisa, Italy

D1.3. Emergent Space Systems

October 15 2024, 15:00 — Orange Hall 3

Co-Chair(s): Tibor Balint, Jet Propulsion Laboratory, United
States; Reinhold Bertrand, European Space Agency (ESA),
Germany

Rapporteur(s): Igor V. Belokonov, Samara National Research
University (Samara University), Russian Federation

IAC-24.D1.3.1

ADVANCING LUNAR EXPLORATION THROUGH VIRTUAL REALITY
SIMULATIONS: A FRAMEWORK FOR FUTURE HUMAN MISSIONS

Giacomo Franchini, Polytechnic of Turin, Torino, Italy

IAC-24.D1.3.2

A HIGH - FIDELITY PARAMETRIC STUDY OF A PHOTOVOLTAIC AND
BATTERY SYSTEM FOR LUNAR NIGHT SURVIVAL

Sotirios Zormpas, Lunar Outpost EU, Foetz, Luxembourg

IAC-24.D1.3.3

MULTIDISCIPLINARY DESIGN OPTIMIZATION OF EDGE
COMPUTING IN SPACE FOR ADVANCED SATELLITE MISSIONS

*Rashmi Ravishankar, Massachusetts Institute of Technology (MIT),
Boston, United States*

IAC-24.D1.3.4

SPACE FACTORY: A PARADIGM SHIFT IN SMALL SATELLITES
MANUFACTURING

Marco Di Clemente, Italian Space Agency (ASI), Rome, Italy

IAC-24.D1.3.5

THE SELF-REFUELING REJUVENATOR: AN AUTONOMOUS PROBE
FOR EXTENDING SATELLITE LIFE

*Tejas Sharma, Delhi Technological University, New Delhi, India;
Priyanshi Dwivedi, Delhi Technological University, Bhilai, India*

IAC-24.D1.3.7

E.INSPECTOR:VIS-IR IMAGING REAL DEBRIS TO SUPPORT ACTIVE
REMOVAL AND ON ORBIT SERVICING

Michèle Lavagna, Politecnico di Milano, Milan, Italy

IAC-24.D1.3.8

INTEGRATED PHOTONIC CIRCUITS TAILORED FOR SPACE
APPLICATIONS

*Riccardo Albiero, Consiglio Nazionale delle Ricerche - Istituto di
Fotonica e Nanotecnologie (CNR-IFN), Recoaro Terme, Italy*

IAC-24.D1.3.9

DEVELOPMENT OF WIRELESS SENSING PROTOTYPE, "STAMPS"
FOR DATA ACQUISITION, ANALYSIS, AND VISUALIZATION.

*Jordan Kam, UC Berkeley / NASA Ames Research Center, Berkeley,
United States*

IAC-24.D1.3.10

KOSMOS-STATION: VERSATILE & DYNAMIC SPACE STATION
PLATFORM FOR LOW EARTH ORBIT - ADVANCING SPACE
EXPLORATION WITH AUTONOMY AND MODULARITY

*Atharva Barbudhe, Samara National Research University (Samara
University), Gondia, India*

IAC-24.D1.3.11

ENABLING SEAMLESS COLLABORATION IN AOCs/GNC
ENGINEERING: COOPERANTS PROJECT'S APPROACH
TO CONTINUOUS INTEGRATION AND VERIFICATION OF
COMPONENT MODELS

*Stephan Theil, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR),
Bremen, Germany*

D1.4. Cooperative Systems

October 17 2024, 10:15 — Orange Hall 3

Co-Chair(s): Otfried G. Liepack, National Aeronautics and Space
Administration (NASA), Jet Propulsion Laboratory, United States;
Klaus Schilling, Zentrum für Telematik, Germany

Rapporteur(s): Eberhard Gill, Delft University of Technology, The
Netherlands; Avid Roman-Gonzalez, Universidad Nacional de
Moquegua, Peru

IAC-24.D1.4.1

TETHER MANAGEMENT AND DOCKING SYSTEM FOR MULTI-
ROBOT RAPPELLING INTO LUNAR LAVA TUBES

*Mehmed Yüksel, DFKI Robotics Innovation Center Bremen, Bremen,
Germany*

IAC-24.D1.4.2

TEST RESULTS OF A MULTI-ARM ROBOT DEMONSTRATOR FOR
IN-SPACE TELESCOPE SERVICING AND ASSEMBLY

*Mathieu Deremetz, Space Applications Services, Sint-Stevens-
Woluwe, Belgium*

IAC-24.D1.4.3

SIROM FUNCTIONAL VALIDATION CAMPAIGN: TOWARDS THE
IN-ORBIT DEMONSTRATION

Marta Centeno, SENER Aeroespacial, Madrid, Spain

IAC-24.D1.4.4

RECENT ADVANCES IN IN-ORBIT SERVICING TECHNOLOGIES AT
THE UNIVERSITY OF PADOVA

Francesco Branz, University of Padova - DII, Padova, Italy

IAC-24.D1.4.5

LEARNING-BASED TRAJECTORY OPTIMIZATION OF A SPACE
MANIPULATOR POST TARGET-GRASPING

Lorenzo Capra, Politecnico di Milano, Milano, Italy

IAC-24.D1.4.6

CONSTELLATION OF FORMATIONS FOR AUTONOMOUS RESIDENT SPACE OBJECT DETECTION USING STAR TRACKERS

Tomás Ignacio Burroni, Reflex Aerospace, Berlin, Germany

IAC-24.D1.4.7

DELAY TOLERANT NETWORKING PROTOCOLS APPLIED TO PROLIFERATED SATELLITE CONSTELLATIONS

Joshua Gribben, University of Strathclyde, Glasgow, United Kingdom

IAC-24.D1.4.8

IN-SPACE DEMONSTRATIONS OF CARGO TRANSPORTATION WITH DECENTRALIZED MODEL PREDICTIVE CONTROL

Hyeonjun Park, New Mexico State University, Las Cruces, United States

IAC-24.D1.4.9

VAMEX-VTB - A COLLABORATIVE MULTI-USER VIRTUAL TESTBED FOR THE SIMULATION, PLANNING AND ANALYSIS OF A ROBOTIC SWARM-BASED MARS MISSION

Rene Weller, University of Bremen, Bremen, Germany

IAC-24.D1.4.10

SATELLITE SWARM MAINTENANCE VIA BEHAVIORAL CONTROL BASED ON SIMPLE VISUAL INFORMATION

Marco Sabatini, Sapienza University of Rome, Rome, Italy

D1.5. Systems Engineering Modeling and Analysis

October 17 2024, 15:00 — Orange Hall 3

Co-Chair(s): Jon Holladay, National Aeronautics and Space Administration (NASA), United States; Thierry Floriant, Centre National d'Etudes Spatiales (CNES), France

Rapporteur(s): Sapna Rao, Lockheed Martin (Space Systems Company), United States

IAC-24.D1.5.1

USE OF MACHINE LEARNING TO OPTIMIZE MECHANISM DESIGN FOR SPACE ROBOTICS APPLICATIONS

Arash Nourimand, MDA SPACE INC., Brampton, Canada

IAC-24.D1.5.2

THE EUROPEAN SPACE AGENCY MBSE METHODOLOGY

Gianluca Cerrone, Starion Group, Leiden, The Netherlands

IAC-24.D1.5.3

FORMALIZATION OF CUBESAT DATA AND MISSION PARAMETERS THROUGH SYSML FOR PRELIMINARY DESIGN

Giacomo Luccisano, Politecnico di Torino, Torino, Italy

IAC-24.D1.5.4

USER INTEGRATED ANALYSIS OF COLLABORATIVE MBSE TOOLS FOR STUDENT CUBESAT TEAMS

Nicolas Oidtmann, Delft University of Technology (TU Delft), Delft, The Netherlands

IAC-24.D1.5.5

SYSMLV2-BASED MODEL-DRIVEN APPROACH FOR ASTEROID LANDER SYSTEM DESIGN AND ANALYSIS

Muhammad Taha Ansari, Technology Innovation Institute (TII), Abu Dhabi, United Arab Emirates

IAC-24.D1.5.6

NAVIGATING THE ADOPTION OF MBSE ACROSS THE SPACE INDUSTRY: AN ORGANIZATIONAL AND SUPPLY CHAIN PERSPECTIVE

Marcos Eduardo Rojas Ramirez, Space Generation Advisory Council (SGAC), Toulouse, France

IAC-24.D1.5.8

MBSE APPROACH FOR A PRELIMINARY ARCHITECTURE DEFINITION FOR A FACTORY IN SPACE

Riccardo Cambertoni, Thales Alenia Space Italia, San Severino Marche, Italy

IAC-24.D1.5.9

CONNECTING SPACE SYSTEM REQUIREMENTS TO DESIGN MODELS WITH LARGE LANGUAGE MODELS

Johannes Norheim, Massachusetts Institute of Technology (MIT), Cambridge, United States

IAC-24.D1.5.10

APPLYING MODEL BASED SYSTEMS ENGINEERING (MBSE) TO PLATFORM CONCEPT DEVELOPMENT: THE GOOD, THE BAD AND THE UGLY

Vicky Anderson, KISPE Space Systems Limited, Farnborough, United Kingdom

IAC-24.D1.5.11

RESONANCE: A SATELLITE CONSTRUCTION KIT (SCK) SOFTWARE TOOL FOR SATELLITE MODULES DESIGN

Ernst Wehtje, ReOrbit, Helsinki, Finland

IAC-24.D1.5.12

FACILITATING THERMAL ENGINEERING DATA EXCHANGES DURING THE MISSION LIFECYCLE DEMONSTRATED USING A MODEL BASED ENGINEERING HUB

Gianluca Cerrone, Starion Group, Leiden, The Netherlands

D1.6. Systems Engineering Approaches, Processes and Methods

October 18 2024, 10:15 — Orange Hall 3

Co-Chair(s): Geilson Loureiro, National Institute for Space Research - INPE, Brazil; Timothy Cichan, Lockheed Martin Corporation, United States

Rapporteur(s): Norbert Frischauf, TU Graz, Austria

IAC-24.D1.6.1

TECHNOLOGY ROADMAP METHODOLOGY AND TOOLS TO SUPPORT A SUSTAINABLE HUMAN EXPLORATION OF THE MOON

Giuseppe Narducci, Politecnico di Torino, Pontecorvo, Italy

IAC-24.D1.6.2

LEAN SYSTEM ENGINEERING TOOLS FOR THE NEW SPACE ECONOMY

Carmine Di Lauro, Thales Alenia Space Italia, CUNEO, Italy

IAC-24.D1.6.3

A SIMPLIFIED APPROACH TO LCA FOR SPACE SYSTEMS

Enrico Tormena, ESA - European Space Agency, Noordwijk, The Netherlands

IAC-24.D1.6.5

SIMULTANEOUS OPTIMIZATION OF SPACE MISSION CONCEPT OF OPERATIONS WITH NONLINEAR SYSTEMS DESIGN VIA MIXED-INTEGER NONLINEAR PROGRAMMING

Masafumi Isaji, Georgia Institute of Technology, Atlanta, United States

IAC-24.D1.6.6

BUILDING AN EMPIRE: INSTANTIATING LOGICALLY CONSISTENT SYSTEM MODELS USING ONTOLOGICAL ARCHITECTURE AND PROCESS FRAMEWORKS

Michael Halvorson, University of Alabama in Huntsville, Huntsville, United States

IAC-24.D1.6.7

MULTIFIDELITY ACTIVE LEARNING FOR THE DESIGN OF SPACE VEHICLES

Livia Trambaiolo, Imperial College London, London, United Kingdom

IAC-24.D1.6.8

A COMPUTATION ENGINE FOR NUMERICAL SYSTEM REQUIREMENTS GENERATION IN LLM-BASED SPACECRAFT DESIGN ASSISTANTS

Ramon Maria Garcia Alarcia, Technical University of Munich, Ottobrunn, Germany

IAC-24.D1.6.9

MONEYBALL - FINDING LOW COST MISSION ARCHITECTURES BY DESIGN SPACE EXPLORATION USING PATTERN LANGUAGES AND HOUBOLT QUESTIONS

Conall de Paor, ISAE-Supaero University of Toulouse, Toulouse, France

IAC-24.D1.6.10

BUILDING A LIGHTWEIGHT DATA MANAGEMENT TOOL FOR SMALL SATELLITE MISSIONS

Konstantinos Kanavouras, University of Luxembourg, Luxembourg, Luxembourg

IAC-24.D1.6.11

HOW INTELLIGENT DATA MANAGEMENT AND AR CAN HELP ASSEMBLE A SPACECRAFT

Ina Krefting, German Aerospace Center (DLR), Bremen, Bremen, Germany

D1.7. Lessons Learned in Space Systems

October 18 2024, 13:45 — Orange Hall 3

Co-Chair(s): Yoshihisa Arikawa, Japan Aerospace Exploration Agency (JAXA), Japan; Giuseppe Guidotti, Deimos Space SLU, Spain

Rapporteur(s): Dapeng Wang, China HEAD Aerospace Technology Co., China; Hamed Gamal, Mynaric, Germany

IAC-24.D1.7.1

A DECADE OF LCA APPLICATION AT ESA

Tommaso Turchetto, European Space Agency (ESA), Cordenons, Italy

IAC-24.D1.7.2

LESSONS FROM EARTH FOR DESIGNING AND BUILDING SAFE EXTRATERRESTRIAL SYSTEMS

Takaharu Igarashi, Purdue University, West Lafayette, IN, United States

IAC-24.D1.7.3

LESSONS LEARNED IN MANAGING A UNIVERSITY FLIGHT ROVER PROGRAM

Siri Maley, Carnegie Mellon University, Pittsburgh, United States

IAC-24.D1.7.4

LESSONS LEARNED OF NANOSATELLITE SAMSAT-ION MISSION: PRELIMINARY RESULTS

Igor V. Belokonov, Samara National Research University (Samara University), Samara, Russian Federation

IAC-24.D1.7.5

LESSONS LEARNED WITH RISK MANAGEMENT: A SYSTEMS ENGINEER'S PERSPECTIVE CHARLES BAKER

Charles Baker, NASA Goddard Space Flight Center (USRA), Greenbelt, United States

IAC-24.D1.7.6

LIFE CYCLE OF THE VZLUSAT-2 EO SATELLITE: LESSONS LEARNED AND TECHNICAL SOLUTIONS

Vladimír Dániel, Aeronautical Research and Testing Institute (VZLU), Prague – Letňany, Czech Republic

IAC-24.D1.7.7

ON-ORBIT DIAGNOSIS AND PERFORMANCE IMPROVEMENT OF THE OPS-SAT-1 STAR TRACKER

Maria Pilar Alliri, AAC Hyperion, Delft, The Netherlands

IAC-24.D1.7.8

SPECIFIC FEATURES IN TESTING SMALL-SIZED SPACE EQUIPMENT

Mari Allik, University of Tartu, Toravere, Estonia

IAC-24.D1.7.9

SUSTAINABLE DEVELOPMENT OF SMALL SATELLITES USING LIFE CYCLE ASSESSMENT (LCA): A SYSTEMS ENGINEERING APPROACH

Nishita Sanghvi, Technical University of Munich, München, Germany

IAC-24.D1.7.10

THE STUDY ON HIGH ADOPTABILITY OF NEWLY DEVELOPED SPACE KEY TECHNOLOGY

SANGSOON YONG, Korea Aerospace Research Institute (KARI), Daejeon, Korea, Republic of

IAC-24.D1.7.11

TOWARDS A COMMUNITY-DRIVEN LUNAR REGISTRY OF ACCIDENTS AND ISSUES

Sayed Ali Nasser, Space Generation Advisory Council (SGAC), North York, Canada

IAC-24.D1.7.12

EXPERIMENTAL INVESTIGATION AND NUMERICAL ANALYSIS OF A CUBESAT – DEPLOYER SYSTEM

Michela Boscia, Sapienza University of Rome, Roma, Italy

D1.8. D CATEGORY “INFRASTRUCTURE” - Extra Session

October 18 2024, 10:15 — Brown Hall 2

Co-Chair(s): John C. Mankins, ARTEMIS Innovation Management Solutions, LLC, United States; Reinhold Bertrand, European Space Agency (ESA), Germany

IAC-24.D1.8.1

AUTONOMOUS FAULT MANAGEMENT IN DISTRIBUTED SPACE SYSTEMS: A THREE-STEP FEEDBACK-LOOP APPROACH INTEGRATING MACHINE LEARNING

Rashika Sugganahalli Natesh Babu, 'Space Dynamics Control and Systems Engineering' Research Group, Milan, Italy

IAC-24.D1.8.2

AI4CE – GENERATING AND TESTING CUBESAT DESIGNS WITH THE AI SYSTEM GENERATOR HUB

Jan-Peter Ceglarek, TU Darmstadt, Bickenbach, Germany

IAC-24.D1.8.3

UNIVERSAL DOCKING INTERFACES: PIONEERING SUSTAINABLE ON-ORBIT SERVICING IN SPACE HUB OPERATIONS

Eloïse Ropert, ISAE - Institut Supérieur de l'Aéronautique et de l'Espace, Toulouse, France

IAC-24.D1.8.4

VISUAL-BASED LUNAR POSITIONING USING A MULTI-STAGE MULTI-HEAD NEURAL NETWORK

Alessio Derobertis, Politecnico di Milano, Putignano, Italy

IAC-24.D1.8.5

THE IMPORTANCE OF DATA IN THE SPACECRAFT PROJECT LIFECYCLE AND THE CREATION OF THE FIRST DIGITAL DATA ECOSYSTEM FOR THE SPACE DOMAIN: COOPERANTS.

Caroline Lange, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Bremen, Germany

IAC-24.D1.8.6

STEP: SPACE TECHNOLOGY DEVELOPMENT PROGRAM FOR FUTURE ASI MISSIONS

Marco Di Clemente, Italian Space Agency (ASI), Rome, Italy

IAC-24.D1.8.7

DESIGN AND MULTI-OBJECTIVE OPTIMIZATION TOOL FOR THE PRELIMINARY DEFINITION OF EXPENDABLE AND REUSABLE LAUNCH VEHICLE ARCHITECTURES

Vincenzo Romano, AVIO S.p.A., Colleferro, Italy

IAC-24.D1.8.9

COMPARATIVE STUDY BETWEEN CLUSTERED AEROSPIKE NOZZLE AND OCTAWEBS CONFIGURATIONS FOR REUSABLE LAUNCH VEHICLES: PRELIMINARY DESIGN AND TESTS

Angelo Mulas, Politecnico di Torino, Torino, Italy

IAC-24.D1.8.11

DEVELOPMENT OF GRAPPLING AND RESUPPLY ACTIVE SOLUTION FOR PROPELLANTS (GRASP), AN ACTIVE INTERFACE SOLUTION FOR REFUELLING.

Harshav Mahendran, Orbit Fab Ltd, Harwell, United Kingdom

IAC-24.D1.8.12

HOTDOCK: EVOLUTION TOWARDS A SPACE QUALIFIED STANDARD INTERFACE FOR IN-SPACE OPERATIONS AND SERVICING APPLICATIONS

Pierre Letier, Space Applications Services, Sint-Stevens-Wolluwe, Belgium

D2. IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM

Coordinator(s): Yuguang Yang, China Aerospace Science & Industry Corporation (CASIC), China; Markus Jaeger, Airbus Defence & Space, Space Systems, Germany; Randolph Kendall, The Aerospace Corporation, United States; John M. Horack, The Ohio State University College of Engineering, United States

D2.1. Launch Vehicles in Service or in Development

October 14 2024, 15:30 — White Hall 2

Co-Chair(s): Aaron Weaver, National Aeronautics and Space Administration (NASA), United States; Martin Sippel, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

Rapporteur(s): Giuseppe Rufolo, CIRA Italian Aerospace Research Centre, Italy

IAC-24.D2.1.1

KEYNOTE: DEVELOPMENT OF THE VULCAN LAUNCH SYSTEM
Tory Bruno, United Launch Alliance LLC (ULA), United States

IAC-24.D2.1.2

ARIANE 6 INAUGURAL FLIGHT
Aline Decadi, European Space Agency (ESA), Paris, France

IAC-24.D2.1.3

RESULTS OF H3 RETURN TO FLIGHT AND NEXT STEP FOR INNOVATIVE SPACE TRANSPORTATION SYSTEM
Shoyo Hyodo, Mitsubishi Heavy Industries, Ltd., Nagoya city, Japan

IAC-24.D2.1.4

THE TRAJECTORY DESIGN AND FLIGHT VERIFICATION OF GRAVITY-1(YL-1) LAUNCH VEHICLE
Fan Shaobing, Orienspace Ltd., Beijing, China

IAC-24.D2.1.5

MAIASPACE SOLUTIONS FOR SPACE MOBILITY
Jérémy Hassin, MaiaSpace, Vernon, France; Antoinette OTT, MaiaSpace, 92000 PUTEAUX, France

IAC-24.D2.1.6 (unconfirmed)

MULTIDISCIPLINARY DYNAMIC SIMULATION STUDY ON VTVL ROCKET LANDING MANEUVERING BASED ON MODELICA
Zhang Chi, Orienspace Ltd., Beijing, China

IAC-24.D2.1.7

DESIGN AND PROGRESS OF A LOX/METHANE REUSABLE COMMERCIAL LAUNCH VEHICLE
Mei Jiawei, Shanghai Cosmoleap Aerospace Science and Technology Co., Ltd., Beijing, China

IAC-24.D2.1.8

COMPREHENSIVE STUDY OF THE INTERNATIONAL SPACE LAUNCH INDUSTRY: PROGRAMMATIC ANALYSIS AND TECHNICAL FAILURES
Mennatallah Hussein, Massachusetts Institute of Technology (MIT), Cambridge, United States

IAC-24.D2.1.9

AEROTHERMAL ANALYSIS OF NOMINAL AND OFF-DESIGN FIRST STAGE SEPARATION IN A LAUNCH VEHICLE WITH RETRO-ROCKETS
Valerio Orlandini, University of Rome "La Sapienza", Roma, Italy

D2.2. Launch Services, Missions, Operations, and Facilities

October 15 2024, 15:00 — White Hall 2

Co-Chair(s): Iwao Igarashi, Mitsubishi Heavy Industries, Ltd., Japan; Florian Ruhhammer, MT Aerospace AG, Germany

Rapporteur(s): Vincent Taponier, Centre National d'Etudes Spatiales (CNES), France; Jeremy Pinier, National Aeronautics and Space Administration (NASA), Langley Research Center, United States

IAC-24.D2.2.1 (unconfirmed)

KEYNOTE: HOW ISAR SCALES ROCKET PRODUCTION
Andrea Jaime, Isar Aerospace Technologies GmbH, Ottobrunn, Germany

IAC-24.D2.2.2

GROUND SEGMENT, LANDING SITE AND OPERATIONS OF SPACE RIDER: EUROPE'S FIRST REUSABLE SPACE TRANSPORTATION SYSTEM
Dante Galli, European Space Agency (ESA/ESRIN), Roma, Italy

IAC-24.D2.2.3

NONDETERMINISTIC POLYNOMIAL TIME ALGORITHM FOR ESTIMATION OF SPACE LAUNCH BASE LAUNCH CAPACITY
Michal Kurela, Centre National d'Etudes Spatiales (CNES), Paris, France

IAC-24.D2.2.4

A ROAD LESS TRAVELLED: A SPACEPORT'S PATH TOWARD A MULTI-USE LAUNCH COMPLEX
Patrick McCarthy, Space Florida, Merritt Island, United States

IAC-24.D2.2.5

ESA VEGA-C LAUNCH COMPLEX WATER INJECTION SYSTEM – ACOUSTIC STUDIES, SYSTEM ARCHITECTURE AND MONITORING AND CONTROL
Francesco Affinito, Telespazio S.p.A., Rome, Italy

IAC-24.D2.2.6

GROUND OPERATIONS PROCEDURES AND PRELIMINARY DESIGN RESULTS OF SOUTH KOREA'S NEW LAUNCH COMPLEX FOR THE NEXT GENERATION LAUNCH VEHICLE
Chankyung Lim, Korea Aerospace Research Institute (KARI), Daejeon, Korea, Republic of

IAC-24.D2.2.7

GROUND FACILITIES AND SERVICES - THE PAST AND THE FUTURE OF MT AEROSPACE AG AT THE SPACEPORTS
Florian Ruhhammer, MT Aerospace AG, Augsburg, Germany

IAC-24.D2.2.8

CHANGING THE PARADIGM ON SPACE VEHICLE LAUNCH – MODERN HIGHER TECHNOLOGY LAUNCH PADS – A NECESSITY FOR THE DEMANDS OF HIGHER CADENCE LAUNCH
Michael Jones, Equatorial Launch Australia Pty Ltd, Adelaide, Australia

IAC-24.D2.2.9

GREEN PROPULSION AND NEW GENERATION SPACE LAUNCHERS: HYDROGEN PEROXIDE GROUND SYSTEMS FOR VEGA-E RACS
Giulia Avancini, Telematic Solutions Srl, Levico Terme, Italy; Christian Garegnani, Telematic Solutions Srl, Mesero, Italy

IAC-24.D2.2.10

GROUND UP LAUNCH SERVICES: HOW FACILITY-RELATED OPERATIONS AND GOVERNMENT CONTROLS AFFECT SPACE PORT VIABILITY FOR LAUNCH PROVIDERS
Scott Schneider, Adelaide, Australia

IAC-24.D2.2.11

BLUEPRINT FOR A COMMERCIAL SPACEPORT IN THE UNITED ARAB EMIRATES: A SPRINGBOARD FOR INNOVATION AND ECONOMIC GROWTH IN THE SPACE INDUSTRY
Ugur Guven, UN CSSTEAP, London, United Kingdom

D2.3. Upper Stages, Space Transfer, Entry & Landing Systems

October 15 2024, 10:15 — White Hall 2

Co-Chair(s): Oliver Kunz, Beyond Gravity, Switzerland; Bryan Smith, NASA Glenn Research Center, United States

Rapporteur(s): Nicole Viola, Politecnico di Torino, Italy; Julio Monreal, European Space Agency (ESA), France

IAC-24.D2.3.1

ESA SPACE RIDER LEADING THE NEW FRONTIER WITH UNMANNED VEHICLES

Fabio Caramelli, European Space Agency (ESA), Frascati (RM), Italy

IAC-24.D2.3.3

ADVANCING PHOEBUS, AN ARIANEGROUP & MT AEROSPACE COOPERATION FOR PREPARATION OF AN OPTIMIZED LIGHTWEIGHT LOW COST FUTURE UPPER STAGE

Diana Dietze, ArianeGroup, Bremen, Germany

IAC-24.D2.3.4

NYX-EARTH - A VERSATILE CARGO CAPSULE WITH EVOLUTION CAPABILITY

Jon Reijneveld, The Exploration Company GmbH, Merignac, France

IAC-24.D2.3.5

THE ACHIEVEMENTS OF THE EFESTO-2 PROJECT: INFLATABLE HEAT SHIELDS AS INNOVATIVE SOLUTION FOR A SAFE RE-ENTRY OF REUSABLE LAUNCH VEHICLES' SEGMENTS.

Giuseppe Guidotti, Deimos Space SLU, Madrid, Spain

IAC-24.D2.3.6

RESEARCH ON INFLATABLE DECELERATION SYSTEM FOR DEEP SPACE EXPLORATION

Weiqiang Li, Northwestern Polytechnical University, Xi'an, China

IAC-24.D2.3.7

REFEX NAVIGATION DESIGN: IMPROVEMENTS TO THE NAVIGATION FILTER

João Gonçalo Silva, Delft University of Technology (TU Delft), Delft, The Netherlands

IAC-24.D2.3.8

DEVELOPMENT AND TESTING OF THE GNC SOLUTION FOR THE PARAFOIL-BASED RECOVERY OF THE EARS REUSABLE SATELLITE

Adolfo Molina Delgado, Deimos Space SLU, Tres Cantos, Spain

IAC-24.D2.3.9

ONBOARD REAL TIME THRUST ESTIMATION FOR CHANDRAYAAN-3: A NOVEL APPROACH USING ACCELEROMETER DATA AMIDST RCS CORRUPTION

Aditya Rallapalli, U R RAO SATELLITE CENTRE (URSC), Bengaluru, India; RIJESH M P, ISRO Satellite Centre (ISAC), BANGALORE, India

IAC-24.D2.3.10

SUBSONIC AERODYNAMIC ANALYSIS OF AN UNCONVENTIONAL RE-ENTRY VEHICLE

Spartaco Massimo Giannino, Università degli Studi della Campania "Luigi Vanvitelli", Aversa, Italy

IAC-24.D2.3.11 (unconfirmed)

NOVEL APPROACHES TO OCEAN LANDING RECOVERY FOR SPACECRAFT AND PAYLOADS

R Ashok, R V College of Engineering, Bengaluru, Bangalore, India

IAC-24.D2.3.12

DESIGNING LIGHT MARS ASCENT VEHICLES

Jean-Marc Salotti, Laboratoire de l'Intégration du Matériau au Système, Talence, France

D2.4. Future Space Transportation Systems

October 16 2024, 10:15 — White Hall 2

Co-Chair(s): José Gavira Izquierdo, European Space Agency (ESA), The Netherlands; Kenneth Bruce Morris, Sierra Space, United States

Rapporteur(s): Daniel McCammon, MDA SPACE INC., Canada; Nicolas Bérend, ONERA - The French Aerospace Lab, France

IAC-24.D2.4.1

KEY TECHNOLOGIES AND PROGRAMS FOR FUTURE SPACE TRANSPORTATION SYSTEMS AT ITALIAN SPACE AGENCY

Enrico Cavallini, Italian Space Agency (ASI), Rome, Italy

IAC-24.D2.4.2

LAUNCHER OPTIONS FOR EUROPE IN A WORLD OF STARSHIP

Martin Sippel, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), BREMEN, Germany

IAC-24.D2.4.3

DESIGN OF INTELLIGENT AIRCRAFT SYSTEM FOR THE FREE TRAVEL IN THE EARTH-MOON SPACE

Yingying Zhang, Beijing Institute of Control Engineering, China Academy of Space Technology, Beijing, China

IAC-24.D2.4.4

DREAM CHASER® BY SIERRA SPACE: HOW THE SPACE SHUTTLE PAVED THE WAY FOR THIS 'SPIRITUAL SUCCESSOR' AND THE VEHICLE'S FINAL ENVIRONMENTAL AND FUNCTIONAL TESTS TO PREPARE FOR LAUNCH AND LOW EARTH ORBIT

Lily A. Allen, Sierra Space, Highlands Ranch, United States

IAC-24.D2.4.5

DESIGN AND ANALYSIS OF EMERGENCY RETURN ORBITS FOR MANNED EARTH-MOON TRANSPORTATION MISSION

Yuebo Wang, Innovation Academy for Microsatellites, Chinese Academy of Sciences, Shanghai, China

IAC-24.D2.4.6

MULTIDISCIPLINARY DESIGN ASSESSMENT OF PROMISING AERODYNAMIC SHAPES FOR HYPERSONIC PASSENGER TRANSPORT

Tommaso Mauriello, Sirius Space Services, Figline e Incisa Valdarno, Italy

IAC-24.D2.4.7

STUDY ON BALLISTIC RECOVERY SOLUTION OF GRAVITY-2(YL-2) LAUNCH VEHICLE

Fan Shaobing, Orienspace Ltd., Beijing, China

IAC-24.D2.4.8

A HYBRID-ELECTRIC FLYING WING AS AN ATMOSPHERIC CARRIER OF LAUNCHERS FOR SMALL SATELLITES DEPLOYED IN LEO

Mario Rosario Chiarelli, University of Pisa, Pisa, Italy

IAC-24.D2.4.9

MULTIDISCIPLINARY VEHICLE DESIGN AND TRAJECTORY OPTIMISATION FOR THE PRELIMINARY SIZING AND PERFORMANCE ASSESSMENT OF REUSABLE LAUNCHERS.

Giuseppe Guidotti, Deimos Space SLU, Madrid, Spain

IAC-24.D2.4.10

ADVANCEMENTS IN MISSION ENGINEERING FOR SPACE RIDER

Iлона-Daniela Oprea, Elecnor Deimos, Bucharest, Romania

D2.5. Technologies for Future Space Transportation Systems

October 16 2024, 15:00 — White Hall 2

Co-Chair(s): Xiaowei WANG, China Academy of Launch Vehicle Technology (CALT), China; Franck Koebel, ArianeGroup, France

Rapporteur(s): Shana Diez, SpaceX, United States; Christophe Bonnal, European Conference for Aero-Space Sciences (EUCASS), France

IAC-24.D2.5.1

CRYSLIS – THE INITIAL DESIGN OF A EUROPEAN CRYOGENIC STORAGE AND REFUELLING IN-ORBIT DEMONSTRATOR

Kathleen Blyth, Absolut System, Seyssinet-Pariset, France

IAC-24.D2.5.2

ADVANCEMENTS IN QUALIFYING THE REUSABLE THERMAL PROTECTION SYSTEM AND HOT STRUCTURES OF ESA SPACE RIDER

Giuseppe Rufolo, CIRA Italian Aerospace Research Centre, Capua, Italy

IAC-24.D2.5.3

A NOVEL LASER PROPULSION SYSTEM FOR MICROSATELLITE LAUNCH

Rong Chen, China Academy of Launch Vehicle Technology (CALT), Beijing, China

IAC-24.D2.5.4

THE ROAD TO HYPERDART, FAST AEROSPACE'S PARTIALLY REUSABLE PROPRIETARY HYPERSONIC STRATOLAUNCHER FOR SMALLSAT LEO DELIVERY

Alessandro Castelvetti, Politecnico di Milano, Milano, Italy; Lorenzo Beggio, Politecnico di Milano, Mergozzo, Italy

IAC-24.D2.5.5

A WEAKLY MODEL DEPENDENT CONTROL SCHEME FOR A CLASS OF LARGE-SCALE LONG-RANGE AEROSPACE TRANSPORTATION VEHICLE

Feng Zhang, China Academy of Launch Vehicle Technology (CALT), Beijing, China

IAC-24.D2.5.6

PERFORMANCE IMPROVEMENT OF REUSABLE SSTD WITH AIR-ADDITION SYSTEM

Tadayoshi Shoyama, Innovative Space Carrier Inc., Tokyo, Japan

IAC-24.D2.5.7

ADAPTIVE AUGMENTED CONTROL FOR A LAUNCH VEHICLE WITH FUEL-SLOSH

Alessia Nerattini, Sapienza University of Rome, Rome, Italy

IAC-24.D2.5.8

GENETIC PROGRAMMING GUIDANCE FOR THE REENTRY TRAJECTORY OF THE REFEX VEHICLE

Francesco Marchetti, German Aerospace Center (DLR), Bremen, Bremen, Germany

IAC-24.D2.5.9

EUROPEAN AUTONOMOUS FLIGHT TERMINATION SYSTEMS BASED IN SMART AVIONICS

Sergio Ramírez Navidad, SENER, Tres Cantos, Spain

IAC-24.D2.5.10

DESIGN AND DEVELOPMENT OF A MODULAR AVIONICS SUITE FOR A UK MICRO-LAUNCHER.

Alexander Erlank, Orbital Express Launch Limited (Orbex), Forres, United Kingdom

IAC-24.D2.5.11

A DOWNGRADED TRAJECTORY OPTIMIZATION METHOD COMBINING DEEP NEURAL NETWORKS AND LOSSLESS CONVEX OPTIMIZATION FOR THE THRUST DESCENT FAILURE

Zongzhan Ma, Northwestern Polytechnical University, NPU, Xi'an, China

IAC-24.D2.5.12

GENERIC FLIGHT TERMINATION ARCHITECTURE FOR LAUNCHERS- TAILORING THE DESIGN BASED ON FLIGHT-PROVEN BUILDING BLOCKS

Florian THIVENT, PYROALLIANCE, LES MUREAUX, France

D2.6. Future Space Transportation Systems Verification and In-Flight Experimentation

October 17 2024, 10:15 — White Hall 2

Co-Chair(s): Tetsuo Hiraiwa, Japan Aerospace Exploration Agency (JAXA), Japan; David E. Glass, National Aeronautics and Space Administration (NASA), United States

Rapporteur(s): Christie Maddock, University of Strathclyde, United Kingdom; Mauro Augelli, UK Space Agency, United Kingdom

IAC-24.D2.6.1

A REUSABLE LAUNCHER 1ST STAGE DEMONSTRATOR FOR EUROPE AND JAPAN: CALLISTO

Michel ILLIG, Centre National d'Etudes Spatiales (CNES), Paris, France

IAC-24.D2.6.2

CALLISTO VS. STANDARD ELV : WHAT DOES MATTER WHEN SYSTEM IS AT STAKE

Christophe Chavagnac, ArianeGroup, Les Mureaux, France

IAC-24.D2.6.3

JAPAN'S FIRST IN-FLIGHT EXPERIMENTATION OF AUTONOMOUS FLIGHT TERMINATION SOFTWARE USING A SOUNDING ROCKET.

Aya Asamura, JAXA, Ibaraki, Japan

IAC-24.D2.6.4

JAPAN'S FIRST FLIGHT DEMONSTRATION OF NAVIGATION SENSOR INTEGRATED WITH AFTS USING SOUNDING ROCKET.

Ryo Kato, Mitsubishi Precision Co., Ltd., Kamakura-shi, Kanagawa-ken, Japan

IAC-24.D2.6.5

THE REUSABILITY FLIGHT EXPERIMENT – REFEX: A PROJECT UPDATE AND INSIGHT INTO PRE-FLIGHT TEST CAMPAIGNS

Martin Sippel, DLR (German Aerospace Center), Bremen, Germany

IAC-24.D2.6.6

LONG DURATION HYPERSONIC FLIGHT EXPERIMENT ATHEAT

Prof.Ali Gülhan, DLR (German Aerospace Center), Cologne, Germany

IAC-24.D2.6.7

MISSION ANALYSIS AND FEASIBILITY ASSESSMENT FOR THE SYSTEM DROP TEST OF ESA SPACE RIDER RE-ENTRY MODULE

Ilona-Daniela Oprea, Elecnor Deimos, Bucharest, Romania

IAC-24.D2.6.8

SPACE RIDER: PAYLOADS AGGREGATE DESIGN AND PREPARATION PROCESS THROUGHOUT THE WHOLE MISSION LIFETIME

Fabio Caramelli, European Space Agency (ESA), Frascati (RM), Italy

IAC-24.D2.6.9

ROBUST FAULT DETECTION AND ISOLATION ALGORITHMS FOR TVC SYSTEMS: AN EXPERIMENTAL TEST

Stefano Fari, German Aerospace Center (DLR), Bremen, Germany

IAC-24.D2.6.10

STRATOSPHERIC VALIDATION FOR TRL ELEVATION OF HYBRID NAVIGATION SYSTEMS, TWO-PHASE COOLING SYSTEMS AND AI-ASSISTED ATTITUDE DETERMINATION FOR LAUNCH VEHICLES.

Alessia Di Giacomo, Sapienza University of Rome, Roma, Italy

D2.7. Suborbital Rockets and Small Launchers: Concepts and Operations including Student Rocketry

October 17 2024, 15:00 — White Hall 2

Co-Chair(s): Harry A. Cikanek, National Oceanic and Atmospheric Administration (NOAA), United States; Patrick Rennie, Reaction Engines Ltd., United Kingdom

Rapporteur(s): Ulf Palmnäs, Swedish Space Corporation (SSC), Sweden; Joachim Despature, Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland

IAC-24.D2.7.1

SMALLSATS BY THE NUMBERS 2023: GROWING SMALLSAT ACTIVITY AND ITS IMPLICATIONS FOR THE SMALL LAUNCH MARKET

Ryan Puleo, Bryce Space and Technology, Alexandria, United States

IAC-24.D2.7.3

BUILDING A SOUTH AFRICAN SPACE LAUNCH CAPABILITY

Jean Pitot, University of KwaZulu-Natal (UKZN), Durban, South Africa

IAC-24.D2.7.4

CONCEPTUAL DESIGN OF A SMALL LAUNCH VEHICLE FOR CUBESATS: THE CREATIVE PROCESS OF ENGINEERING DESIGN

Irving Enrique Gomez Fernandez, Ciudad de México, Mexico

IAC-24.D2.7.5

A BRAZILIAN PRIVATE MICRO LAUNCH VEHICLE

Dherik França, São Luís, Brazil

IAC-24.D2.7.6

CONCEPT DESIGN OF AN ULTRA-FAST ROCKET-BASED DELIVERY SYSTEM FOR EARTH POINT-TO-POINT TRANSPORTATION

Matteo Santacesaria, Politecnico di Milano, milano, Italy

IAC-24.D2.7.7

SUBORBITAL ROCKETS IN SWEDEN – INNOVATIVE AND COST-EFFICIENT PLATFORMS FOR RESEARCH AND EDUCATION
Kristine Dannenberg, Swedish National Space Agency (SNSA), Solna, Sweden

IAC-24.D2.7.8

REVOLUTIONIZING SUBORBITAL LAUNCHES: DEVELOPMENT OF A PORTABLE, LOW-COST LAUNCH RAIL SYSTEM
Benjamin St-Laurent-Recoura, Concordia University, Montreal, Canada

IAC-24.D2.7.9

DESIGN OPTIMISATION AND COMPARISON OF PROPULSION SYSTEMS FOR SOUNDING ROCKETS
Mitchell Galletly, The University of Sydney, Sydney, Australia

IAC-24.D2.7.10

DESIGN AND VALIDATION OF A YO-YO DE-SPIN SUB-SYSTEM FOR THE ROLL RATE REDUCTION OF A SUB-ORBITAL LAUNCHER
Sofiane Ferrani, Concordia University, Laval, Canada

IAC-24.D2.7.11

EVALUATING THE EFFICIENCY OF RETRIEVAL SYSTEMS FOR LOW-ALTITUDE SOUNDING ROCKETS
James Perry, Delft Aerospace Rocket Engineering (DARE), Delft, The Netherlands

IAC-24.D2.7.12

STUDY OF ACOUSTIC LOADS ON A TRAINING LIQUID ROCKET DURING ITS PROPULSIVE PHASE
Maurício Gontijo, Aeronautic Institute of Technology (ITA), Águas Claras, Brazil

D2.8. In-Space Transportation Solutions and Space Logistics

October 18 2024, 10:15 — White Hall 2

Co-Chair(s): Randolph Kendall, The Aerospace Corporation, United States; Josef Wiedemann, MT Aerospace AG, Germany
Rapporteur(s): Gennaro Russo, Campania Aerospace District, DAC, Italy; Élcio Jeronimo de Oliveira, Associazione Italiana di Aeronautica e Astronautica (AIDAA), Brazil

IAC-24.D2.8.1

BLUE RING: A HIGHLY CAPABLE ORBITAL MANEUVERING VEHICLE TO ENABLE SMALL SATELLITE SCIENCE MISSIONS
Thomas Sanford, Blue Origin LLC, Arlington, United States

IAC-24.D2.8.4

THE COMMERCIAL CASE FOR REFUELING: A VIEW OF LEO, GEO AND CISLUNAR AND HOW REFUELING ENABLES INCREASED MISSION CAPABILITY.
Kevin Smith, Orbit Fab Ltd, Broomfield, United States

IAC-24.D2.8.5

REFUELING IS FUNDAMENTAL TO IN-SPACE TRANSPORTATION SOLUTIONS AND SPACE LOGISTICS
John Mayberry, The Aerospace Corporation, El Segundo, United States

IAC-24.D2.8.6

RAFTEA: A MISSION CONCEPT TO SUPPORT SPACE SUSTAINABILITY THROUGH IN-ORBIT REFUELLING IN LEO
Sebastian Hill, Orbit Fab Ltd, Oxford, United Kingdom

IAC-24.D2.8.7

BUILDING SPACE LOGISTICS MARKETS : WHERE ARE WE NOW ?
Maxime PUTEAUX, Euroconsult, Paris, France

IAC-24.D2.8.8

A STUDY ON COST ADVANTAGE OF INTERORBITAL TRANSPORTATION NETWORK BY USING MULTIDISCIPLINARY SYSTEM DESIGN OPTIMIZATION APPROACH
Yusuke Oki, Japan Aerospace Exploration Agency (JAXA), Tsukuba, Japan

IAC-24.D2.8.9

“SPACE LOGISTICS STATION”-INTELLIGENT OPERATION SPARE SCHEME OF LEO MEGA CONSTELLATION BASED ON SUPPLY CHAIN INVENTORY MANAGEMENT
Wen Xue, Space Engineering University (Beijing), Beijing, China

IAC-24.D2.8.10

A FRAMEWORK FOR LOW-THRUST-BASED SPACE LOGISTICS MODELLING AND OPTIMIZATION
Ruida Xie, Sydney, Australia

IAC-24.D2.8.11

ADVANCING SPACE SYSTEM ARCHITECTURES WITH IN-ORBIT REFUELING TECHNOLOGIES ON GEOSTATIONARY SATELLITES
Yi Qiang Ji Zhang, Cranfield University, Cranfield, United Kingdom

IAC-24.D2.8.12

IDENTIFICATION OF TECHNOLOGICAL GAPS IN SPACE, MOBILITY, AND LOGISTICS
Akhil Gujral, The Aerospace Corporation, El Segundo, United States

D2.9-D6.2. Sustainable Approaches and Impact of Space Transportation Solutions on Earth + Space Environment and on General Safety

October 18 2024, 13:45 — White Hall 2

Co-Chair(s): Emmanuelle David, Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland; Charles E. Cockrell Jr., National Aeronautics and Space Administration (NASA), United States; Aline Decadi, European Space Agency (ESA), France
Rapporteur(s): Francesco Santoro, Altec S.p.A., Italy

IAC-24.D2.9-D6.2.2

SUSTAINABILITY IN SPACE LOGISTICS AT THE EXPLORATION COMPANY
Nathalie Bergmann, The Exploration Company GmbH, Mainz, Germany

IAC-24.D2.9-D6.2.3

UNLOCKING SUSTAINABLE SPACE EXPLORATION: THE ROLE OF REUSABLE ROCKET TECHNOLOGY
Arzu Mirzabayova, Azerbaijan State Oil and Industry University (ASOIU), Baku, Azerbaijan

IAC-24.D2.9-D6.2.4

NEW GENERATION OF EUROPE'S SPACE PORT IN FRENCH GUIANA, AS SUSTAINABLE AS FLEXIBLE
Egalgi Joël, Centre National d'Etudes Spatiales (CNES), Kourou, France

IAC-24.D2.9-D6.2.5

META-STUDY OF CURRENT PROPOSED LIFE CYCLE ASSESSMENT SINGLE-SCORE METHODOLOGIES FOR SPACE MISSIONS' ECO-DESIGN
Marnix Hendrik Gustaaf Verkammen, Space Engineering Center (eSpace), Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland

IAC-24.D2.9-D6.2.7

SUSTAINABILITY OF END-TO-END SPACE TRANSPORTATION MISSIONS: MODELLING TECHNICAL AND ENVIRONMENTAL ASPECTS FOR EARLY PHASES ECODESIGN DECISION SUPPORT
Mathieu Udriot, Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland

IAC-24.D2.9-D6.2.8

ASSESSMENT OF LAUNCH AND RE-ENTRY EMISSIONS OF SPACE TRANSPORTATION SYSTEMS AND THEIR ENVIRONMENTAL IMPACT
Jan-Steffen Fischer, Institute of Space Systems, University of Stuttgart, Stuttgart, Germany

IAC-24.D2.9-D6.2.9

LIFE CYCLE SUSTAINABILITY ASSESSMENT OF MONOPROPELLANT PROPULSION SYSTEMS: ADVANCING THE COMPARISON BETWEEN CONVENTIONAL AND NOVEL MONOPROPELLANTS
Pepijn Deroo, TU Delft, Delft, The Netherlands

IAC-24.D2.9-D6.2.10

REDEFINING "SPACE SUSTAINABILITY" FOR LAUNCH VEHICLES: FORECASTING THE ATMOSPHERIC IMPACT OF THE COMMERCIAL SPACE LAUNCH INDUSTRY IN 2050

Clara Ziran Ma, Massachusetts Institute of Technology (MIT), Middlebury, United States

IAC-24.D2.9-D6.2.11

UPPER-ATMOSPHERIC IMPACT INCLUSION IN LCA FOR SPACE
Enrico Tormena, ESA - European Space Agency, Noordwijk, The Netherlands

D3. 22nd IAA SYMPOSIUM ON BUILDING BLOCKS FOR FUTURE SPACE EXPLORATION AND DEVELOPMENT

Coordinator(s): John C. Mankins, ARTEMIS Innovation Management Solutions, LLC, United States; Maria Antonietta Perino, Thales Alenia Space Italia, Italy

D3.1. Strategies & Architectures as the Framework for Future Building Blocks in Space Exploration and Development

October 16 2024, 10:15 — Turquoise Hall 1

Co-Chair(s): John C. Mankins, ARTEMIS Innovation Management Solutions, LLC, United States; Maria Antonietta Perino, Thales Alenia Space Italia, Italy

Rapporteur(s): Nasr Al-Sahhaf, [unlisted], Saudi Arabia

IAC-24.D3.1.1

DEFINING MARS-FORWARD CAPABILITIES OF THE LUNAR GATEWAY SPACE STATION

Najla Alahmadi, Saudi Space Commission (SSC), Riyadh, Saudi Arabia

IAC-24.D3.1.2

LUNA-10 FRAMEWORK FOR THE FUTURE COMMERCIAL LUNAR ECONOMY

Michael Nayak, Defense Advanced Research Projects Agency, Arlington, United States

IAC-24.D3.1.6

INTRODUCTION OF THE STUDY RESULTS OF THE MOON ELECTRICAL POWER SYSTEMS

Koichi Ijichi, Japan Space Systems, Tokyo, Japan

IAC-24.D3.1.7

ARCHITECTURE OF A MODULAR, IN-SPACE ASSEMBLED MEGASTRUCTURE FOR COMMERCIAL PAYLOAD HOSTING
Davide Demartini, ISAE-Supaero University of Toulouse, Toulouse, France; Hemanth Alapati, ISAE-Supaero University of Toulouse, Toulouse, France

IAC-24.D3.1.8 (unconfirmed)

EXPLORING NEW DEPTHS: UNVEILING PROTEUS™, THE INTERNATIONAL SPACE STATION OF THE OCEAN, AND ITS UNIQUE ASTRONAUT TRAINING CAPABILITIES
Scott Parazynski, Arizona State University, Houston, United States

IAC-24.D3.1.9

ADAPTING LUNAR TECHNOLOGIES FOR THE MARTIAN ENVIRONMENT

Morgane LE NET, ISAE-Supaero University of Toulouse, Seilh, France

IAC-24.D3.1.10

SUPERSTRUCTURES ON MARS

İnci İbadova, Azerbaijan Architecture and Construction University (SABAH groups), Baku, Azerbaijan

IAC-24.D3.1.11

BARCHAN: DESIGN OF A BASELINE ARCHITECTURE FOR HABITATION, A NEW ITERATION ON THE "NEST" NASA MARS 3D PRINTING CHALLENGE PROJECT ENTRY.

Jose-Miguel Armijo, Axiom Space, Houston, United States

D3.2A. Systems and Infrastructures to Implement Sustainable Space Development and Settlement - Systems

October 16 2024, 15:00 — Turquoise Hall 1

Co-Chair(s): Frank Preud'homme, QinetiQ Space nv, Belgium; Gary Barnhard, Xtraordinary Innovative Space Partnerships, Inc., United States; Julie Patarin-Jossec, Spartan Space, France

Rapporteur(s): Paivi Jukola, Aalto University, Finland

IAC-24.D3.2A.1

SUSTAINABLE LUNAR SETTLEMENT DESIGN CHARRETTE: HOW SYSTEM ENGINEERING REQUIREMENTS DRIVE SUSTAINABLE LUNAR HABITAT DESIGN

Gary Barnhard, Xtraordinary Innovative Space Partnerships, Inc., Cabin John, United States

IAC-24.D3.2A.2

LUNAR AGRICULTURAL MODULE GROUND TEST DEMONSTRATOR – AN INTERNATIONAL APPROACH FOR REALIZING PLANT-BASED BIO-REGENERATIVE LIFE-SUPPORT

Michel Fabien Franke, German Aerospace Center (DLR), Bremen, Germany

IAC-24.D3.2A.3

"...AND FOR THE PRECIOUS THINGS PUT FORTH BY THE MOON" – TOWARD INTEGRATED FOUNDATIONAL INFRASTRUCTURE IN CIS-LUNAR SPACE

John Scott, National Aeronautics and Space Administration (NASA), Houston, United States

IAC-24.D3.2A.4

STRUCTURAL DESIGN AND SAFETY CRITICAL CONDITIONS ANALYSIS ON COMPOSITE AND MODERN MATERIALS APPLIED IN CONSTRUCTION OF INFLATABLE MODULES FOR LUNAR AND MARTIAN BASES

Alessandro Siviero, Politecnico di Torino - Thales Alenia Space Italia - ISAE Supaero Toulouse, Cuneo, Italy; Davide Delpiano, Politecnico di Torino - Thales Alenia Space Italia - ISAE Supaero Toulouse, Guarene, Italy

IAC-24.D3.2A.5

SPACE ANALOG FOR THE MOON AND MARS (SAM), A HERMETICALLY-SEALED AND PRESSURIZED TERRESTRIAL ANALOG STATION AND RESEARCH FACILITY: FROM INCEPTION TO CREWED ANALOG MISSIONS AND BEYOND

Bindhu Oommen, University of Arizona, Dallas, United States

IAC-24.D3.2A.6

FRACTIONATED MANIPULATION:\\ A FRAMEWORK FOR ON-ORBIT MANIPULATION\\ USING MULTIPLE MINIATURIZED SPACECRAFT

Jun Yang Li, University of Toronto Institute for Aerospace Studies, Toronto, Canada

IAC-24.D3.2A.7

DIMENSIONING AND COST EVALUATION OF A MARTIAN STEEL PRODUCTION PLANT

Guillaume Leclerc, ESTACA, Ville d'Avray, France; Baptiste Lebon, ESTACA, Montigny-Le-Bretonneux, France; Alexey Klimko, ESTACA, Elancourt, France; Margot Girard, ESTACA, Angers, France

IAC-24.D3.2A.8

CABIN ATMOSPHERE FILTRATION USING AMBIENT AIR IONIZATION

Ian Harris, The Ohio State University, Westerville, United States

IAC-24.D3.2A.9

VALIDATION AND TESTING OF A EUROPEAN VERSATILE ORU FOR IN-ORBIT SERVICING MISSIONS: ORU-BOAS PROJECT

Ana Ruiz Perez, SENER Aeroespacial, Getxo, Spain

IAC-24.D3.2A.11

RECYCLING SPACE DEBRIS AS A STEPPING STONE TOWARDS A PERMANENT LUNAR PRESENCE

Yannick Heumassej, Delft University of Technology (TU Delft), Delft, The Netherlands

D3.2B. Systems and Infrastructures to Implement Sustainable Space Development and Settlement - Technologies

October 18 2024, 10:15 — Turquoise Hall 1

Co-Chair(s): Raymond G. Clinton, NASA Marshall Space Flight Center, United States

Rapporteur(s): Gary Barnhard, Xtraordinary Innovative Space Partnerships, Inc., United States

IAC-24.D3.2B.1

BEYOND EARTH: A MULTIDISCIPLINARY APPROACH TO DEVELOPING SUSTAINABLE LUNAR OUTPOSTS WITH THE MOSS PROJECT

Karim Almatari, Politecnico di Milano, Piacenza, Italy

IAC-24.D3.2B.2

FUNDAMENTAL RESEARCH TO ENABLE IN-SITU RESOURCE UTILIZATION FOR NASA'S ARTEMIS PROGRAM AND BEYOND TAKING PLACE AT THE GLENN RESEARCH CENTER

Aaron Weaver, National Aeronautics and Space Administration (NASA), Bay Village, United States

IAC-24.D3.2B.3

IN SITU SYNCHROTRON X-RAY ANALYSIS OF LASER ADDITIVE MANUFACTURING OF LUNAR REGOLITH SIMULANT

Caterina Iantaffi, University College London (UCL), Oxford, United Kingdom

IAC-24.D3.2B.4

SLM ADDITIVE MANUFACTURING AND SINTERING OF A LUNAR REGOLITH ANALOG

Thierry CUTARD, IMT Mines Albi, Albi, France

IAC-24.D3.2B.5

AI-BASED AND PERFORMANCE-DRIVEN DESIGN FOR THE OPTIMAL COMBINED TENSEGRITY AND MEMBRANE STRUCTURES FOR LUNAR BASES

Muhao Chen, University of Kentucky, Lexington, United States

IAC-24.D3.2B.6

RECYCLING OF SPACE FOOD PACKAGING FOR PRODUCTION OF POLYETHYLENE TOOLS BY ADDITIVE MANUFACTURING

Federica De Rosa, Sapienza University of Rome, Rome, Italy

IAC-24.D3.2B.7

CHARACTERIZATION OF THE PHYSICAL AND MECHANICAL PROPERTIES OF COMPACTED BASALTIC CEMENTITIOUS COMPOUNDS FOR USE AS AN IN-SITU RESOURCE FOR LUNAR INFRASTRUCTURE DEVELOPMENT

Victor Bolivar, Central University of Venezuela (UCV), Caracas, Venezuela; Jesus Camacho, Bolivarian Agency for Space Activities (ABAE), Caracas, Venezuela; Hermin Sosa, Bolivarian Agency for Space Activities (ABAE), Caracas, Venezuela

IAC-24.D3.2B.8

TRADE-OFF ON ISRU-MANUFACTURING-METHODS FOR LANDING STRUCTURES TO ENSURE A SUSTAINABLE LUNAR SURFACE ACCESS.

Theodor Heutling, Technische Universität Dresden (DTU), Dresden, Germany

IAC-24.D3.2B.9

SIMULATION OF THE EROSION BEHAVIOUR OF A ROCKET ON A LUNAR LANDING PAD

Tobias Lamping, Technical University of Braunschweig, Braunschweig, Germany

IAC-24.D3.2B.10

ENVY - EXPLORATION NAVIGATION SYSTEM: USING SMALL SATELLITES TO ENABLE NEXT GENERATION LUNAR NAVIGATION FOR FUTURE MISSIONS

David Placke, University of Applied Science Wiener Neustadt, Sollenau, Austria; Hamza Shehadeh, University of Applied Science Wiener Neustadt, Wien, Austria

IAC-24.D3.2B.11

RENDEZVOUS AND ROBOTICS IN SPACE : STATUS AND APPLICATIONS OF THE EROSS PROJECT

Stéphanie BEHAR-LAFENETRE, Thales Alenia Space France, 100 Boulevard du Midi, 06150 Cannes la Bocca, France, Cannas La Bocca, France

IAC-24.D3.2B.12

ORCHESTRATING SYMBIOSIS: CREATING A FRAMEWORK FOR SHARED CONTROL

Gary Barnhard, Xtraordinary Innovative Space Partnerships, Inc., Cabin John, United States

D3.3. Space Technology and System Management Practices and Tools

October 18 2024, 13:45 — Turquoise Hall 1

Co-Chair(s): John C. Mankins, ARTEMIS Innovation Management Solutions, LLC, United States; Maria Antonietta Perino, Thales Alenia Space Italia, Italy

Rapporteur(s): Paivi Jukola, Aalto University, Finland

IAC-24.D3.3.1

NASA POLICIES AND MANAGEMENT PRACTICES FOR THE NEXT GENERATION OF HUMAN SPACE EXPLORATION: LESSONS FROM GATEWAY

Emma Lehnhardt, NASA, Houston, United States

IAC-24.D3.3.2

APPLYING A SCALED AGILE FRAMEWORK FOR THE DEVELOPMENT OF EUROPE'S SPACEPORT NEW LAUNCHER TRACKING & FLIGHT SAFETY GROUND SYSTEM: AIMING FOR A SUSTAINABLE DIGITAL ECOSYSTEM

Sandra STEERE, Centre National d'Etudes Spatiales (CNES), Kourou, France; Albert FAYOS, GTD, Barcelona, Spain; Catherine Peneaud-Oberti, Centre National d'Etudes Spatiales (CNES), Toulouse, France

IAC-24.D3.3.3

NAVIGATING HYBRID AEROSPACE PROJECT MANAGEMENT: AGILE AND WATERFALL METHODOLOGIES IN SPACE TECHNOLOGY DEVELOPMENT

Arthur Descamps, Planet Labs Inc., Mountain View, United States

IAC-24.D3.3.4

EVALUATION OF LIFE CYCLE COST STRATEGIES: A CASE STUDY FOR PLANETARY HABITATS

Sai Tarun Prabhu Bandemegala, Politecnico di Torino - Thales Alenia Space Italia, Torino, Italy

IAC-24.D3.3.5

ALGORITHMIC ROADMAP BETWEEN SPACEFLIGHT ACTIVITIES AND ARTIFICIAL INTELLIGENCE

Kanak Parmar, Advanced Space, Westminster, United States

IAC-24.D3.3.6

THE TECHNOLOGY MANAGEMENT OF INTEGRATING BLOCKCHAIN IN SPACE SYSTEMS

Muneera Almalki, National Space Science Agency (NSSA), Hidd, Bahrain

IAC-24.D3.3.7

THERMAL ARCHITECTURE FOR NEXT GENERATION COMMERCIAL SPACE ROBOTICS

Alexander DiTommaso, MDA, Toronto, Canada

IAC-24.D3.3.8

PRESSURE DISTRIBUTION OF GAS MOLECULES IN THE WAKE AREA OF A FOLDABLE WING-TYPE ORBITAL MOLECULAR SCREEN

Yifan Wang, Tsinghua University, Beijing, China

IAC-24.D3.3.9

LEVERAGING SMART MAINTENANCE FOR SATELLITE HEALTH PRESERVATION

Bethany Clarke, Electronic & Electrical Engineering / University of Strathclyde, Billingham, United Kingdom

IAC-24.D3.3.10

LEO SATELLITE TELEMETRY PACKET OPTIMIZATION PLATFORM FOR IMPROVING SPACE DOWNLINK EFFICIENCY

Bosung Kim, Korea Aerospace Industries, Ltd, Sacheon-si, Korea, Republic of

IAC-24.D3.3.11

CONCURRENT MODEL-BASED APPROACH FOR CUBESAT MISSION DESIGN

Emanuela La Bella, Politecnico di Torino, Torino, Italy

IAC-24.D3.3.12

UNIQUENESS OF THE SYSTEM ENGINEERING AND MANAGEMENT IN CUBESAT AND SMALLER SATELLITE RESEARCH AND DEVELOPMENT PROGRAMS

Jeng-Shing (Rock) Chern, International Academy of Astronautics (IAA), Toronto, Canada

IAC-24.D3.3.13

OVERCOMING ETHIOPIAN SPACE CHALLENGES: PROSPECTIVE SOLUTIONS TO PROPEL THE NATIONAL SPACE EXPLORATION AND DEVELOPMENT

ESHET TESFAYE TAFES, Ethiopian Space Science and Technology Institute (ESSTI), Addis Ababa, Ethiopia

IAC-24.D3.3.14

MULTI-OBJECTIVE DESIGN OPTIMISATION AND ANALYSIS OF A CREWED EARTH-MARS TRANSPORTATION SYSTEM USING NUCLEAR THERMAL PROPULSION

Ben Parsonage, University of Strathclyde, Glasgow, United Kingdom

D4. 22nd IAA SYMPOSIUM ON VISIONS AND STRATEGIES FOR THE FUTURE

Coordinator(s): Giuseppe Reibaldi, Moon Village Association (MVA), Austria; Gongling Sun, International Space University, France

D4.1. Innovative Concepts and Technologies

October 14 2024, 15:30 — Turquoise Hall 1

Co-Chair(s): Alessandro Bartoloni, National Institute of Nuclear Physics - INFN, Italy; Timothy Cichan, Lockheed Martin Corporation, United States

Rapporteur(s): Xiaowei WANG, China Academy of Launch Vehicle Technology (CALT), China

IAC-24.D4.1.1

KEYNOTE: ADVANCING IN-ORBIT ROBOTIC ASSEMBLY AND DISASSEMBLY OF HIGH-VALUE INFRASTRUCTURES USING END-OVER-END WALKING MANIPULATORS

David Homfray, Oxford, United Kingdom

IAC-24.D4.1.2

AMOCIS: A FLEXIBLE APPROACH FOR BUILDING LARGE AND STIFF STRUCTURES IN SPACE

David Schäfer, German Aerospace Center (DLR), Braunschweig, Germany

IAC-24.D4.1.3

ARTIFICIAL MAGNETIC FIELD AS ACTIVE SHIELD AGAINST COSMIC RADIATION

Marco Peroni, FAENZA, Italy

IAC-24.D4.1.4

A ROADMAP TOWARD A PLANETARY SUNSHADE FOR SPACE-BASED SOLAR GEOENGINEERING

Catello Leonardo Matonti, Politecnico di Torino, Turin, Italy

IAC-24.D4.1.7

LASER ACCELERATORS SYSTEMS TO MIMIC SPACE CONDITIONS

Elena Stancu, Magurele, Romania

IAC-24.D4.1.8

MADE IN SPACE - MANUFACTURE OF SEMICONDUCTOR THIN FILMS IN SPACE BY MOLECULAR BEAM EPITAXY TECHNOLOGY

Hao Liu, Tsinghua University, Beijing, China

IAC-24.D4.1.9

SELF-REPLICATION TECHNOLOGY FOR UBIQUITOUS SPACE EXPLORATION

Alex Ellery, Carleton University, Space Exploration and Engineering Group, Ottawa, Canada

IAC-24.D4.1.10

SPACE AND THE BRAIN-MACHINE INTERFACE

Dharshun Sridharan, Piston Labs, Algester, Australia

IAC-24.D4.1.11

THE CONCEPT STUDY OF AN INFLATABLE ROCKET FOR THE MARS SAMPLE RETURN MISSION

Yi Li, Northwestern Polytechnical University, Xian, China

IAC-24.D4.1.12

ULYSSES – SDG : SYNTHETIC DATA GENERATION FRAMEWORK FOR LUNAR SURFACE OPERATIONS

Quazi Saimoon Islam, University of Tartu, Tartu, Estonia

D4.2. Contribution of Moon Village to Solving Global Societal Issues

October 15 2024, 10:15 — Turquoise Hall 1

Co-Chair(s): Giuseppe Reibaldi, Moon Village Association (MVA), Austria; Xiaowei WANG, China Academy of Launch Vehicle Technology (CALT), China

Rapporteur(s): Paivi Jukola, Aalto University, Finland

IAC-24.D4.2.1

THE ROLE OF LUNAR EXPLORATION AND UTILIZATION FOR THE EARTH ENVIRONMENT

Giuseppe Reibaldi, Moon Village Association (MVA), Vienna, Austria

IAC-24.D4.2.2

IT TAKES A VILLAGE TO SAVE A CIVILIZATION: A STUDY ON OVER-ARCHING EFFECT OF MOON VILLAGE ON HUMANITY

Mayank Mishra, Delhi Technological University, New Delhi, India

IAC-24.D4.2.3

A SOLUTION OF LUNAR MANUFACTURING AND LAUNCHING BASE

Rong Chen, China Academy of Launch Vehicle Technology (CALT), Beijing, China

IAC-24.D4.2.4

THE GLOBAL EXPERT GROUP ON SUSTAINABLE LUNAR ACTIVITIES - THE OPERATIONAL PHASE RESULTS AND OUTLOOK

Giuseppe Reibaldi, Moon Village Association (MVA), Vienna, Austria

IAC-24.D4.2.5

MOON VILLAGE PARTICIPATION OF EMERGING SPACE COUNTRIES PROJECT CHALLENGES AND OPPORTUNITIES

Peter Schulte, SARsatX, Jeddah, Saudi Arabia

IAC-24.D4.2.6

MOON VILLAGE ITALY'S RECENT ENDEAVORS IN LUNAR EXPLORATION AND SPACE EDUCATION

Tancredi Maria Siragusa, University of Naples "Federico II", Napoli, Italy

IAC-24.D4.2.7

THE "MOON STATION 2050" GLOBAL INNOVATION COMPETITION AND INTERNATIONAL MOON DAY 2024 MAIN EVENT

Prof.Shuai Yuan, Harbin Institute of Technology, Harbin, China

IAC-24.D4.2.9

ASTRAX LUNAR CITY SIMULATION FACILITY CONSTRUCTION PLAN IN JAPAN 2024

Taichi Yamazaki, ASTRAX, Inc., Kamakura, Japan

IAC-24.D4.2.10 (unconfirmed)

LUNAR EXPLORATION VEHICLE

Gildo di domenico, Research Consortium Hypatia, Segni, Italy

IAC-24.D4.2.11

EFFICIENT ADAPTIVE ARCHITECTURE FOR AUTOMATIC VOICE AND IMAGE TRANSLATION FOR SPACE SYSTEMS (AEMTAVI)

Juliana Morales Alvarado, Descubre Robótica, San José, Costa Rica; Mileyca Oporta, Descubre Robótica, San José, Costa Rica

IAC-24.D4.2.12

«SHAPING THE PREREQUISITES FOR THE DEVELOPMENT OF EARTH-SPACE HUMANITY»

Christina Balomenaki, Technical University of Crete, Chania, Greece

IAC-24.D4.2.13

ACHIEVEMENTS AND INNOVATION: THE 3RD PROMOMOON INITIATIVE FOR THE MOON VILLAGE GENERATION

SHIMA SURESH, Moon Village Association (MVA), VIENNA, Austria

IAC-24.D4.2.14

LONG-TERM SUSTAINABILITY: LUNAR ENVIRONMENTAL PROTECTION IN RENEWABLE INTERNATIONAL ENVIRONMENTAL LAW AND SPACE LAW PERSPECTIVES

Flávia Alvim de Carvalho, Global Expert Group on Sustainable Lunar Activities on Lunar Environmental Protection Working Group (GEGSLA), Belo Horizonte, Brazil

D4.3. Modern Day Space Elevator Transformational Strengths and their Applications

October 15 2024, 15:00 — Turquoise Hall 1

Co-Chair(s): Peter Swan, Space Elevator Development Corporation, United States; Yoji Ishikawa, Obayashi Corporation, Japan

Rapporteur(s): Daniel Griffin, Royal Institute of Technology (KTH), Sweden

IAC-24.D4.3.1

KEYNOTE: "JEROME PEARSON MEMORIAL LECTURE" - SPACE ELEVATOR APEX ANCHOR INITIAL RESEARCH

Peter Swan, Space Elevator Development Corporation, Paradise Valley, United States

IAC-24.D4.3.2

PERFORMANCE EXPERIMENTS AND OPERATIONAL SIMULATIONS OF SPACE ELEVATOR CLIMBER IN HIGH VACUUM SPACE ENVIRONMENT

Fumihito Inoue, Shonan Institute of Technology, Kanagawa, Japan

IAC-24.D4.3.3

PERFORMANCE VERIFICATION OF SPACE ELEVATOR CLIMBER WITH HYBRID TYPE DRIVING ROLLER AND MECHANISM ANALYSIS BY SIMULATION

Momoe Terata, Shonan Institute of Technology, Kanagawa, Japan

IAC-24.D4.3.4

EXPLOITING GEO

John Knapman, International Space Elevator Consortium, Chandlers Ford, United Kingdom

IAC-24.D4.3.5

TECHNICAL ISSUES AND CURRENT DEVELOPMENT STATUS FOR REALIZING A SPACE ELEVATOR

Yoji Ishikawa, Obayashi Corporation, Tokyo, Japan

IAC-24.D4.3.7

DESIGN CONSIDERATIONS FOR A SPACE MANUFACTURING FACILITY AT THE APEX ANCHOR

Chi Lan Huynh, University of Houston, Albuquerque, United States

IAC-24.D4.3.8

ELECTROMAGNETIC COIL ENHANCED SPACE ELEVATORS: ADVANCING GREEN ACCESS TO SPACE

Flora Vyas, Vellore Institute of Technology, Porbandar, India; Baladitya Rane, Vellore Institute of Technology, Indore, India

IAC-24.D4.3.9

HEXAGONAL PRISM STRUCTURE FOR TETHER USED FOR SPACE ELEVATOR.

Abhishek Singh, National Space Society (USA) -Mumbai chapter, Thane, India

IAC-24.D4.3.10

GREEN ROAD TO SPACE LEADS TO DUAL SPACE ACCESS STRATEGY

Peter Swan, Space Elevator Development Corporation, Paradise Valley, United States

IAC-24.D4.3.11 (unconfirmed)

FUTURE MULTIPLANETARY ECONOMY UTILIZING THE SPACE ELEVATOR

Giorgio Gaviraghi, Unispace Exponential Creativity, verbania, Italy

IAC-24.D4.3.12

SPACE ELEVATOR: BRIDGING EARTH AND THE COSMOS

Ravan Akhundov, Azerbaijan State Oil and Industry University (ASOIU), Khyrdalan, Azerbaijan

D4.4. Strategies for Rapid Implementation of Interstellar Missions: Precursors and Beyond

October 17 2024, 10:15 — Turquoise Hall 1

Co-Chair(s): Mae Jemison, 100 Year Starship, United States; Giancarlo Genta, Politecnico di Torino, Italy

Rapporteur(s): Les Johnson, National Aeronautics and Space Administration (NASA), Marshall Space Flight Center, United States

IAC-24.D4.4.1

ADVANCED PROPULSION TECHNOLOGIES FOR RAPID IMPLEMENTATION OF INTERSTELLAR PRECURSOR MISSIONS

Angelo Genovese, Thales Electron Devices GmbH, Ulm, Germany

IAC-24.D4.4.2

ADVANCED CAPABILITIES FOR NUCLEAR ELECTRIC POWERPLANTS FOR INTERSTELLAR PRECURSORS

Roger X. Lenard, LPS, Edgewood, NM, United States

IAC-24.D4.4.3

NUCLEAR ELECTRIC PROPULSION FOR FAST INTERSTELLAR PRECURSOR MISSIONS: PROBLEMS AND PROMISES

Ralph L. McNutt, Jr., The John Hopkins University, Laurel, MD, United States

IAC-24.D4.4.4

REUSABLE SPACECRAFT FOR FUEL-EFFICIENT MULTI-TARGET MAIN ASTEROID BELT SAMPLING MISSIONS

Jacob Irwin, Berkely, Camas, United States

IAC-24.D4.4.5

ORBITAL PATH OF A SPACE PROBE IN ORDER TO ENTER INTO A STABLE ORBIT AROUND A BINARY STAR SYSTEM

Ugur Guven, UN CSSTEAP, London, United Kingdom

IAC-24.D4.4.6

MASSIVE VELOCITIES FOR LARGE SPACECRAFT TOWARDS THE STARS

Peter Swan, Space Elevator Development Corporation, Paradise Valley, United States

IAC-24.D4.4.7

INTERSTELLAR SYSTEMS AT THE EDGE OF CHAOS

Angelo C.J. Vermeulen, Delft University of Technology (TU Delft), Delft, The Netherlands

IAC-24.D4.4.8

TECHNOLOGY DEVELOPMENT PACE COEFFICIENT FOR RELIABLE INTERSTELLAR TRAVEL TIMELINE

Antoine Faddoul, Tony Sky Designs Group, New York, United States

IAC-24.D4.4.9

SPACE ARKS FOR THE NEAREST STARS: A FEASIBILITY EVALUATION

Giancarlo Genta, Politecnico di Torino, TORINO, Italy

D4.5. Space Resources, the Enabler of the Earth-Moon Econsphere

October 17 2024, 15:00 — Turquoise Hall 1

Co-Chair(s): Roger X. Lenard, LPS, United States; Mark Sundhal, Cleveland State University,

Rapporteur(s): Peter Swan, Space Elevator Development Corporation, United States

IAC-24.D4.5.1

LUNAR OUTPOST AUTONOMOUS EXTREME-ENVIRONMENT ROBOTICS TO ENABLE EMERGING SPACE RESOURCE PROSPECTING, SCIENCE RETURN, AND NEW MISSION CONOPS
Andrew Gerner, Lunar Outpost Inc., Arvada, United States

IAC-24.D4.5.2

LUNAR PROPERTY LAWS: ESTABLISHING LEGAL FRAMEWORKS FOR SPACE RESOURCES
Dilawaiz Saghir, Space Generation Advisory Council (SGAC), Islamabad, Pakistan

IAC-24.D4.5.3

A COMBINED RESOURCE MAPPER AND EXCAVATION CONCEPT FOR PSRS
Roger X. Lenard, LPS, Edgewood, NM, United States

IAC-24.D4.5.4

SOLAR AND CARBOTHERMAL REACTOR TO OBTAIN HYDROGEN AND OXYGEN IN ARTIFICIAL PHOTOSYNTHESIS ON THE MOON (SOLCAROX)
Daniela Duran Arias, Descubre Robótica, San Jose, Costa Rica

IAC-24.D4.5.5

EXPERIMENTAL DEMONSTRATION OF THE ELECTROCHEMICAL REDUCTION OF A LUNAR HIGHLAND SIMULANT TO METALLIC ALUMINUM. FACTORS AFFECTING THE REACTOR'S PERFORMANCE.
Xavier Walls, Carleton University, Ottawa, Canada

IAC-24.D4.5.7

ISPACE: ADVANCING LUNAR ISRU PROJECTS THROUGH UPCOMING ROVER MISSIONS
Sophia Casanova, ispace, inc., Luxembourg, Luxembourg

IAC-24.D4.5.8

OPTIMIZATION OF METAL ADDITIVE MANUFACTURING VIA STRUCTURED SEGREGATION FOR DEEP SPACE EXPLORATION
Adán González García, Instituto Politécnico Nacional, CDMX, Mexico

IAC-24.D4.5.9

OPTICAL MINING FOR EXTRACTION OF MINERALS
Heet Naik, University of Cincinnati, Cincinnati, United States

IAC-24.D4.5.10

NAVIGATING THE LEGAL LANDSCAPE: BALANCING PUBLIC AND PRIVATE INTERNATIONAL LAW IN SPACE RESOURCE APPROPRIATION
LUCILLIEN DENOYELLE, Space Generation Advisory Council (SGAC), Paris, France; Sofia Kassara, Athens, Greece

IAC-24.D4.5.11

ADVANCEMENTS IN LUNAR RESOURCES UTILIZATION FOR OXYGEN EXTRACTION: ANALYSIS AND DESIGN OF THE ORACLE PAYLOAD
Ivan Troisi, Politecnico di Milano, Milan, Italy

IAC-24.D4.5.12

CAN HYDROGEN BE A METAL?
Vüsal Huseynzade, National Aviation Academy - Azerbaijan, Bakü, Azerbaijan

IAC-24.D4.5.13

FIRST APPLICATION OF LUXEMBOURG'S SPACE RESOURCES LAW: ANALYSIS OF THE NASA-ISPACE EUROPE CONTRACT AND ITS REGULATORY IMPLICATIONS
Héloïse Vertadier, ispace, inc., Luxembourg Gare, Luxembourg

IAC-24.D4.5.14

TOWARDS A LEGAL REGIMES WITH CERTAINTY: REGULATORY AND POLICY PREFERENCES FROM COMMERCIAL SECTORS
Xiaoya Lin, China Great Wall Industry Corporation (CGWIC), Beijing, China

IAC-24.D4.5.15

INDUSTRIALIZING THE EARTH-MOON SYSTEM - THE ROLE OF SPACE MINING AND MATERIAL PROCESSING FOR HUMAN CIVILIZATION ON EARTH AND IN SPACE
Werner Grandl, Space Renaissance International, Tulln, Austria

D5. 57th IAA SYMPOSIUM ON SAFETY, QUALITY AND KNOWLEDGE MANAGEMENT IN SPACE ACTIVITIES

Coordinator(s): Jeanne Holm, City of Los Angeles, United States; Roberta Mugellesi-Dow, European Space Agency (ESA), United Kingdom

D5.1. For a successful space program: Quality and Safety!

October 16 2024, 10:15 — Turquoise Hall 2

Co-Chair(s): Alexander S. Filatyev, Lomonosov Moscow State University, Russian Federation

Rapporteur(s): Kaitlyn Holm, University of Pennsylvania, United States

IAC-24.D5.1.1

STRUCTURAL AND THERMAL MODEL TESTING CAMPAIGN OF A 1U CUBESAT
Matteo Piunti, Politecnico di Milano, Pesaro, Italy; Francesco Schembri, Politecnico di Milano, Busto Arsizio, Italy

IAC-24.D5.1.2

PRODUCT ASSURANCE AND CONFIGURATION MANAGEMENT OF THE EUROPEAN SERVICE MODULE: ESA PERSPECTIVE FROM THE DEVELOPMENT PHASE TO THE SUCCESSFUL ARTEMIS I MISSION AND BEYOND.
Marco Chiaradia, ESA - European Space Agency, Leiden, The Netherlands

IAC-24.D5.1.4

ANALYSIS OF THE POSSIBLE ELIMINATING SPACECRAFT SYSTEMS RELIABILITY PROBLEM BY BIOMIMETIC SYSTEMS
Sakinakhanum Abdullayeva, National Aviation Academy - Azerbaijan, Baku, Azerbaijan

IAC-24.D5.1.5 (unconfirmed)

REVOLUTIONIZING SPACE LAUNCH RELIABILITY: A MULTI-MODE LAUNCH VEHICLE FAILURE SIMULATION
Mennatallah Hussein, Massachusetts Institute of Technology (MIT), Cambridge, United States

IAC-24.D5.1.6

ENSURING SAFETY IN CRITICAL CATEGORY 'A' FLIGHT SOFTWARE THROUGH MC/DC AND OBJECT-TO-SOURCE TRACEABILITY VERIFICATION
Andoni Arregui, GTD, Markdorf, Germany

IAC-24.D5.1.7

ASSESSING THE SUSTAINABILITY OF ARTIFICIAL INTELLIGENCE SYSTEMS DEPLOYED IN OUTER SPACE
Hargun Kaur, University of Toronto Aerospace Team (UTAT), Mississauga, Canada; Meghna Ravikumar, University of Toronto Aerospace Team (UTAT), Toronto, Canada; Christina Mai, University of Toronto Aerospace Team (UTAT), Toronto, Canada; Eesa Aamer, University of Toronto Aerospace Team (UTAT), Mississauga, Canada; Emily Ha-Tchong, University of Toronto Aerospace Team (UTAT), Toronto, Canada

IAC-24.D5.1.8

DESIGNING A SPACE PIT FOR ROCKET LAUNCHES: A NOVEL APPROACH

Pranav Balaji, SRM Institute of Science and Technology, Delhi, India

IAC-24.D5.1.9

OPERATIONAL RISK MANAGEMENT IN STUDENT SPACE MISSIONS THROUGH FMEA-CENTRIC SOFTWARE

Hunter Wodzinski, Carnegie Mellon University, Coraopolis, United States

IAC-24.D5.1.10

THE THREE R'S OF SPACE TRAVEL - RESILIENCY, RECOVERABILITY AND REDUNDANCY: SHOULD WE BE GOING TO THE MOON WITHOUT ESTABLISHED AND AGREED SEARCH & RESCUE PROTOCOLS?

Dharshun Sridharan, Piston Labs, Algester, Australia

IAC-24.D5.1.11

RAMS AND FDIR METHODS IN SUPPORT TO ZERO DEBRIS APPROACH

Silvana Radu, European Space Agency (ESA-ESTEC), Noordwijk, The Netherlands

IAC-24.D5.1.12

SURVEY AND ANALYSIS FOR LEANSAT MISSION ASSURANCE STRATEGY

Kikuko Miyata, Meijo University, Nagoya, Japan

IAC-24.D5.1.13

IN-HOUSE STRUCTURE DESIGN FOR STUDENT CUBESAT MISSIONS: STRATEGIES, SOLUTIONS, AND LESSONS LEARNT

Giuseppe De Luca, Politecnico di Milano, La Spezia, Italy; Aurora Cagnoni, Politecnico di Milano, Tolmezzo, Italy

IAC-24.D5.1.15

SAVOIR FDIR HANDBOOK: INSIGHTS FROM THE LATEST UPDATE

Silvana Radu, European Space Agency (ESA-ESTEC), Noordwijk, The Netherlands

D5.2. Emerging trends of knowledge management in organizations

October 15 2024, 10:15 — Turquoise Hall 2

Co-Chair(s): Roberta Mugellesi-Dow, European Space Agency (ESA), United Kingdom; Jeanne Holm, City of Los Angeles, United States

Rapporteur(s): Daniel Galarreta, Centre National d'Etudes Spatiales (CNES), France

IAC-24.D5.2.1

THE FORMULATION OF A STRATEGIC PLAN FOR AN EMERGING SPACE AGENCY: A CASE STUDY ON BAHRAIN'S NATIONAL SPACE SCIENCE AGENCY (NSSA)

Rasha Al-Amad, National Space Science Agency (NSSA), Manama, Bahrain

IAC-24.D5.2.3

ROLES, EFFECTS, AND RAMIFICATIONS OF IN-PERSON INTERACTIONS IN A DIGITAL TEAM

Federica Bonfitto, Thales Alenia Space Italia, Turin, Italy

IAC-24.D5.2.4

KNOWLEDGE CONTINUITY IN SPACE ORGANIZATIONS: ADAPTIVE STRATEGIES FOR SUCCESSFUL INTERGENERATIONAL KNOWLEDGE SHARING

Chia Tian-Breanne Chen, Singtel Optus, Belrose, Australia; Matthew McKay, NASA, Moffett Field, CA, United States; Natasha Nogueira, Planet Labs Inc., San Francisco, CA, United States; Isi Casas del Valle Pacheco, Space Generation Advisory Council (SGAC), Santiago, Chile; Maura Sordello, Thales Alenia Space Italia (TAS-I), Verzuolo, Italy

IAC-24.D5.2.5

THIS IS THE WAY: BEST PRACTICES IN EMPOWERING DEVELOPING COUNTRIES TO USE SPACE DATA

Kaitlyn Holm, University of Pennsylvania, Bryn Mawr, United States

IAC-24.D5.2.6

KNOWLEDGE MAPPING AS AN ANTICIPATION TOOL TO ENHANCE CNES SKILLS AND PROMOTE INNOVATION

Estelle Cavan, Centre National d'Etudes Spatiales (CNES), Toulouse, France

IAC-24.D5.2.7

PYTHIA - AN LLM-DRIVEN AUTOMATED PLATFORM THAT USES ESTABLISHED CONSENSUS-BUILDING TECHNIQUES TO CAPTURE AND SYNTHESISE THE WISDOM OF A PANEL OF RENOWNED AUTHORITIES ON SPACE ENGINEERING.

Shaun Kenyon, Gold Coast, Australia

IAC-24.D5.2.8

LEVERAGING AN INTEGRATED DATA PLATFORM TO SUPPORT SATELLITE CONSTELLATION TRADESPACE ANALYSIS

Lucy Hoag, San Francisco, United States

IAC-24.D5.2.9

KNOWLEDGE ENGINEERING AND AUGMENTED HUMAN INTELLIGENCE. AN APPLICATION TO THE SUSTAINABLE USE OF SPACE

Daniel Galarreta, Centre National d'Etudes Spatiales (CNES), Toulouse, France; Vincent Holley, Geeglee, MASSY, France

IAC-24.D5.2.10

ONTOLOGY-DRIVEN MODEL BASED SYSTEM ENGINEERING FOR AUTOMATING THE DESIGN OF SATELLITES

Sindre Herstad, Orbit NTNU, Trondheim, Norway

IAC-24.D5.2.11

KNOWLEDGE REPRESENTATION AND MODEL-BASED SYSTEMS ENGINEERING FOR SPACE DATA STANDARDS AND FUNDAMENTALS

Robert Rovetto, American Institute of Aeronautics and Astronautics (AIAA), New York, United States

IAC-24.D5.2.12

PROJECT KNOWLEDGE MANAGEMENT FRAMEWORK UNDER THAI SPACE CONSORTIUM

Pennapa Boonrueng, National Astronomical Research Institute of Thailand (NARIT), Chiangmai, Thailand

D5.3. Prediction, Testing, Measurement and Effects of space environment on space missions

October 17 2024, 10:15 — Turquoise Hall 2

Co-Chair(s): Henry de Plinval, Office National d'Etudes et de Recherches Aérospatiales (ONERA), France; Teppei Okumura, Japan Aerospace Exploration Agency (JAXA), Japan

Rapporteur(s): Carlos Soares, NASA Jet Propulsion Laboratory, United States

IAC-24.D5.3.1

THE CORRELATION OF RADIATION SIMULATIONS WITH IN-ORBIT DATA FROM THE GREENCUBE MEO CUBESAT MISSION

Michela Boscia, Sapienza University of Rome, Roma, Italy

IAC-24.D5.3.2 (unconfirmed)

SPACE WEATHER & CRITICAL INFRASTRUCTURES PROTECTION

Silvano Fineschi, INAF, Pino Torinese, Italy

IAC-24.D5.3.3

DATA-STREAMS FOR A CALIBRATED COMMERCIAL ATMOSPHERIC DENSITY MODEL

Vishal Ray, Broomfield, United States

IAC-24.D5.3.5

THERMAL RESILIENCE TEST METHOD AND STRATEGY FOR SOLAR CELLS SPACE QUALIFICATION

Marco Rosa, Kyushu Institute of Technology, Roma, Italy

IAC-24.D5.3.6

SINGLE EVENT EFFECT TESTING USING MEDICAL SYNCHROTRON

Martin Eizinger, FOTEC Forschungs- und Technologietransfer GmbH, Wiener Neustadt, Austria

IAC-24.D5.3.7

EXPERIMENTAL APPROACH OF MOLECULAR CONTAMINATION FOR SOLAR-C EUVST'S CANDIDATE MATERIALS

Hiroaki Okuma, Space Engineering Development Co., Ltd., Tokyo, Japan

IAC-24.D5.3.8

CHARACTERIZATION OF ORGANIC CONTAMINATION FOOTPRINT FROM MOON, MARS AND OCEAN WORLD LANDING SYSTEMS FOR ROBOTIC AND CREWED MISSIONS

Carlos Soares, NASA Jet Propulsion Laboratory, Pasadena, United States

D5.4. Cybersecurity in space systems, risks and countermeasures

October 18 2024, 10:15 — Yellow Hall 1

Co-Chair(s): Julien Airaud, Centre National d'Etudes Spatiales (CNES), France; Stefano Zatti, University of Rome "La Sapienza", Italy

Rapporteur(s): Nil Angli, ESA - European Space Agency, United Kingdom

IAC-24.D5.4.2

ENCRYPTED COLLISION PROBABILITY FOR SECURE SATELLITE CONJUNCTION ANALYSIS

Jihoon Suh, The University of Texas at Austin, Austin, United States

IAC-24.D5.4.3

ADVANCING CYBERSECURITY FOR SATELLITE COMMUNICATIONS IN THE QUANTUM COMPUTING ERA

Jens Freymuth, Technische Universität Berlin, Berlin, Germany

IAC-24.D5.4.5

DEVELOPING A CCSDS COMPLIANT PLATFORM TO RELIABLY SECURE CURRENT AND FUTURE SPACE DATA LINKS

Louis Masson, Cysec SA, Romont, Switzerland

IAC-24.D5.4.6

MITIGATING STEALTH ATTACKS VIA GAME-THEORETIC SWITCHING IN MULTI SPACECRAFT SYSTEMS.

James Ragan, California Institute of Technology, Pasadena, United States

IAC-24.D5.4.7

CYBER INSURANCE FOR CYBERSECURITY IN SPACE SYSTEMS. BUILDING EFFICIENT RISK MANAGEMENT ECOSYSTEM

Katarzyna Malinowska, European Space Foundation, Warsaw, Poland

IAC-24.D5.4.8

CYBER RANGE AND DIGITAL TWIN TECHNOLOGIES FOR SPACE RESILIENCY AND SECURITY

András Edl, University of Public Service (UPS), Budapest, Hungary

IAC-24.D5.4.9

DEEP LEARNING IN SPACE: ADVANCING EXPLORATION AND SAFEGUARDING AGAINST CYBER THREATS

May Almousa, Princess Nourah Bint Abdul Rahman University, Riyadh, Saudi Arabia

IAC-24.D5.4.10

THE USE OF AI IN THE DETECTION OF CYBER INTRUSIONS IN ORBITAL SYSTEMS

Anna Barraqué, CYSEC FRANCE, Toulouse, France

IAC-24.D5.4.11

THE ROLE OF LOCALIZED COMMUNITIES OF INTEREST IN STANDARDIZING COORDINATED RESPONSES TO SPACE CYBERSECURITY THREATS

Nick Tsamis, The MITRE Corporation, Honolulu, HI, United States

IAC-24.D5.4.12

PROPOSAL OF CYBER INCIDENT RESPONSE STRATEGIES IN SPACE NETWORKS FOR SECURITY ENHANCEMENT

Avid Roman-Gonzalez, Universidad Nacional de Moquegua, Lima, Peru

D6. IAF SYMPOSIUM ON COMMERCIAL SPACEFLIGHT SAFETY ISSUES

Coordinator(s): Francesco Santoro, Altec S.p.A., Italy

D6.1. Commercial Spaceflight Safety and Emerging Issues

October 15 2024, 10:15 — Yellow Hall 1

Co-Chair(s): John Sloan, Federal Aviation Administration Office of Commercial Space Transportation (FAA/AST), United States; Francesco Santoro, Altec S.p.A., Italy

Rapporteur(s): Gennaro Russo, Campania Aerospace District, DAC, Italy

IAC-24.D6.1.1

ENHANCING SAFETY AND REGULATIONS FOR COMMERCIAL SPACE TRANSPORTATION WITH SPACE NUCLEAR SYSTEMS IN THE UNITED STATES

Paul Wilde, Federal Aviation Administration Office of Commercial Space Transportation (FAA/AST), Washington DC, United States

IAC-24.D6.1.3

HOW COULD LOOK LIKE A FUTURE BALANCED AND INDUSTRY-FRIENDLY REGULATORY LIABILITY FRAMEWORK FOR SUBORBITAL HUMAN SPACEFLIGHT COMMERCIAL LAUNCHES?

Marco Cattadori, PwC Strategy&, Amsterdam, The Netherlands

IAC-24.D6.1.4

TOWARDS EFFICIENT INTEGRATION OF ROCKET LAUNCHES AND RE-ENTRY OPERATIONS IN EUROPEAN AIRSPACE: DEVELOPMENT AND TESTING OF A LAUNCH COORDINATION CENTER

Sven Kaltenhaeuser, DLR, German Aerospace Center, Braunschweig, Germany

IAC-24.D6.1.5

THE POWER OF INTEGRATING DECISIONAL ANALYSIS

Gabriel Kirchner, Viena, Austria

IAC-24.D6.1.6 (unconfirmed)

NAVIGATING THE CHALLENGES AND OPPORTUNITIES IN SPACE TOURISM

R Ashok, R V College of Engineering, Bengaluru, Bangalore, India

IAC-24.D6.1.7

PSYCHOLOGICAL SCREENINGS FOR SPACEFLIGHT PARTICIPANTS IN SHORT-DURATION SUBORBITAL FLIGHTS

Oliver Du Bois, George Washington University, Washington DC, United States

IAC-24.D6.1.8

ENSURING GUEST SAFETY IN FUTURE SPACE STATION

Fiona HUBERT, ISAE - Institut Supérieur de l'Aéronautique et de l'Espace, Nantes, France

IAC-24.D6.1.9

A CRITICAL ANALYSIS OF REENTRY DEBRIS UNCERTAINTY AND INTERNATIONAL COORDINATION EFFORTS

Kayla Bigham, Federal Aviation Administration Office of Commercial Space Transportation (FAA/AST), Washington D.C., United States

IAC-24.D6.1.10

AIRCRAFT SAFETY AND SPACE VEHICLE HAZARDS: HOW SAFE FROM SPACE DEBRIS HAZARDS WILL YOUR FUTURE FLIGHTS BE?

Paul Wilde, Federal Aviation Administration Office of Commercial Space Transportation (FAA/AST), Washington DC, United States

IAC-24.D6.1.11

DEVELOPMENT OF AUTONOMOUS FLIGHT TERMINATION SOFTWARE

Takafumi Akiyama, Space Engineering Development Co., Ltd.(SED), Nakano-ku, Tokyo, Japan

D6.2-D2.9. Sustainable Approaches and Impact of Space Transportation Solutions on Earth + Space Environment and on General Safety

October 18 2024, 13:45 — White Hall 2

Co-Chair(s): Aline Decadi, European Space Agency (ESA), France; Charles E. Cockrell Jr., National Aeronautics and Space Administration (NASA), United States; Emmanuelle David, Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland
Rapporteur(s): Francesco Santoro, Altec S.p.A., Italy

IAC-24.D6.2-D2.9.1

KEYNOTE: TOWARD SUSTAINABLE SPACE EXPLORATION: ESA'S COMMITMENT TO ECO-DESIGN AND ENVIRONMENTAL RESPONSIBILITY

Andrea Vena, European Space Agency (ESA), Paris, France

IAC-24.D6.2-D2.9.6

STREAMLINING LIFE CYCLE ASSESSMENT FRAMEWORK FOR SPACE MISSIONS AT EARLY DESIGN STAGES: INSIGHTS FROM THE CHESSE CUBESAT MISSION

Angelina Frolova, Space Engineering Center (eSpace), Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland; Antonio Zecchin, Ecole Polytechnique Fédérale de Lausanne (EPFL), Arosio, Switzerland

D6.3. Enabling safe commercial spaceflight: vehicles and spaceports

October 17 2024, 10:15 — Yellow Hall 1

Co-Chair(s): John Sloan, Federal Aviation Administration Office of Commercial Space Transportation (FAA/AST), United States; Francesco Santoro, Altec S.p.A., Italy
Rapporteur(s): Gennaro Russo, Campania Aerospace District, DAC, Italy

IAC-24.D6.3.1

DRAWING A PARALLEL: A COMPARATIVE ANALYSIS OF SPACEPORTS USING THE SPACEPORT READINESS LEVEL SCALE
Patrick McCarthy, Space Florida, Merritt Island, United States; Janet Tinoco, Embry-Riddle Aeronautical University, New Smyrna Beach, United States

IAC-24.D6.3.2

MISSION ANALYSIS AND SIMULATION OF NOMINAL AND OUT-OF-NOMINAL MISSION SCENARIOS FOR SUBORBITAL VEHICLES: AN ITALIAN CASE-STUDY

Emanuela Perricone, Politecnico di Torino, Turin, Italy

IAC-24.D6.3.3 (unconfirmed)

POLAR FRONTIERS, POLAR ORBITS: THE VERTIGINOUS RISE OF ARCTIC COMMERCIAL SPACEPORTS

Mia Bennett, University of Washington, Seattle, United States

IAC-24.D6.3.4

A PRELIMINARY STUDY ON THE TECHNICAL FEASIBILITY OF LAUNCH SITE OPERATIONS UTILIZING A TWO-STAGE REUSABLE LAUNCH VEHICLE FOR ORBITAL MISSIONS FROM THE EAST COAST OF KENYA

Geovian Stower, Kenya Space Agency (KSA), Nairobi, Kenya

IAC-24.D6.3.5

ENABLING SAFE COMMERCIAL SPACEFLIGHT: VEHICLES AND SPACEPORTS

Vidadi Rzaev, Azerbaijan State University of Economics, Sumgait, Azerbaijan

IAC-24.D6.3.6

ON THE NOTION OF TRIBAL SPACEPORTS: OPPORTUNITIES AND CHALLENGES IN THE UNITED STATES

Janet Tinoco, Embry-Riddle Aeronautical University, New Smyrna Beach, United States; Laquila Alonzo, Embry-Riddle Aeronautical University, Daytona Beach, United States

IAC-24.D6.3.7

SPACE WEATHER AND THE IMPACT OF ELECTROMAGNETIC DISTURBANCE ON FLIGHT DELAYS

Ruidi Luo, Harbin Institute of Technology Shenzhen Graduate School, Shenzhen, China

IAC-24.D6.3.9

INVESTIGATING SOUNDING BALLOONS REGULATORY AND TECHNICAL STANDARDS

Giorgio Cardile, AMISDeS Research Center APS, Milano, Italy

IAC-24.D6.3.10

ANALYSIS OF THE CAUSES AND CONSEQUENCES OF LAUNCH FAILURES OVER THE PAST 20 YEARS

David Todd, Slingshot Aerospace, Worthing, United Kingdom

E1. IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM

Coordinator(s): Remco Timmermans, International Space University (ISU), United Kingdom; Seyed Ali Nasser, Space Generation Advisory Council (SGAC), Canada

E1.1. Lift Off: Primary and Secondary Education

October 14 2024, 15:30 — Green Hall 1

Co-Chair(s): Kaori Sasaki, Japan Aerospace Exploration Agency (JAXA), Japan; Seyed Ali Nasser, Space Generation Advisory Council (SGAC), Canada

Rapporteur(s): Kerrie Dougherty, Australia; Alina Vizireanu, Space Generation Advisory Council (SGAC), United Kingdom

IAC-24.E1.1.1

25 YEARS OF CELEBRATING WORLD SPACE WEEK: EVALUATING ANECDOTAL INDICATORS OF THE IMPACT ON SPACE EDUCATION IN AFRICA.

Alma Okpalefe, World Space Week Association, Houston, United States

IAC-24.E1.1.2

ANTARIKSH GYAAN ABHIYAAN: A MISSION TO IGNITE SPACE DREAMS OF YOUNG MINDS FROM UNDERPRIVILEGED COMMUNITIES

Ratnesh Mishra, Durg, India

IAC-24.E1.1.3

CODERDOJO ORADEA SPACE ROBOTICS: FOSTERING FUTURE INNOVATORS THROUGH HANDS-ON SPACE SCIENCE EDUCATION

Daniel-Zoltan Erzse, Oradea, Romania

IAC-24.E1.1.4

EMPOWERING THE NEXT GENERATION OF SPACE INNOVATORS: THE "HOLYSPACE CHALLENGE" AS A REVOLUTIONARY APPROACH TO STEAM EDUCATION

Vered Cohen Barzilay, Out of the Box, Givatayim, Israel

IAC-24.E1.1.5

GEO-ACADEMY: DEVELOPING TEACHER'S SPATIAL SKILLS FOR CLIMATE CHANGE AND SUSTAINABLE DEVELOPMENT EDUCATION

Zaklin Butinar, EURISY, Paris, France

IAC-24.E1.1.6

SPACE EDUCATION FOR HIGH SCHOOL STUDENTS THROUGH THE DEVELOPMENT OF SAGANSATO CUBESAT

Yukihisa Otani, Kyushu Institute of Technology, Kitakyushu, Japan

IAC-24.E1.1.7

STUDENT INFORMED CHOICES ABOUT STEAM: A CASE STUDY FROM VSSEC

Mark Gleeson, Victorian Space Science Education Centre, Strathmore, Australia

IAC-24.E1.1.8

STUDENT SKILLS IMPROVEMENT THROUGH SPACE EDUCATIONAL COMPETITIONS USING AN EDUCATIONAL EXPLORATORY ROVER
PAOLA FERRARELLI, Sapienza University of Rome, ROME, Italy

IAC-24.E1.1.9

THE ZERO ROBOTICS PROGRAM USING ASTROBEE FREE FLYERS WITH HAND GESTURE RECOGNITION FUNCTIONS ON THE INTERNATIONAL SPACE STATION
Yiyun Zhang, Massachusetts Institute of Technology (MIT), Chantilly, United States

IAC-24.E1.1.10

BUILDING A LUNAR COMMUNITY FOR CHILDREN: CHALLENGES OF COOPERATION AND SIMULATING TEAM BUILDING
Haruto Kurono, Hiroshima, Japan

IAC-24.E1.1.11

FROM PIXEL TO INTEL: FOSTERING STEAM ENGAGEMENT AND CLIMATE ACTION THROUGH SPACE EDUCATION
Danielle Oryan, Ben-Gurion University of the Negev, Tel Aviv, Israel

IAC-24.E1.1.12

STARLEAP: AN EDUCATIONAL INITIATIVE TO FOMENT THEORETICAL AND HANDS-ON EXPERIENCE IN EMERGING SPACE NATIONS
Giancarlo Vargas-Villegas, Costa Rica Institute of Technology (ITCR), Cartago, Costa Rica

IAC-24.E1.1.13

DATA INFORMED SPACE EDUCATION PACKAGE FOR SPACE EDUCATION BEGINNER TEACHERS
Naomi Kagawa, Shimane University, Matsue, Japan

E1.2. Space for All: Decolonial Practices in Space

October 15 2024, 10:15 — Green Hall 1

Co-Chair(s): Nelly Ben Hayoun-Stépanian, SETI Institute, United Kingdom; Nahum Romero, KOSMICA, Germany

Rapporteur(s): Valerie Anne Casasanto, NASA Goddard/University of Maryland, Baltimore County (UMBC), United States; Mishaal Ashemimry, Saudi Space Commission (SSC), Saudi Arabia

IAC-24.E1.2.1

“BUILDING AN INCLUSIVE ASTRONOMY COMMUNITY: INSIGHTS FROM THE NILAM MEETING (NATIONAL ASTRONOMICAL RESEARCH INSTITUTE OF THAILAND AND INTERNATIONAL ASTRONOMICAL UNION LGBTQ FOR ASTRONOMY MEETING)”
Ryneer Fandora, Tokyo, Japan

IAC-24.E1.2.2

DECENTRALIZED AUTONOMOUS CONSTRUCTION: THE PROMISE OF EVOLUTIONARY MASTER PLANNING AND SPACE ARCHITECTURE FOR MARGINALIZED ENTITIES ON THE MOON
Melodie Yashar, ICON, Austin, TX, United States

IAC-24.E1.2.3

STUDIES IN MARTIAN RHETORIC: THE MARS ONE SAGA THROUGH THE TELESCOPE OF NARRATIVE PERSUASION
Fiona Collins, Essendon, Australia

IAC-24.E1.2.4

WHOM IS ALL?
Marie-Pier Boucher, University of Toronto, Montreal, Canada

IAC-24.E1.2.5

THE PALESTINE SPACE INSTITUTE: DISRUPTING A CULTURE OF SPACE MILITARISM, COLONIALISM, AND IMPERIALISM
Sahba El-Shawa, Jordan Space Research Initiative (JSRI), Amman, Jordan

IAC-24.E1.2.6

DOPPELGÄNGERS³: INTERGENERATIONAL TRAUMA AND DECOLONIAL FUTURES IN SPACE EXPLORATION
Nelly Ben Hayoun-Stépanian, SETI Institute, London, United Kingdom

IAC-24.E1.2.7

SPACE LESSONS FROM THE DECOLONIAL LEXICON OF THE DUTCH EAST INDIA COMPANY (VOC)
Lauren Alexander, Amsterdam, The Netherlands

IAC-24.E1.2.8

MEMORY MONOLOGUES: ARCHIVING INDIAN SPACE HISTORY
Meera Rohera, Washington, United States

IAC-24.E1.2.9

TOWARDS DECOLONIAL SPACE PERFORMANCE: METHODOLOGIES FROM THEATRE AND PERFORMANCE STUDIES
Felipe Cervera, UCLA, LOS ANGELES, United States

IAC-24.E1.2.10

“THE LANGUAGE BARRIER IN YOUNG RESEARCHERS IN INTERNATIONAL FORUMS: PERSPECTIVES ON MULTICULTURALISM AND ENGLISH PROFICIENCY IN SPACE”
Jahir Santos Germán, Instituto Politécnico Nacional, Mexico City, Mexico

IAC-24.E1.2.11

EXPLORING EXTRATERRESTRIAL GEOGRAPHIES THROUGH THE HISTORICAL LENS OF THE CARIBBEAN ARC: PARALLELS, IMPLICATIONS, AND PERSPECTIVES - MICHELE BOULOGNE, MARIE-LINE MOURIESSE BOULOGNE
Michèle Boulogne, Rotterdam, The Netherlands

IAC-24.E1.2.12

DECOLONIZING SPACE: A CRITICAL EXAMINATION OF COLONIAL LANGUAGE IN THE NAMING OF THE COLUMBUS MODULE
Isa Konga, Essen, Germany

IAC-24.E1.2.13

ANTI-COLONIAL PRACTICES IN ASTROBIOLOGY EDUCATION - RELATIONSHIPS AND COLLABORATION BETWEEN NASA AND INDIGENOUS COMMUNITIES
Daniella Scalice, NASA Ames Research Center, Annapolis, United States

IAC-24.E1.2.14

DECOLONIAL PRACTICES AND SCIENTIFIC DISSEMINATION IN VULNERABLE STATES OF MEXICO, THE ASTROBIOLOGY CASE.
Monserat Ochoa-Altamirano, Universidad Nacional Autónoma de México (UNAM), Tuxtla Gutiérrez, Chiapas, Mexico

IAC-24.E1.2.15

ARE SAFETY ZONES THE COMMENCEMENT OF COLONIZATION OR SPHERES OF INFLUENCE IN SPACE?
George Anthony Long, _none, United States

IAC-24.E1.2.16

HEAR THE SKY - PIONEERING SPACE EDUCATION FOR THE HEARING-IMPAIRED
Reza Sadeghi, Space Generation Advisory Council (SGAC), Kerman, Iran

IAC-24.E1.2.17

ART AND SCIENCE & SPACE CULTURE, A BRAZILIAN EXPERIENCE BRIEF REPORTS ON THE SACI-E PROJECT (SUBJECTIVITY, ART AND SPACE SCIENCES) CARRIED OUT AT INPE (NATIONAL INSTITUTE FOR SPACE RESEARCH BRAZIL/2019-2022)
Fabiane Borges, National Institute for Space Research - INPE, SÃO JOSÉ DOS CAMPOS, Brazil

IAC-24.E1.2.18 (unconfirmed)

OUT ASTRONAUT: ADDRESSING THE LACK OF REPRESENTATION AND INCLUSION OF SEXUAL AND GENDER MINORITIES IN SPACE
Jason Reimuller, San Francisco, United States

IAC-24.E1.2.19

REFLECTION ON THE CONCEPT OF “HUMANITAS” AND ITS IMPLICATIONS FOR DECOLONIALIST PRACTICES IN OUTER SPACE
Veronica Moronese, Povegliano Veronese, Italy

E1.3. On Track: Undergraduate Space Education

October 15 2024, 15:00 — Green Hall 1

Co-Chair(s): Seyed Ali Nasser, Space Generation Advisory Council (SGAC), Canada; Christopher Vasko, European Space Agency (ESA), The Netherlands

Rapporteur(s): Alev Sönmez, Fraunhofer FHR, Germany; Ozan Kara, Technology Innovation Institute (TII), United Arab Emirates

IAC-24.E1.3.1

KEYNOTE: FOUR DECADES OF EDUCATIONAL SATELLITES: HOW TO RUN STUDENT SPACE PROGRAMS

Robert J. Twiggs, Hewitt, United States

IAC-24.E1.3.2 (unconfirmed)

“BEYOND THE HORIZON: SPACE CONCORDIA’S IMPACTFUL SPACE EDUCATION INITIATIVES AND INNOVATIVE LEARNING EXPERIENCES FOR FUTURE AEROSPACE LEADERS”

Rym Chaid, Concordia University, Montreal, Canada

IAC-24.E1.3.3

THE SATELLITE LEARNING LABORATORY: A HANDS ON TRAINING SATELLITE

John Paffett, KISPE Space Systems Limited, Farnborough, United Kingdom

IAC-24.E1.3.4

COMPREHENSIVE LOCAL SPACE CAPACITY BUILDING USING A CUBESAT MODEL AND MICROSATELLITE DEVELOPMENT EXPERTS MENTORING

Paripat Pairat, Geo-Informatics and Space Technology Development Agency (GISTDA), Nakhonpathom, Thailand

IAC-24.E1.3.5

LINX A HANDS-ON APPROACH TO SPACE RESEARCH AND EDUCATION AT UNDERGRADUATE LEVEL

Prof. Gustavo Medina Tanco, Universidad Nacional Autónoma de México (UNAM), Mexico, Mexico

IAC-24.E1.3.6

EMPOWERING THE NEXT GENERATION OF SATELLITE ENGINEERS: A SCALABLE MODEL FOR HANDS-ON SPACE EDUCATION

Jesper Vigtel Hølland, Orbit NTNU, Trondheim, Norway

IAC-24.E1.3.7

FROM GROUND UP: INCORPORATING A LOW-COST GROUND STATION TO MASTER SATELLITE SUBSYSTEMS DESIGN THROUGH DATA HARVESTING

Uxía García Luis, University of Vigo, Ourense, Spain

IAC-24.E1.3.9

INVESTIGATING THE EXPECTATIONS OF THE SPACE TECHNOLOGY STAKEHOLDERS REGARDING SPACE EDUCATION AT POLISH UNIVERSITIES

Natalia Mizera, AGH University of Science and Technology, Zawiercie, Poland

IAC-24.E1.3.10

MULTI-DISCIPLINARY UNDERGRADUATE SPACE EDUCATION PROGRAM DESIGN TO DELIVER POSITIVE GRADUATE EMPLOYMENT OUTCOMES FOR AUSTRALIAN STUDENTS.

Kim Ellis Hayes, Swinburne University of Technology, Windsor, United States

IAC-24.E1.3.11

SPACE4ECES, A PIONEERING SPACE ENGINEERING TRACK FOR FILIPINO ELECTRONICS ENGINEERS IN ADAMSON UNIVERSITY, PHILIPPINES

Mark Angelo Purio, Adamson University, Manila, The Philippines

IAC-24.E1.3.12

SUSTAINABLE SPACE ACTIVITIES (SUSPACT): A NOVEL APPROACH TO IMPLEMENT SUSTAINABILITY IN SPACE EDUCATION COMBINING THEORY AND PRACTICE

Tony Erdmann, Technische Universität Berlin, Berlin, Germany

IAC-24.E1.3.13

THE DEVELOPMENT OF AN UNDERGRADUATE GROUND STATION PROJECT FOR SPACE EDUCATION

Kieron von Buchstab, Carleton University, Markham, Canada

E1.4. In Orbit: Postgraduate Space Education

October 16 2024, 10:15 — Green Hall 1

Co-Chair(s): Manuela Aguzzi, Space Applications Services, Belgium; Sandra Haeuplik-Meusburger, TU Wien, Austria; David Spencer, The Aerospace Corporation, United States

Rapporteur(s): Victor Baptista, Ideia Space, Brazil

IAC-24.E1.4.1

PIONEERING SPACE EDUCATION AT THE POSTGRADUATE LEVEL - THE CASE OF UNIVERSITY OF NORTH DAKOTA

Francisco Del Canto Viterale, Department of Space Studies, University of North Dakota, Grand Forks, United States

IAC-24.E1.4.2

EDUCATION AND SPACE TECHNOLOGY AS TOOLS FOR SOCIAL TRANSFORMATION: OUTCOMES OF THE PARTNERSHIP BETWEEN UNDP AND THE BRAZILIAN SPACE AGENCY

Aline Veloso, Brazilian Space Agency (AEB), Brasilia, Brazil

IAC-24.E1.4.3

SUSTAINABILITY IN AND FROM SPACE: EXPERIENCE FROM THE 1ST SPACE ARCHITECTURE EMBA

Piero Messina, European Space Agency (ESA), Paris, France

IAC-24.E1.4.4

THE EVOLUTION OF COMPUTATIONAL DESIGN AND XR-ENHANCED SPACE ARCHITECTURE EDUCATION

Valentina Sumini, Politecnico di Milano, Milano, Italy

IAC-24.E1.4.5

NAVIGATING THE NEW FRONTIER: AI-DRIVEN EDUCATION IN ASTRODYNAMICS AND SPACE MISSION DESIGN

Davide Conte, Embry-Riddle Aeronautical University, Prescott, AZ, United States

IAC-24.E1.4.6

LESSONS FROM THE LAUNCH: REFLECTIONS FROM THE FIRST SEMESTER OF UIO'S SPACE SYSTEMS PROJECT COURSE

Anja Kohfeldt, University of Oslo, Kjeller, Norway

IAC-24.E1.4.7

INTERUNIVERSITY ORGANIZATION OF THE SPACE STATION DESIGN WORKSHOP

Gisela Detrell, Technical University of Munich, Ottobrunn, München, Germany

IAC-24.E1.4.8

EMERGING NEEDS IN SPACE MEDICINE EDUCATION, RESEARCH, AND TRAINING: A MULTILATERAL PERSPECTIVE

Shawna Pandya, International Institute for astronautical Sciences (IIAS), Sherwood Park, Canada

IAC-24.E1.4.9

EXPLORING WOMEN'S CONTRIBUTIONS IN SPACE: A GAMIFIED EDUCATIONAL APPROACH

Aline Veloso, Brazilian Space Agency (AEB), Brasilia, Brazil

IAC-24.E1.4.10

THE AMERICAN PUBLIC UNIVERSITY SYSTEM'S ANALOG RESEARCH GROUP: SUPPORTING STUDENT EDUCATION THROUGH SPACE ANALOG EXPERIENCES.

Kristen Miller, American Public University System, Charles Town, United States

IAC-24.E1.4.11

RAISING AWARENESS OF ENGINEERING CAREERS IN THE SPACE SECTOR THROUGH PROJECT-ORIENTED DESIGN-BASED LEARNING

Kaja Antle, Deakin University, Docklands, Australia

IAC-24.E1.4.12

PROJECT APTAS - LULEÅ UNIVERSITY OF TECHNOLOGY'S STUDENT CUBESAT: STATUS AND OUTLOOK
Rene Laufer, Luleå University of Technology, Kiruna, Sweden

E1.5. Enabling the Future: Developing the Space Workforce

October 16 2024, 15:00 — Green Hall 1

Co-Chair(s): Kathleen Coderre, Lockheed Martin (Space Systems Company), United States; Olga Zhdanovich, Modis, The Netherlands

IAC-24.E1.5.2

ELEVATING FUTURES: PIONEERING AEROSPACE EDUCATION FOR GRADUATE ADVANCEMENT IN AZERBAIJAN'S SPECIALIZED SCHOOL PROGRAM
Mirvari Alimova, Rome, Italy

IAC-24.E1.5.3

A 21ST CENTURY STEAM EDUCATION PARADIGM: TRAINING NEXTGEN WORKFORCE AND ANALOG ASTRONAUTS WITH FULLY-IMMERSIVE EXPERIENTIAL SIMULATION TRAININGS, VIRTUAL ASTRONAUTICS WORKSHOPS, AND IN-PERSON MISSIONS USING EXPONENTIAL TECHNOLOGY
Susan Ip-Jewell, Lancaster, United States

IAC-24.E1.5.4

INCREASING ACCESS AND OPPORTUNITIES FOR SPACE RESEARCH WITH DSI RESEARCH PROGRAMS
Smit Patel, Airbus Defence & Space, Tettngang, Germany

IAC-24.E1.5.5

LESSONS OF THE ANALYSIS OF THE SPACE INDUSTRY SKILL GAPS – THE LATVIAN PERSPECTIVE
Daivids Stebelis, Riga, Latvia

IAC-24.E1.5.6

LEVERAGING THE ALABAMA SPACE GRANT CONSORTIUM NETWORK: A BLUEPRINT FOR BUILDING A ROBUST STEM WORKFORCE
Debora Nielson, University of Alabama in Huntsville, Huntsville, United States

IAC-24.E1.5.7

REFLECTIONS ON THE FIRST ASLI COLLOQUIUM ON THE AFRICAN OUTER SPACE PROGRAMME
Etim Offiong, University of Pretoria, Pretoria, South Africa

IAC-24.E1.5.8

THE EXPERTISE OF TOMORROW ARE THE STUDENTS OF TODAY
Irit Fried, IAI MBT Space, yehud, Israel

IAC-24.E1.5.9

THE NATIONAL SPACE ACADEMY
Razan Alkaabi, UAE Space Agency, Abu Dhabi, United Arab Emirates; Nourah Alyammahi, UAE Space Agency, Abu Dhabi, United Arab Emirates

IAC-24.E1.5.10

THE ROLE OF INDUSTRY IN EDUCATION
Shae Ingram, Singtel Optus, Warriewood, Australia; Veronica Bainton, Singtel Optus, Sydney, Australia; Chia Tian-Brearne Chen, Singtel Optus, Belrose, Australia

IAC-24.E1.5.11

EMPOWERING THE NEXT GENERATION: INTEGRATING STEM EDUCATION AND SPACE EXPLORATION THROUGH INTERNSHIPS AT SHARJAH ACADEMY FOR ASTRONOMY, SPACE SCIENCES, AND TECHNOLOGY
Antonios Manousakis, Sharjah Academy for Astronomy, Space Sciences and Technology (SAASST), Sharjah, United Arab Emirates

IAC-24.E1.5.12

YOUTH EMPLOYMENT PROGRAM IN SPACE INDUSTRY : REVIEWING THE OPERATIONAL PROCESS OF THE PROGRAM OVER THREE YEARS AND TRACKING AND OBSERVING THE PARTICIPANTS.
Mi-jin Yoo, Korea Aerospace Research Institute (KARI), Daejeon, Korea, Republic of

E1.6. Calling Planet Earth: Large Engagement and Communications Initiatives

October 17 2024, 10:15 — Green Hall 1

Co-Chair(s): Remco Timmermans, International Space University (ISU), United Kingdom; Alina Vizireanu, Space Generation Advisory Council (SGAC), United Kingdom

Rapporteur(s): Chloé Carrière, Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland; Milica Milosev, Econnects, Serbia

IAC-24.E1.6.1

KEYNOTE: CONNECTING SPACE CURIOUS TO THE SPACE SERIOUS
Christina Korp, SPACE for a Better World, Winter Park, United States

IAC-24.E1.6.2

BEYOND BOUNDARIES: BRIDGING THE INCLUSION GAP IN SPACE EDUCATION
Ximena Jovana Ramírez Reyes, Universidad Aeronáutica en Querétaro, Sahagún, Mexico

IAC-24.E1.6.3

BEYOND BOUNDARIES: ENGAGING THE GLOBAL COMMUNITY IN SPACE EDUCATION AND OUTREACH THROUGH CITIZEN SCIENCE
Milica Milosev, Econnects, Novi Sad, Serbia

IAC-24.E1.6.4

EMPOWERING GLOBAL EDUCATION ON THE LUNAR ECONOMY THROUGH "MOONSHOT": A MULTIPLAYER INTERACTIVE SIMULATION
Artur Kurasinski, Warsaw, Poland

IAC-24.E1.6.5

ENGAGING THE GLOBAL COMMUNITY IN SPACE EXPLORATION: INSIGHTS FROM AN INTERDISCIPLINARY MOOC ABOUT MARS
Jasmina Lazendic-Galloway, Eindhoven University of Technology, Eindhoven, The Netherlands

IAC-24.E1.6.6

EXPANDING HORIZONS: INNOVATIONS IN SPACE SCIENCE OUTREACH AND COMMUNICATION
Sourabh Kaushal, SMARTCIRCUITS INNOVATION Private Limited, Jagadhri, India

IAC-24.E1.6.7

FIDESPACIAL - METHODOLOGY FOR THE DIFFUSION AND DISSEMINATION OF AEROSPACE CONTENT TARGETING AT UNIVERSITY STUDENTS THROUGH SOCIAL MEDIA
Randall Obando, Universidad Fidélitas, San Jose, Costa Rica

IAC-24.E1.6.8

FROM DEPRESSION TO ACTION: NON-TRADITIONAL STORYTELLING TOOLS FOR SPACE COMMUNICATION AND OUTREACH IN THE REALM OF SPACE TRAFFIC MANAGEMENT
Judith Delany, Vienna, Austria

IAC-24.E1.6.9

HOW IS THE SPACE COMMUNITY RESPONDING TO MISLEADING INFORMATION AND SCIENCE SCEPTICISM?
Roberta Gregori, European Space Agency (ESA), Paris, France

IAC-24.E1.6.10

PUBLIC PERCEPTION AND ATTITUDES TOWARD SPACE SCIENCE AND TECHNOLOGY IN AN EMERGING SPACE COUNTRY
Yaqoob Alqassab, National Space Science Agency (NSSA), Hidd, Bahrain

IAC-24.E1.6.11

THE HALEY PROJECT: ENHANCING LITERACY IN SPACE LAW IN 21ST CENTURY SOCIAL MEDIA PLATFORMS
Nathan Johnson, The Space Court Foundation Inc., Bainbridge Island, United States

IAC-24.E1.6.12

THE NEW VOYAGER: ASTRONAUTS AND THE MODERN MYTH OF SPACE EXPLORATION
Chiara Limardi, ASI - Italian Space Agency, Viterbo, Italy

IAC-24.E1.6.13

ESTCUBE-2: COMMUNICATING UNCERTAINTY

Sirli Sarapuu, Estonian Student Satellite Foundation (ESTCube), Tallinn, Estonia

IAC-24.E1.6.14

WHAT DO CITIZENS EXPECT FROM SPACE?

Daniel Vrankar, TU Dresden, Dresden, Germany

E1.7. Sending out a Signal: Innovative Outreach and Communications Initiatives

October 17 2024, 15:00 — Green Hall 1

Co-Chair(s): Vera Mayorova, Bauman Moscow State Technical University, Russian Federation; Olga Zhdanovich, Modis, The Netherlands

Rapporteur(s): Carol Christian, STScI, United States; Kaori Sasaki, JAXA, Japan

IAC-24.E1.7.1

EDUCATIONAL ACTIVITIES AND PUBLIC OUTREACH IN SPACE BIOMEDICINE: NEW APPROACHES

Anna Kusssmaul, Institute of Biomedical Problems (IBMP), Russian Academy of Sciences (RAS), Moscow, Russian Federation

IAC-24.E1.7.2

EMPOWERING COMMUNITY SPACE EDUCATION & OUTREACH WITH THE SETI INSTITUTE & A GLOBAL NETWORK OF CITIZEN SCIENTISTS

Lauren Sgro, SETI Institute, Mountain View, United States

IAC-24.E1.7.3

INSPIRING MINDS, CONNECTING WORLDS: INNOVATIVE STRATEGIES IN SPACE EDUCATION AND ITS OUTREACH

Jingnong Weng, Regional Centre for Space Science and Technology Education in Asia and the Pacific (RCSSSTEAP), Beijing, China

IAC-24.E1.7.4

SPACE EDUCATION WITHOUT LIMIT

Miroslava Zenteno Perez, Puebla, Mexico

IAC-24.E1.7.5

LIGHT THE SKY: INNOVATIVE CODING CHALLENGE FOR SPACE EXPLORATION ENGAGEMENT

Rim Ghanim, Afeka Tel Aviv Academic College of Engineering, Akko, Israel; Tohar Barazi, Ben-Gurion University of the Negev, Beer-Sheva, Israel; Shimrit Maman, Ben-Gurion University of the Negev, Omer, Israel

IAC-24.E1.7.6

LUNAR ODYSSEY: AN IMMERSIVE LUNAR MISSION SIMULATION FOR SPACE EDUCATION OUTREACH

Deep Anand, Vellore Institute of Technology, New Delhi, India

IAC-24.E1.7.7

FIVE STEPS TO MASTER THE MAJOR OF "SPACE ENGINEER"

Galina Myasishcheva, Bauman Moscow State Technical University, Moscow, Russian Federation

IAC-24.E1.7.8

SPACE ANALOG COMMUNITY IN BRAZIL: THE CASE OF THE GERAÇÃO DE MARTE AND ITS IMPACT ON BRAZILIAN YOUTH

Luís Santos, Space Generation Advisory Council (SGAC), Parnamirim, Brazil

IAC-24.E1.7.9

SPACE TO SPACE: AN EXHIBITION-EVENT TO TALK ABOUT SPACE SCIENCE

Michèle Lavagna, Politecnico di Milano, Milan, Italy

IAC-24.E1.7.10

STEM: SCIENCE, TECHNOLOGY, ENGINEERING AND MEMES, MOSTLY MEMES

Manfred Ehresmann, Institute of Space Systems, University of Stuttgart, Stuttgart, Germany

IAC-24.E1.7.11

LAUNCHING BETTER OUTREACH: NASA LAUNCH SERVICES PROGRAM'S MODERN APPROACH TO OUTREACH AND EDUCATION
Joan Misner, NASA, Rockledge, United States; Jarrod Bales, NASA, Titusville, United States; Anna Vastola, NASA, Orlando, United States

E1.8. Show Us Space: Demonstration of Hands On Education and Outreach

October 18 2024, 10:15 — Yellow Hall 3

Co-Chair(s): Lyn Wigbels, American Astronautical Society (AAS), United States; Valerie Anne Casasanto, NASA Goddard/University of Maryland, Baltimore County (UMBC), United States
Rapporteur(s): Remco Timmermans, International Space University (ISU), United Kingdom; Marcos Eduardo Rojas Ramirez, Space Generation Advisory Council (SGAC), France

IAC-24.E1.8.1

LUMARNITY VR: OUTREACH ACTIVITY OF LUNAR ISRU PLANT THROUGH IMMERSIVE VIRTUAL REALITY

Takuya Yokoyama, JGC Corporation, Yokohama, Japan

IAC-24.E1.8.2

AGE OF THE MOON: A GAME-BASED APPROACH TO LUNAR INFRASTRUCTURE DEVELOPMENT AND COLLABORATION

Aleksandra Kozawska, Designers in Space Community, Gdansk, Poland

IAC-24.E1.8.3

PROPOSAL OF AN EDUCATIONAL CURRICULUM UTILIZING THE CUBESAT SYSTEM EDUCATION KIT "HEPTA-SAT LITE" FOR LEARNING IN SATELLITE SYSTEM DEVELOPMENT

Masahiko Yamazaki, Nihon University, Chiba, Japan

IAC-24.E1.8.4

THE STORM CHASERS

Yuval Priel, Tel Aviv, Israel

IAC-24.E1.8.5

THE RAMON SPACE RACE PROGRAM: EMPOWERING TEACHERS FOR EARLY CHILDHOOD SPACE EDUCATION

Rim Ghanim, Afeka Tel Aviv Academic College of Engineering, Akko, Israel

IAC-24.E1.8.6

THE SPACE PIANIST: WHEN SCIENCE MEETS ART

Leonardo Barilaro, Paola, Malta

E1.9. Space Culture: New Processes of Public Engagement in Space through Culture and Art

October 18 2024, 13:45 — Green Hall 1

Co-Chair(s): Nelly Ben Hayoun-Stépanian, SETI Institute, United Kingdom; Daniela De Paulis, The Netherlands

Rapporteur(s): Aoife van Linden Tol, European Space Policy Institute (ESPI), United Kingdom; Kerrie Dougherty, Australia

IAC-24.E1.9.1

CREATIVE IMPACT IN THE SPACE INDUSTRY. HARNESSING CREATIVITY AND CULTURE TO ENHANCE THE IMPACT OF SPACE POLICY IN EUROPE AND BEYOND.

Aoife van Linden Tol, European Space Policy Institute (ESPI), London, United Kingdom

IAC-24.E1.9.3

MOON GALLERY: FINAL OPEN CALL AND ROADMAP TOWARDS IMPLEMENTATION OF THE FIRST ART GALLERY ON THE MOON

Anna Sitnikova, Stichting Moon Gallery Foundation, Amsterdam, The Netherlands

IAC-24.E1.9.5

LUNAR EXPLORATION TECHNOLOGY AS CULTURAL HERITAGE: RAISING AWARENESS THROUGH GAMING AND DIGITAL ARCHIVING

Brian Pope, Los Angeles, United States

IAC-24.E1.9.6

THE INDIAN SPACE PROGRAM AND ITS MYRIAD REPRESENTATIONS: AN EXCEPTION IN CONTEMPORARY TIMES
Arko Datto, Kolkata, India

IAC-24.E1.9.7

PLANETARY PUBLIC STACK
MIHA TURŠIČ, Amsterdam, The Netherlands

IAC-24.E1.9.8

NEW SPACE NARRATIVES: CULTIVATING SPACE DESIGNERS BY DESIGN FUTURES APPROACHES
Lin Zhu, Tsinghua University, Beijing, China

IAC-24.E1.9.10

REFRAMING KABUKI IN THE CONTEXT OF SPACE: A DESIGN MANAGEMENT STRATEGIC APPROACH
Shota Iino, University of Tsukuba, setagaya-ku, Japan

IAC-24.E1.9.12

AN ASSEMBLY FOR THE COSMOS: DECOLONIZATION, IMAGINATION AND SPACE DIPLOMACY
Antoine Bertron, Montréal, Canada

IAC-24.E1.9.13

FROM OBSERVATION TO ACTION: INTEGRATING SPACE AND SATELLITE DATA IN AN AMBULATORY EXPERIENCE OF CLIMATE CHANGE
Matjaz Vidmar, The University of Edinburgh, Edinburgh, United Kingdom

IAC-24.E1.9.15

INTERGALACTIC COMMUNE - FESTIVAL OF SPACE CULTURE ANCESTROFUTURISM, COSMISM, TECHNODIVERSITY, TECHNOSHAMANISM
Fabiane Borges, National Institute for Space Research - INPE, SÃO JOSÉ DOS CAMPOS, Brazil

IAC-24.E1.9.16

THE TIDA: SAFEGUARDING UNDERWATER AND COASTAL CULTURAL HERITAGE THROUGH INNOVATIVE AND INCLUSIVE METHODOLOGIES
Anaïs Guy, EURISY, Paris, France

IAC-24.E1.9.17

KSAPÁI: FOSTERING ASTRONOMICAL KNOWLEDGE IN CHILE BY MERGING ART, HISTORY AND SCIENCE.
Isabel Gimenez, Punta Arenas, Chile

IAC-24.E1.9.18

POPCULTURE FOR SCIENCE OUTREACH: THE CASE STUDIES OF 'STRANGEST OF ALL' AND 'LIFE BEYOND US'
Julie Nekola Novakova, Charles University, Prague, Czech Republic

IAC-24.E1.9.19

SPACE ACTS – A WORKSHOP ON UN-EARTHING AND METEORITES AS PHARMAKON
Ralo Mayer, Vienna, Austria

IAC-24.E1.9.20

SPACE AND ARTS: A TRANSDISCIPLINARY, TRANSFORMATIONAL, AND TRANSGENERATIONAL ("THE THREE TS") ART SCIENCE METHODOLOGY FOR EDUCATIONAL- & OUTREACH-DRIVEN SOCIAL BENEFITS AND PUBLIC ENGAGEMENT.
Emanuele Barreca, Vrije Universiteit Brussel (VUB), Brussels, Belgium

E1.10-E11.2. Space Education Outreach and Workforce Development for Emerging Communities

October 17 2024, 15:00 — Yellow Hall 3

Co-Chair(s): Kathleen Coderre, Lockheed Martin (Space Systems Company), United States; Matias Campos, Astralintu Space Technologies, Ecuador

Rapporteur(s): Remco Timmermans, International Space University (ISU), United Kingdom

IAC-24.E1.10-E11.2.1

ANALYSIS OF CHALLENGE TRANSFORMATION INTO OPPORTUNITIES IN DEVELOPING SPACE TELESCOPE FOR ASTRONOMY APPLICATION IN THAILAND
Namthip Prachaona, National Astronomical Research Institute of Thailand (NARIT), Chiang Mai, Thailand

IAC-24.E1.10-E11.2.2

BUILDING TOMORROW'S SPACE WORKFORCE: A DESIGN-THINKING APPROACH
Darcey Watson, The Andy Thomas Space Foundation, Adelaide, Australia; Mandi Dimitriadis, Adelaide, Australia

IAC-24.E1.10-E11.2.3

EN ROUTE TO EDUCATING PUBLIC ADMINISTRATION
Gruszecka Kinga, Polish Space Agency (POLSA), Gdańsk, Poland

IAC-24.E1.10-E11.2.4

EVALUATING THE EFFECTIVENESS OF APSCO PROJECTS IN EXPANDING ACCESS TO QUALITY SPACE EDUCATION ENVIRONMENTS IN THE ASIA-PACIFIC REGION: AN ANALYSIS USING THE OECD DAC CRITERIA
Nicole Villanueva Justino, Beihang University, Lima, Peru

IAC-24.E1.10-E11.2.5

FCUBE1, A LAB IN ORBIT FOR FEELING THE SPACE ENVIRONMENT AND FILLING THE GAPS IN EDUCATION
Sajjad Ghazanfarinia, Tehran, Iran

IAC-24.E1.10-E11.2.6

ASTROLEAP: THE MANARA INITIATIVE UNLEASHING SPACE DREAMS
Raghad Nedal Ali, Space Generation Advisory Council (SGAC), Jordan; Diana ALjbour, Space Generation Advisory Council (SGAC), Amman, Jordan

IAC-24.E1.10-E11.2.7

FOSTERING COLLABORATION AND ADVANCEMENT IN PERU'S AEROSPACE SECTOR: TOWARDS A CENTRALIZED SPACE SCIENCES DATABASE
Frank Raul Quintana Quispe, Lima, Peru

IAC-24.E1.10-E11.2.9

NEPAL'S SPACE WORKFORCE DEVELOPMENT: EDUCATION, INNOVATION AND GLOBAL COLLABORATION
Trishna Shrestha, Nepal Space Foundation, Kathmandu, Nepal

IAC-24.E1.10-E11.2.10

ADVANCING SPACE EXPLORATION WHILE CULTIVATING INCLUSIVITY AND RECOGNIZING IMPACT ON AFRICAN WOMEN AND GIRLS
Selina Hayes, Washington, United States; Udi Philippa, National Space Research and Development Agency (NASRDA), Abuja Nigeria, Abuja, Nigeria

IAC-24.E1.10-E11.2.11

TAKING OFF TOGETHER: SUPPORTING FEMALE PROFESSIONAL INCLUSION IN SLOVAK SPACE ECOSYSTEM
Lenka Tkacova, Slovak Investment and Trade Development Agency (SARIO) - Slovak Space Office, Bratislava, Slovak Republic

IAC-24.E1.10-E11.2.12

SOUTH-ASIAN FEMALE ROLE MODELS IN SPACE INDUSTRY: FROM PROBLEM TO SOLUTION
Yumna Majeed, Space Generation Advisory Council (SGAC), Lahore, Pakistan

IAC-24.E1.10-E11.2.13

REDISCOVERING THE MALDIVIAN NIGHT SKY: RECLAIMING A LOST LOCAL ASTROCULTURE FOR THE NEXT GENERATION OF SPACEFARERS
Raushan Ali Firaq, Maldives Space Research Organisation (MSRO), Male, Maldives

IAC-24.E1.10-E11.2.14

A PERSPECTIVE ON THE BENEFITS OF EXPANDING THE INTERNATIONALIZATION OF THE MAJOR SPACE EVENTS
Monica Elizabeth Rocha de Oliveira, Brazilian Space Agency (AEB), São José dos Campos, Brazil

E2. 52nd IAF STUDENT CONFERENCE

Coordinator(s): Franco Bernelli-Zazzera, Politecnico di Milano, Italy; Marco Schmidt, University Wuerzburg, Germany

E2.1. Student Conference - Part 1

October 14 2024, 15:30 — Green Hall 2

Co-Chair(s): Franco Bernelli-Zazzera, Politecnico di Milano, Italy; Emmanuel Zenou, Institut Supérieur de l'Aéronautique et de l'Espace (ISAE), France

Rapporteur(s): Jeong-Won Lee, Korea Aerospace Research Institute (KARI), Korea, Republic of

IAC-24.E2.1.1

NOVEL ANALYTICAL MODELLING TOOLS FOR THE OPTIMIZATION OF MICRO-RESISTOR THRUSTER PERFORMANCE
Advait Parameswaran, TU Delft, Delft, The Netherlands

IAC-24.E2.1.2

DEVELOPMENT AND TESTING OF A HIGH-THROUGHPUT 90% HYDROGEN PEROXIDE CATALYST BED
Donovan Ngum, North Carolina State University, Raleigh, United States; Nazar Rush, North Carolina State University, Cary, United States

IAC-24.E2.1.3

LASER PROPULSION OF THREE DIMENSIONAL GRAPHENE STRUCTURES FOR SPACE APPLICATIONS
Omnia Khattab, Khalifa University of Science and Technology (KUST), Abu Dhabi, United Arab Emirates

IAC-24.E2.1.4

AN EXPLORATION OF SHAPE-BASED METHODS FOR LOW-THRUST TRAJECTORY OPTIMIZATION
Iñigo Javier Palacios Martínez, Universidad Rey Juan Carlos, Fuenlabrada, Madrid, Spain

IAC-24.E2.1.5

REAL-TIME TRAJECTORY MONITORING AND RECOVERY INTERFACE FOR EXPERIMENTAL ROCKETS
Martha Hernández Torres, Instituto Politécnico Nacional, Tecámac, Mexico

IAC-24.E2.1.6

CONCEPT RESEARCH OF PILOTED SPACECRAFT RADIATION PROTECTION
Arturs Korotkijs, Riga, Latvia

IAC-24.E2.1.7

ADVANCING VERY HIGH-RESOLUTION SAR-TO-EO IMAGE TRANSLATION THROUGH DIFFUSION MODELS: INSIGHTS AND ENHANCEMENTS
Seonhoon Kim, University of Science & Technology of Korea (UST), Daejeon, Korea, Republic of

IAC-24.E2.1.8

MICROGRAVITY EXPERIMENT: GECKO-ADHESIVES IN SPACE DEBRIS CAPTURE
Saksham Verma, University of Alberta, Edmonton, Canada

IAC-24.E2.1.9

ADAPTIVE OPTIMAL CONTROL SYSTEM DESIGN FOR AMATEUR ROCKETS
Madison Weekes, UNSW Australia, Rose Bay, Australia

IAC-24.E2.1.10

ALTERNATIVE SATELLITE SURVIVAL STRATEGY TO COUNTERACT THE THREAT OF SPACE DEBRIS
Michele Santarpia, University of Naples "Federico II", Castellammare di Stabia, Italy

IAC-24.E2.1.11

THE DOLPHIN MISSION: A FEASIBILITY STUDY USING PRELIMINARY SYSTEM DESIGN AND COST ESTIMATION
Megha Choudhary, ISAE-Supaero University of Toulouse, Toulouse, France

IAC-24.E2.1.12

ON THE VARIOUS NUMERICAL METHODS FOR THE SIMULATION AND VALIDATION OF THERMOVIBRATIONALLY-DRIVEN SOLID PARTICLE ACCUMULATION PHENOMENA IN MICROGRAVITY CONDITIONS

Balagopal Manayil Santhosh, University of Strathclyde / Mechanical and Aerospace Engineering, Glasgow, United Kingdom

E2.2. Student Conference - Part 2

October 15 2024, 10:15 — Green Hall 2

Co-Chair(s): Marco Schmidt, University Wuerzburg, Germany; IOANA-ROXANA PERRIER, Institute of Polytechnic Science and Aeronautics (IPSA), France

Rapporteur(s): Emmanuel Zenou, Institut Supérieur de l'Aéronautique et de l'Espace (ISAE), France

IAC-24.E2.2.1

DESIGN, OPTIMIZATION, AND COMPARISON OF FAILURE DETECTION AND ISOLATION METHODS FOR CUBESATS GYROSCOPES
Tatiana Fontana, Leiden, The Netherlands

IAC-24.E2.2.2

THE INTEGRATION OF AN AEROSPIKE NOZZLE WITH HIGH-TEST PEROXIDE MONOPROPELLANT SYSTEMS
Theodore Strobel, RMIT University (Royal Melbourne Institute of Technology), Melbourne, Australia

IAC-24.E2.2.3

SIMPLIFIED METHOD FOR PREDICTING THE SYSTEM RESPONSE TIME OF SATELLITE CONSTELLATIONS
Lucas Scherberger, Fraunhofer - Institut für Kurzezeitdynamik, Ernst-Mach-Institut (EMI), Denzlingen, Germany

IAC-24.E2.2.4

ROBUST AUTONOMOUS RENDEZVOUS, DOCKING AND FORMATION CONTROL OF ELECTRIC LOW-THRUST CHASER SPACECRAFT: A REINFORCEMENT LEARNING APPROACH
Arya Das, Indian Institute of Technology Kanpur, Kanpur, India

IAC-24.E2.2.5

PROPOSAL OF TOUCH-AND-GO SAMPLING PROBE USING SOLID ROCKET PROPELLANT AND ITS GUIDANCE AND CONTROL LAW VIA BRAKING-LINE
Haruhito Ohki, The University of TOKYO, Graduate school, Sagami-hara, Kanagawa, Japan

IAC-24.E2.2.6

NATURAL FIBER REINFORCED COMPOSITES (COCONUT/JUTE/HENEQUEN FIBERS) USED IN THE CONSTRUCTION OF A HIGH-POWER EXPERIMENTAL ROCKET
María Paulina Pantoja Gavidia, Instituto Politécnico Nacional, Morelia, Mexico; Ariana Rossell Tapia Salas, Instituto Politécnico Nacional, Tuxpan de Rodríguez Cano, Mexico

IAC-24.E2.2.7

ROBUST TRAJECTORY OPTIMIZATION WITH ORTHOGONAL COLLOCATION METHODS FOR ASCENDING ROCKET STAGES IN EARLY PHASES OF MISSION DESIGN
Ludovico Bravetti, Telespazio, Delft, The Netherlands

IAC-24.E2.2.8

LOW-COST SATELLITE ANGULAR VELOCITY DETERMINATION METHOD THROUGH OPTICAL FLOW TRACKING BASED ON FLOWNET
Park Seongjin, Seoul National University, Seoul, Korea, Republic of

IAC-24.E2.2.9

CONVEX OPTIMIZATION OF Cislunar TRANSFERS EXPLOITING BALLISTIC CAPTURE TRAJECTORIES
Ippolita Jacini, Politecnico di Milano, Milan, Italy

IAC-24.E2.2.10

KNOWLEDGE MANAGEMENT STRATEGIES FOR AN EVOLVING SPACE SECTOR: A COMPARATIVE CASE STUDY OF THE SWEDISH SPACE CORPORATION'S (SSC) AND THE SPACE GENERATION ADVISORY COUNCIL'S (SGAC) METHODS

Marie Lambert, Space Generation Advisory Council (SGAC), Kiruna, Sweden

IAC-24.E2.2.11

ELECTRIC PROPULSION SYSTEM SIZING FOR MARTIAN ROTORCRAFT

Jared Orrick, University of Manchester, Salford, United Kingdom

IAC-24.E2.2.12

CONVOLUTIONAL NEURAL NETWORK AND HOMOGENIZATION BASED HYBRID APPROACH FOR LATTICE STRUCTURES

Mohammed Abir Mahdi, Purdue University, Lafayette, United States

E2.3-GTS.4. Student Team Competition

October 15 2024, 15:00 — Yellow Hall 1

Co-Chair(s): Emmanuel Zenou, Institut Supérieur de l'Aéronautique et de l'Espace (ISAE), France; Franco Bernelli-Zazzera, Politecnico di Milano, Italy

Rapporteur(s): Kathleen Coderre, Lockheed Martin (Space Systems Company), United States

IAC-24.E2.3-GTS.4.1

DESIGN, EVALUATION AND TESTING OF AN ETHANOL/LOX SOUNDING ROCKET PROPELLED BY A REGENERATIVELY COOLED ROCKET ENGINE WITHIN THE STUDENT INITIATIVE WARR

David Haberl, WARR, Garching, Germany

IAC-24.E2.3-GTS.4.2

LABORATORY ANALOGUES OF BLACK SMOKER HYDROTHERMAL VENT MINERAL FACIES RELEVANT TO PLANETARY SCIENCE

Tully Mahr, Jet Propulsion Laboratory - California Institute of Technology, Parkville, Australia

IAC-24.E2.3-GTS.4.3

INFLIGHT ZERO G TEST OF A CUBE-SHAPED ROBOT DESIGNED FOR THE EXTRAVEHICULAR ACTIVITIES

Hortense Caizergues, Institut Polytechnique des Sciences Avancées (IPSA), Ivry sur seine, France

IAC-24.E2.3-GTS.4.4

TALOS: DEVELOPING THE FIRST GREEK ROVER FOR THE EUROPEAN ROVER CHALLENGE - DESIGN, IMPLEMENTATION, AND LESSONS LEARNED FROM A MARS SIMULANT MISSION.

Efstathios Chachamis, Beyond Orbit, Athens, Greece

IAC-24.E2.3-GTS.4.5

DESIGN OF 3U LEOPARD CUBESAT WITH DEPLOYABLE SOLAR PANELS FROM INTEGRATION TO STRUCTURAL AND VIBRATION ANALYSIS

Hery Steven Mindarno, Laboratory of Spacecraft Environment Interaction Engineering, Kyushu Institute of Technology, Kitakyushu, Japan

IAC-24.E2.3-GTS.4.6

A MODERN APPROACH TO DESIGN AND OPTIMISATION OF THE CAVOUR SOUNDING ROCKET FINS SET

Michał Zawadzki, Politecnico di Torino, Torino, Italy; Orlando Nardo, Politecnico di Torino, Torino, Italy; Emir Topakci, Politecnico di Torino, Torino, Italy

IAC-24.E2.3-GTS.4.7

TRACY: SOUNDING ROCKET TELEMETRY SYSTEM WITH IMPROVED STABILITY THROUGH AUTOMATIC CONTROL OF DIRECTIONAL ANTENNA

Jooyong Yang, Seoul National University, Seoul, Korea, Republic of

IAC-24.E2.3-GTS.4.8

MEXICAN SUSTAINABLE SOLID PROPELLANT FOR SPACE EXPLORATION: VALIDATED PERFORMANCE THROUGH HOT FIRE STATIC TESTS"

Oscar Matías Hernández García, Ciudad de México, Mexico

IAC-24.E2.3-GTS.4.9

SHARING HERITAGE OF SLUGG ESA ACADEMY EXPERIMENTS PROJECT

Szymon Krawczuk, Gdansk University of Technology, Gdansk, Poland

IAC-24.E2.3-GTS.4.10

DA VINCI SATELLITE – ELEVATING EDUCATION

Kim Regnerij, TU Delft, The Hague, The Netherlands; Pepijn Jeukens, TU Delft, Delft, The Netherlands; Mehrdad Mihankhah, TU Delft, The Hague, The Netherlands

IAC-24.E2.3-GTS.4.11

IDET-SAT: A CUBESAT DESIGN FOR SPACE DEBRIS DETECTION AND ANALYSIS

Kuang Sun, University of Nottingham, Nottingham, United Kingdom

IAC-24.E2.3-GTS.4.12

LUNAR SUB-TERRA: AN INNOVATIVE SELF-INTEGRATING HABITATION UNIT

Anthony Sfeir, Politecnico di Milano, Milano, Italy; Anna Vock, Politecnico di Milano, Milano (MI), Italy; Alessandro Mosut, Politecnico di Milano, Milan, Italy

E2.4. Educational Pico and Nano Satellites

October 16 2024, 10:15 — Green Hall 2

Co-Chair(s): Xiaozhou Yu, Dalian University of Technology (DUT), China; Franco Bernelli-Zazzera, Politecnico di Milano, Italy; Anna Guerman, Centre for Mechanical and Aerospace Science and Technologies (C-MAST), Portugal; Igor V. Belokonov, Samara National Research University (Samara University), Russian Federation

IAC-24.E2.4.1

THE ON-BOARD COMPUTER OF THE ACUBESAT MISSION

Konstantinos Tsoupos, Aristotle University of Thessaloniki, Thessaloniki, Greece

IAC-24.E2.4.2

VIBES PIONEER: HOW BREMEN'S FIRST STUDENT-BUILT SATELLITE IS TAKING THE CONSUMER ELECTRONICS REVOLUTION TO SPACE

Enes Basata, Hochschule Bremen, Bremen, Germany

IAC-24.E2.4.4

LOW COST PICO SATELLITE BUS FOR EDUCATIONAL AND PERSONAL SCIENTIFIC SPACE MISSION

Kevin Tang, São Paulo, Brazil

IAC-24.E2.4.5

VOIDCUBE: A VERSATILE INTERCONNECTED PLATFORM FOR PAYLOAD SUPPORT

Paolo Roncoroni, Luleå University of Technology, Kiruna, Sweden; Grzegorz Kunowski, Luleå University of Technology, Kiruna, Sweden

IAC-24.E2.4.6

DEVELOPMENT OF AN S-BAND PATCH ANTENNA FOR CUBESAT STUDENT MISSIONS

Alfredo Ivorra-Sineiro, University of Vigo, Vigo, Spain

IAC-24.E2.4.7

EMBEDDED HARDWARE DESIGN AND DEVELOPMENT GUIDE OF AN ON-BOARD COMPUTER FOR ACADEMIC CUBESAT MISSIONS

Jefrey René Hipp Méndez, Universidad de San Carlos de Guatemala, USAC/CUNOC, San Lucas, Guatemala; Luis Alfonso Pinzón Fuster, Guatemalan Association of Engineering and Space Sciences (AGICE), Guatemala, Guatemala; Misael Landero, National Autonomous University of Honduras (UNAH), Tegucigalpa, Honduras

IAC-24.E2.4.8

MEASUREMENT AND CONTROL SYSTEM OF LARGE AEROSTAT PLATFORM BASED ON MICRO-NANO SATELLITE ASSISTANCE

Yani Li, Northwestern Polytechnical University, Xi'an, China

IAC-24.E2.4.9

THE DEVELOPMENT OF SPACE AUTONOMOUS RENDEZVOUS AND DOCKING OF CUBIC SATELLITES FOR IN-ORBIT CONSTRUCTION MISSION

Xin Chen, Innovation Academy for Microsatellites, Chinese Academy of Sciences, Shanghai, China

IAC-24.E2.4.10

WOLFSAT-1: A 1U CUBESAT TO MONITOR ENZYME ACTIVITY OF IDEONELLA SAKAIENSIS IN THE MICROGRAVITY
Alex Castronovo, BLUECUBE Aerospace, Palm Beach Gardens, United States; Dylan Kiesling, BLUECUBE Aerospace, Jupiter, United States; Daniel Portas-Levy, BLUECUBE Aerospace, Boca Raton, United States; Paul Kiesling, BLUECUBE Aerospace, Jupiter, United States; Kevin Simmons, BLUECUBE Aerospace, Palm Beach Gardens, United States

IAC-24.E2.4.11

PROJECT IGNIS: CUBESAT-BASED EARTH THERMAL OBSERVATION USING COTS IMAGING TECHNOLOGY
Rossana Tortale, University of Naples "Federico II", Teverola, Italy

IAC-24.E2.4.12

ASSEMBLY, INTEGRATION AND TESTING PROCESS FOR THE OIRTHIRSAT STUDENT NANOSATELLITE
Lewis McNish, School of Physics & Astronomy, University of Glasgow, Glasgow, United Kingdom

E3. 37th IAA SYMPOSIUM ON SPACE POLICY, REGULATIONS AND ECONOMICS

Coordinator(s): Jacques Masson, European Space Agency (ESA), The Netherlands; Bernhard Schmidt-Tedd, Leuphana University, Germany; Pieter Van Beekhuizen, Stichting Space Professionals Foundation (SSPF), The Netherlands

E3.1. International cooperation in using space for sustainable development: The "Space2030" agenda

October 15 2024, 10:15 — Brown Hall 2

Co-Chair(s): Dumitru-Dorin Prunariu, Commission d'Astronautique de l'Académie Roumaine, Romania; Niklas Hedman, United Nations Office for Outer Space Affairs, Austria; Bernhard Schmidt-Tedd, Leuphana University, Germany

Rapporteur(s): Alexander Soucek, Austrian Space Forum, Austria; Peter Stubbe, DLR (German Aerospace Center), Germany

IAC-24.E3.1.1

IN SPACE AS IT IS ON EARTH: SPACE AS A PHYSICAL LOCATION FOR SUSTAINABLE DEVELOPMENT AND THE INTERNATIONAL COOPERATION IT REQUIRES

Juliana Rinaldi-Semione, University of Nottingham, Nottingham, United Kingdom

IAC-24.E3.1.2

INTERNATIONAL COOPERATION IN USING SPACE FOR SUSTAINABLE DEVELOPMENT: THE "SPACE2030" AGENDA
Zanbag Shirinova, Azerbaijan State University of Economics, Baku, Azerbaijan

IAC-24.E3.1.3

LEVERAGING REGIONAL ORGANIZATIONS FOR ENHANCED CAPACITY-BUILDING IN GLOBAL SPACE GOVERNANCE
Kiran Mohan Vazhapully, New Delhi, India

IAC-24.E3.1.4

NEW REGIONAL SPACE AGENCIES: STEPS TOWARD COOPERATIVE GOVERNANCE
Federico Bonarota, Student, Rome, Italy

IAC-24.E3.1.5

PATHWAYS FOR THE IMPLEMENTATION OF THE UN SPACE2030 AGENDA: A COMPREHENSIVE VIEW OF THE IMPACT OF SPACE ON SOCIAL AND ENVIRONMENTAL SUSTAINABILITY
Sahba El-Shawa, Jordan Space Research Initiative (JSRI), Amman, Jordan

IAC-24.E3.1.6

SPACE 4 ALL, SPACE 4 PEACE, A SPACE 18TH SDG FOR THE 2030 U.N. AGENDA
Adriano V. Autino, Space Renaissance International, Fino Mornasco (CO), Italy

IAC-24.E3.1.7

ADVANCING THE SPACE2030 AGENDA THROUGH SPACE4WOMEN
Elise Stephenson, Australian National University (ANU), New South Wales, Australia

IAC-24.E3.1.8

ASEAN WAYS FOR SUSTAINABLE DEVELOPMENT SPACE POLICY AND TECHNOLOGY
Sathit Piluntasopon, National Astronomical Research Institute of Thailand (NARIT), Muang Chiang Mai, Thailand

IAC-24.E3.1.9 (unconfirmed)

COLLABORATIVE SPACE PROGRAM, KEY TO SUSTAINABLE DEVELOPMENT GOALS: A CASE FOR ECOWAS.

Barnabas Okike-Osisiogu, University of Nigeria Enugu Campus, Enugu, Nigeria

IAC-24.E3.1.11

THE NEW MULTILATERAL AGREEMENT FOR THE HIGH SEAS: WHAT ROLE FOR SPACE?

Gabriele Redigonda, University of Firenze, Arezzo, Italy; Alberto Rueda Carazo, European Space Policy Institute (ESPI), Jaén, Spain

IAC-24.E3.1.12

REGULATION OF ROCKET FUEL EMISSIONS IN LIGHT OF SDGS AND SPACE30 AGENDA

Sanchi Dhamija, BOMBARDIER AÉRONAUTIQUE, Montreal, Canada

E3.2. The future of space exploration and innovation

October 15 2024, 15:00 — Brown Hall 2

Co-Chair(s): Marc Haese, DLR, German Aerospace Center, Germany; Nicolas Peter, International Space University (ISU), France

Rapporteur(s): Claudiu Mihai Taiatu, International Space University (ISU), France

IAC-24.E3.2.1

A NEW SCRAMBLE FOR THE MOON? THE GEO(POLITICS) OF INTERNATIONAL COOPERATION IN SPACE EXPLORATION

Jana Fey, International Space University (ISU), Illkirch-Graffenstaden, France

IAC-24.E3.2.2

THE FUTURE OF SPACE EXPLORATION – PERSPECTIVES FROM DATA DRIVEN FORESIGHT

Jasper Korte, DLR (German Aerospace Center), Sankt Augustin, Germany

IAC-24.E3.2.3

COOPERATION AND COMPETITION IN COLLABORATIVE INTERNATIONAL HUMAN SPACE EXPLORATION VENTURES

Adriana Thomé, Sao Sebastiao, Brazil

IAC-24.E3.2.4

GLOBAL GOVERNANCE OF LUNAR EXPLORATION IN A NEW ERA: A RECOMMENDED FRAMEWORK

Hui Du, Institute of Spacecraft System Engineering, China Academy of Space Technology (CAST), Beijing, China

IAC-24.E3.2.5

INVESTIGATING THE SOCIAL, POLITICAL AND LEGAL REASONS BEHIND CHOICES OF AFRICAN NATIONS TOWARDS ARTEMIS OR ILRS

Kofoworola Faleti, SpaceWatch Global, Ibadan, Nigeria

IAC-24.E3.2.6

THE INTERNATIONAL LUNAR RESEARCH STATION AND ARTEMIS PROGRAM: COOPERATION AND COMPETITION?

Xiaodan Wu, China Central University of Finance and Economics, Beijing, China

IAC-24.E3.2.7

NAVIGATING SPACE ALLIANCES: BRAZIL IN THE US-CHINA RIVALRY

Vinicius Guedes Gonçalves de Oliveira, Flinders University, Adelaide, Australia

IAC-24.E3.2.8

SPACE DIPLOMACY: BRINGING SPACE EXPLORATION STAKEHOLDERS TOGETHER

Mai'a Cross, Northeastern University, Canton, MA, United States; Saadia Pekkanen, University of Washington, Seattle, United States

IAC-24.E3.2.9

PATTERNS OF INTERNATIONAL COOPERATION IN Cislunar SPACE: A NETWORK ANALYSIS APPROACH

Svetla Ben-Itzhak, The Johns Hopkins University, Springfield, United States

IAC-24.E3.2.10

ASSESSING THE REVENUE STREAMS OF COMMERCIAL SPACE STATIONS: A VALUE NETWORK APPROACH

Alessandro Paravano, Politecnico di Milano, Buccinasco, Italy

IAC-24.E3.2.11

TO THE MOON AND BACK: LIMITS OF THE EXPLOITATION OF LUNAR RESOURCES

Ingrid Di Lucia, Agenzia Spaziale Italiana (ASI), Roma, Italy; Flaminia Smoquina, Agenzia Spaziale Italiana (ASI), Rome, Italy

IAC-24.E3.2.12

THE EVOLUTION OF SPACE EXPLORATION

Yagub Ahmadov, Azerbaijan State University of Economics, Baku, Azerbaijan

IAC-24.E3.2.13

THE ROYAL SOCIETY'S 'PERSPECTIVE ON SPACE'

Martin Sweeting, Surrey Satellite Technology Ltd (SSTL), Guildford, Surrey, United Kingdom

E3.3. Space Economy Session – A focus on space sustainable operations and the role of governments I to stimulate sustainable economic development for both in space and on earth.

October 16 2024, 10:15 — Brown Hall 2

Co-Chair(s): Pieter Van Beekhuizen, Stichting Space Professionals Foundation (SSPF), The Netherlands; Henry Hertzfeld, Space Policy Institute, George Washington University, United States

Rapporteur(s): Luigi Scatteia, PricewaterhouseCoopers Advisory (PwC), France; Bhavya Lal, National Aeronautics and Space Administration (NASA), United States

IAC-24.E3.3.1

KEYNOTE: EXPANDING THE HORIZONS OF INDIAN COMMERCIAL SPACE SECTOR THROUGH POLICY, REGULATION AND COLLABORATION

Pawan Goenka, Indian National Space Promotion Authorization Centre (IN-SPACe), India

IAC-24.E3.3.2

TOWARDS A SUSTAINABLE LUNAR ECONOMY : INCENTIVIZING AND REGULATING FUTURE LUNAR VENTURES IN A QUEST FOR A SUSTAINABLE LONG-TERM PRESENCE

Alessandro Calzi, PricewaterhouseCoopers Advisory (PwC), Asnieres-Sur-Seine, France

IAC-24.E3.3.3

LEVERAGING A CIRCULAR ECONOMY FOR SPACE SUSTAINABILITY: GOVERNMENT ROLES AND ECONOMIC IMPACTS

Thomas Groesbeck, The MITRE Corporation, McLean, United States

IAC-24.E3.3.4

THE NON-SPACE SECTOR OPPORTUNITIES FOR A SUSTAINABLE NEW SPACE ECONOMY

Vito Bellomo, Toulouse Business School, Polignano a mare, Italy

IAC-24.E3.3.5

MODELING SUSTAINABLE SPACE SCIENCE AND TECHNOLOGY INVESTMENT IN SUB-SAHARAN AFRICAN ECONOMIES: THE SPACE SCIENCE AND TECHNOLOGY INVESTMENT FRAMEWORK

Carla Sharpe (Mitchell), SKA South Africa, Franschhoek, South Africa

IAC-24.E3.3.6

DEBRIS DILEMMA: SPACE DEBRIS MANAGEMENT AND THE TRAGEDY OF THE COMMONS

Ellesha Dunn, London Economics, London, United Kingdom; Philip Hagelberg, London Economics, London, United Kingdom; Su-Min Lee, London Economics, London, United Kingdom

IAC-24.E3.3.7

THE FUTURE OF SPACE SUSTAINABILITY

Marianna Valente, Politecnico di Torino, Turin, Italy

IAC-24.E3.3.8

FROM SPACE TO EARTH: ECONOMICS AND ENVIRONMENTAL IMPACTS OF SPACE ACTIVITIES ON GLOBAL SUSTAINABILITY

Ciara Brown, Defence Science and Technology Laboratory (DSTL), Wiltshire, United Kingdom

IAC-24.E3.3.9

FOSTERING A COMMERCIALLY VIABLE MARKET FOR SPACE DISPOSAL SERVICES

Timothy Maclay, ClearSpace, Inc., Lincoln, United States

IAC-24.E3.3.10

THE SOCIO-ECONOMIC BENEFITS OF GRAVITY VARIATION RESEARCHES: A CASE STUDY OF TERRESTRIAL MICROGRAVITY PLATFORMS, METHODS, AND EXAMPLES FOR LIFE SCIENCES

Roshaan Nadeem, Institute of Space Technology (IST), Lahore, Pakistan

IAC-24.E3.3.11

FISCAL MEASURES FOR SPACE SUSTAINABILITY: NAVIGATING TAX POLICY IN A GLOBAL CONTEXT

Erika Isabella Scuderi, University of Florida, Gainesville, United States

E3.4. Assuring a Safe, Secure and Sustainable Environment for Space Activities

October 16 2024, 15:00 — Brown Hall 2

Co-Chair(s): Peter Stubbe, German Aerospace Center (DLR), Germany; Jana Robinson, The Prague Security Studies Institute, Czech Republic

Rapporteur(s): Gina Petrovici, German Space Agency, Germany

IAC-24.E3.4.1

A DETERRENCE FRAMEWORK FOR ASAT OPERATIONS IN SPACE WEAPONIZATION

Pranjal Mhatre, Space Generation Advisory Council (SGAC), Alibag, India

IAC-24.E3.4.2

EXPLORING THE EFFECTIVENESS OF MANEUVERING GUIDELINES FOR SPACE TRAFFIC MANAGEMENT

Mariel Borowitz, National Oceanic and Atmospheric Administration (NOAA), Atlanta, GA, United States

IAC-24.E3.4.3

REFRAMING SPACE LAW: TAILORING INTERNATIONAL AND NATIONAL LEGAL STRUCTURES TO FACILITATE NUCLEAR PROPULSION IN DEEP SPACE EXPLORATION

KangSan Kim, Space Generation Advisory Council (SGAC), Incheon, Korea, Republic of

IAC-24.E3.4.4

NON-INTERFERENCE OF LUNAR ACTIVITIES

Therese Jones, NASA, Washington, DC, United States

IAC-24.E3.4.5

THE INTERPRETATION OF GENERAL INTERNATIONAL LAW IN SPACE SCENARIO: NECESSITY AND URGENCY — TAKING THE APPLICATION OF THE DISTINCTION PRINCIPLE UNDER IHL AS AN EXAMPLE

Guoyu Wang, *Beijing Institute of Technology (BIT), BEIJING, China*;
Chengyun Zhang, *Beijing Institute of Technology (BIT), Beijing, China*

IAC-24.E3.4.6

A TRANSDISCIPLINARY APPROACH TO PROTECT THE DARK AND QUIET SKY: A NEW IAA STUDY

Martin von der Ohe, *Einbeck, Germany*

IAC-24.E3.4.7

THE ROLE OF ITU IN DEVELOPMENT OF EQUITABLE AND SUSTAINABLE LUNAR ACTIVITIES

Veronique Glaude, *International Telecommunication Union (ITU), Geneva, Switzerland*;
Cessy Karina, *International Telecommunication Union (ITU), Geneva, Switzerland*

IAC-24.E3.4.8

BEHAVIORAL ECONOMICS IN SPACE: STEERING THE FUTURE OF SPACE GOVERNANCE FOR SECURITY AND SUSTAINABILITY

Zhanna Malekos Smith, *The MITRE Corporation, McLean, United States*

IAC-24.E3.4.9

COMPARATIVE ANALYSIS OF REGULATORY REGIMES GOVERNING PRIVATE SECTOR LAUNCH FROM CELESTIAL BODIES

Michael Mineiro, *Akin, Vienna, Virginia, United States*

IAC-24.E3.4.10

SPACE SUSTAINABILITY POLICY AND BEST PRACTICES: SECURE WORLD FOUNDATION'S HANDBOOK FOR NEW ACTORS IN SPACE

Krystal Azelton, *Secure World Foundation, Falls Church, United States*

IAC-24.E3.4.11

TOWARD A TECHNICAL POLICY FRAMEWORK FOR MITIGATING SPACE DEBRIS IMPACT AND PREVENTING THE ONSET OF KESSLER SYNDROME

Gianluca Borgo, *University of Southampton, Poole, United Kingdom*

IAC-24.E3.4.12

DEVELOPING ADAPTIVE SPACE GOVERNANCE BASED ON TERRESTRIAL EXAMPLES

Maya Harris, *Massachusetts Institute of Technology (MIT), Cambridge, United States*

E3.6. Space Sector's Commercial Transformation: Procurement Opportunities and Financial Transparency

October 17 2024, 15:00 — Brown Hall 2

Co-Chair(s): Christine Klein, *European Space Agency (ESA), France*; Henry Hertzfeld, *Space Policy Institute, George Washington University, United States*

Rapporteur(s): Karina Miranda Sanchez, *ESA, The Netherlands*

IAC-24.E3.6.1

SPACE INSURANCE AND HOW STARSHIP WILL CHANGE THE INDUSTRY FOREVER

Bennett Torrance, *Boeing, Hermosa Beach, United States*

IAC-24.E3.6.2

PUBLIC-PRIVATE RELATIONS: A REVIEW OF DIFFERENT PROCUREMENT MECHANISMS

Sara Dalledonne, *European Space Policy Institute (ESPI), Vienna, Austria*

IAC-24.E3.6.3

COUNTING STARS AND COSTS: AN EMPIRICAL EXAMINATION OF SPACE LAUNCH COST TREND AT NASA

Moon Kim, *NASA, Washington, United States*

IAC-24.E3.6.4

E-RATES: ESTABLISHING SME HOURLY RATES THROUGH STANDARDIZED PROCESSES

Alan Pelletier, *ESA, Noordwijk ZH,, The Netherlands*

IAC-24.E3.6.5

NAVIGATING RISKS AND REWARDS IN THE EVOLUTION OF GOVERNMENT AGENCY SPACE PROGRAMME ACQUISITION STRATEGIES

Victoria Carter-Cortez, *PricewaterhouseCoopers Advisory (PwC), Paris, France*

IAC-24.E3.6.8

ROUNDTABLE DISCUSSION

Karina Miranda Sanchez, *ESA, The Netherlands*

E4. 58th IAA HISTORY OF ASTRONAUTICS SYMPOSIUM

Coordinator(s): A. Ingemar Skoog, *Germany*; Tal Inbar, [unlisted], *Israel*; Otfried G. Liepack, *National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, United States*; Sandra Haeuplik-Meusburger, *TU Wien, Austria*

E4.1. Memoirs & Organisational Histories

October 16 2024, 15:00 — Brown Hall 1

Co-Chair(s): Kerrie Dougherty, *Australia*; Otfried G. Liepack, *National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory, United States*

Rapporteur(s): Niklas Reinke, *Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany*; Philippe Cosyn, *Independent scholar, Belgium*

IAC-24.E4.1.1

A MEMOIR OF MARSHA FREEMAN, SPACE HISTORIAN
William Cuthbert Jones, *Executive Intelligence Review News Service, Leesburg, VA, United States*

IAC-24.E4.1.2

MORITZ PÖHLMANN (1881-1964): AN ENIGMATIC INVENTOR AND HIS KEY ROLE IN THE DEVELOPMENT OF THE A-4 (V-2) ROCKET
Thomas Breit, *Alzey, Germany*

IAC-24.E4.1.3

WERNER BRÜGEL, EDITOR OF "MEN OF THE ROCKET", 1933 - A FORBIDDEN SPACE CAREER
Karlheinz Rohrwild, *Hermann-Oberth-Raumfahrt Museum e.V., Nürnberg, Germany*

IAC-24.E4.1.4

FRED HAISE: THE LUNAR MODULE PILOT OF APOLLO 13
Andrew Erickson, *Naval War College/Harvard University, Newport, United States*

IAC-24.E4.1.5

LUCIEN RUDAUX, SCIENCE POPULARIZER AND THE FIRST SPACE PAINTER (1874-1947)
Philippe Jung, *Airbus SAS, Grasse, France*

IAC-24.E4.1.6

BORIS EGOROV: THE WORLD'S FIRST PHYSICIAN-COSMONAUT. DEDICATED TO THE ANNIVERSARY OF HIS FLIGHT
Anna Kussmaul, *Institute of Biomedical Problems (IBMP), Russian Academy of Sciences (RAS), Moscow, Russian Federation*

IAC-24.E4.1.7

CHRONICLING A 60-YEAR JOURNEY - PAST, PRESENT, AND FUTURE OF VIKRAM SARABHAI SPACE CENTRE - THE MOTHER CENTRE OF INDIAN SPACE RESEARCH ORGANISATION
Abhishek Sharma, *Indian Space Research Organization (ISRO), THIRUVANANTHAPURAM, India*

IAC-24.E4.1.8

FROM ANCOSPAR TO THE AUSTRALIAN SPACE OFFICE: EARLY PROPOSALS FOR AN AUSTRALIAN NATIONAL SPACE AGENCY (1959-1987)

Kerrie Dougherty, Broadway, NSW, Australia

IAC-24.E4.1.9

THE REGISTRATION CONVENTION AT 50

Hannes Mayer, Karl Franzens Universität Graz, Bierbaum am Auersbach, Austria

IAC-24.E4.1.10

A MEMORY OF PROFESSOR JOAN ORÓ ON THE CENTENNIAL OF HIS BIRTH.

Antoni Perez-Poch, Institut d'Estudis Espacials de Catalunya (IEEC), Barcelona, Spain

IAC-24.E4.1.12

THE APOGEE OF ROCKET SOCIETIES IN ARGENTINA (1950 TO 1970)

Pablo de León, Department of Space Studies, University of North Dakota, Grand Forks, United States

E4.2. Organizational, Scientific and Technical Histories

October 17 2024, 10:15 — Brown Hall 1

Co-Chair(s): Vera Pinto Gomes, European Commission, Belgium; Sandra Haeuplik-Meusburger, TU Wien, Austria

Rapporteur(s): Hannes Mayer, Karl Franzens Universität Graz, Austria; Randy Liebermann, United States

IAC-24.E4.2.1

THE UNTOLD STORY OF THE US-SOVIET MISSION TO THE MOON

William Cuthbert Jones, Executive Intelligence Review News Service, Leesburg, VA, United States

IAC-24.E4.2.3

THE CLEMENTINE MISSION TO THE MOON

Trevor Sorensen, University of Hawaii, Honolulu, United States

IAC-24.E4.2.4 (unconfirmed)

EARLY VENTURES INTO THE COMMERCIAL SPACE: LESSONS AND LEGACIES FOR THE MODERN ERA

Davide Sivoletta, Springer, the Language of Science, Hemel Hempstead, United Kingdom

IAC-24.E4.2.5

CANADARM, CANADARM2, AND CANADARM3: THE EVOLUTION OF CANADA'S ICONIC ROBOTIC SYSTEM AND ITS IMPACTS FROM SPACE DOWN TO EARTH

Yianni Hudon-Castillo, Polytechnique Montreal, Montréal, Canada; Jean-Christophe Lamanque, McGill University, Saint-Sauveur, Canada; Marion Thénault, Concordia University, Stoneham-Et-Tewkesbury, Canada

IAC-24.E4.2.6

SALYUT AND SKYLAB - THE ORIGINS, DEVELOPMENT AND LEGACY OF THE FIRST SPACE STATIONS

Amer Khan, Dubai, United Arab Emirates

IAC-24.E4.2.7

THE HISTORY OF SOLAR THERMAL POWER IN SPACE APPLICATIONS

Michael Ciancone, National Aeronautics and Space Administration (NASA), Johnson Space Center, Houston, United States

IAC-24.E4.2.8

SCIENCE AND POLITICS: SOVIET-EUROPEAN CO-OPERATION ON THE BIONS

Olga Dubrovina, University of Padova, Carpi, Italy

IAC-24.E4.2.9

"THE FIRST 'SPACE AGE,' CA. 1850-1915---A RE-EXAMINATION OF THE EARLIEST KNOWN APPEARANCES OF SPACEFLIGHT IN POPULAR CULTURE AND SCIENCE, PART 2

Frank H. Winter, National Air and Space Museum, Washington, DC 20013-7012, United States

IAC-24.E4.2.10

CRYOGENIC TRANSFER MODULE: ISRAELI GTO UPPER STAGE PROJECT FROM THE LATE 1980'S

Tal Inbar, Kadima, Israel

IAC-24.E4.2.12

NOORDUNG'S "WOHNRAD" AND THE EVOLUTION OF SPACE STATIONS

Sandra Haeuplik-Meusburger, TU Wien, Wien, Austria

E4.3. History of Italian Contribution to Astronautics

October 18 2024, 10:15 — Brown Hall 1

Co-Chair(s): Sandra Haeuplik-Meusburger, TU Wien, Austria; Michael Ciancone, National Aeronautics and Space Administration (NASA), Johnson Space Center, United States; Giovanni Caprara, Corriere della Sera, Italy

Rapporteur(s): Nathalie Tinjod, European Space Agency (ESA), France; Kerrie Dougherty, Australia

IAC-24.E4.3.1

BETWEEN TRANSATLANTIC AND EUROPEAN COOPERATION: THE CASE OF ITALY AND THE DECISION TO TAKE PART IN SPACELAB

Piero Messina, European Space Agency (ESA), Paris, France

IAC-24.E4.3.2

SCUOLA DI INGEGNERIA AEROSPAZIALE: THE CRADLE OF ASTRONAUTICS IN ITALY

Giovanni B. Palmerini, Sapienza University of Rome, Rome, Italy

IAC-24.E4.3.3

HISTORY OF THE ITALIAN CONTRIBUTION TO ASTRONAUTICS

Sai Prashant Bhosale, MIT Art, Design and Technology University, IIT Bombay, India

IAC-24.E4.3.4

EARLY ITALIAN CONTRIBUTIONS TO ASTRONAUTICS

Giovanni Caprara, Corriere della Sera, Italy

IAC-24.E4.3.5

ITALY'S CONTRIBUTION TO THE SOLAR SYSTEM MODEL. WAS GIORGIONE A WITNESS TO THE BEGINNINGS OF HELIOCENTRISM?

Ulpiu Elena Botezatu, Romanian Space Agency (ROSA), Bucuresti, Romania

IAC-24.E4.3.6

PRESSURIZED MODULES "MADE IN ITALY" FOR HUMAN SPACEFLIGHT. AN ITALIAN STORY OF INTERNATIONAL SUCCESS.

Maria Antonietta Perino, Thales Alenia Space Italia, Turin, Italy

IAC-24.E4.3.7

THE FIFTH VOLTA CONGRESS, ROME 1935: THE BIRTH OF SUPERSONIC AERODYNAMICS

Mario Marchetti, Sapienza University of Rome, Roma, Italy

IAC-24.E4.3.8

THE SIRIO SATELLITE: HOW ITALY CONTRIBUTED TO THE TELECOMMUNICATIONS FIELD

Alice Tommasi, University of Rome "La Sapienza", Negrar di Valpolicella, Italy; Dana Conzato, Vicenza, Italy

IAC-24.E4.3.9

THE ITALIAN CONTRIBUTION TO THE ONE-OF-A-KIND CASSINI-HUYGENS MISSION

Enrico Flamini, Università degli studi "Gabriele d'Annunzio", Roma, Italy

IAC-24.E4.3.10

ITALIANS IN EXILE: THE LEGACY OF ASTRONOMERS ANGELO SECCHI, BENEDICT SESTINI, AND THE GEORGETOWN OBSERVATORY

Clara Ziran Ma, Massachusetts Institute of Technology (MIT), Middlebury, United States

E5. 35th IAA SYMPOSIUM ON SPACE AND SOCIETY

Coordinator(s): Geoffrey Languedoc, Canadian Aeronautics & Space Institute (CASI), Canada; Olga Bannova, University of Houston, United States

E5.1. Space Architecture: Habitats, Habitability, and Bases

October 14 2024, 15:30 — Turquoise Hall 2

Co-Chair(s): Olga Bannova, University of Houston, United States; Anna Barbara Imhof, Liquifer Systems Group (LSG), Austria

Rapporteur(s): Anne-Marlene Rüede, Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland

IAC-24.E5.1.1

LEARNING FROM LOW EARTH ORBIT - THE ACTUAL PRESENT AND POSSIBLE FUTURE OF SPACE STATIONS

Justin Walsh, Chapman University, Orange, United States

IAC-24.E5.1.3

DESIGNING FOR REPAIR AND REPAIRABILITY IN LUNAR HABITATS: PRELIMINARY INVESTIGATIONS IN REGOLITH BLOCK BASED CONSTRUCTION

Monika Stankiewicz, University of Adelaide, Adelaide, Australia

IAC-24.E5.1.4

UNFOLDING SEQUENCE OF INTERIOR STRUCTURES FOR A DEPLOYABLE LUNAR HABITAT

Ren Kirchmann, New York City, United States

IAC-24.E5.1.5

DESIGNING A LUNAR HEALTH MAINTENANCE FACILITY (HMF) FOR REMOTE SURGERY: SPATIAL AND ARCHITECTURAL CONSIDERATIONS FOR ADVANCED ROBOTIC SURGERY IN SPACE

Amit Srivastava, University of Adelaide, Adelaide, Australia

IAC-24.E5.1.6

HUMAN FACTORS IN SPACE HABITAT DESIGN: ENHANCING HEALTH, PSYCHOLOGY, AND OPERATIONAL EFFICIENCY

Olivia Maria Joikits, WIA-Europe, Vienna, Austria

IAC-24.E5.1.7

SIMULATING THE GRAVITY BY ROTATION AS A MULTI-OBJECTIVE DESIGN PROBLEM. A METAHEURISTIC APPROACH TOWARD THE DESIGN OF A SPACE STATION WITH ARTIFICIAL GRAVITY.

Zhelun Zhu, Xi'an Jiaotong - Liverpool University, Suzhou, China

IAC-24.E5.1.8

HYBRID-MODULE DESIGN FOR HUMAN LUNAR COLONIZATION

Corrado Testi, University of Houston, Houston, United States

IAC-24.E5.1.9

LUNAR NEXUS: EXPLORING SUSTAINABLE EXTRATERRESTRIAL HABITAT DEVELOPMENT WITHIN A LUNAR PIT.

Marta Rossena, Architect, Lissone, Italy

IAC-24.E5.1.10

NEW DESIGN APPROACH FOR LUNAR HABITATION IN LAVA TUBES - LUNAE ABYSSI PROJECT DESCRIPTION AND DETAILS

Paula Drozdowska, Space is More, Świdnica, Poland

IAC-24.E5.1.11

ARTIFICIAL LIGHTING IN SPACE: CREATING A COMFORTABLE ENVIRONMENT FOR ASTRONAUTS

Anna Dovliatidou, Nexus Aurora, Moscow, Russian Federation; Daria Novikova, Nexus Aurora, Moscow, Russian Federation

IAC-24.E5.1.12

STRATEGY FOR THE CONSTRUCTION OF SPACE HABITAT BASED ON KOREAN CONSTRUCTION TECHNOLOGY

Jiyong Chae, Korea Institute of Civil Engineering and Building Technology (KICT), Goyang, Korea, Republic of

E5.2. Is Space R&D Truly Fostering A Better World For Our Future?

October 15 2024, 15:00 — Turquoise Hall 2

Co-Chair(s): Olga Bannova, University of Houston, United States; Nona Cheeks, retired from NASA GSFC, United States

Rapporteur(s): Kerry Leonard, National Aeronautics and Space Administration (NASA), Goddard Space Flight Center, United States

IAC-24.E5.2.2

TODAY, THE DEVELOPMENT OF SPACE RESEARCH AND THE BUDGET ALLOCATED TO IT

Khadija Huseynli, Azerbaijan State Oil and Industry University (ASOIU), BakU, Azerbaijan

IAC-24.E5.2.3

UNCOVERING THE UNSEEN IN ADVANCING SPACE ACTIVITIES: CORRELATING FUNDING METHODS WITH THE OUTCOMES OF RESEARCH AND DEVELOPMENT

Scott Schneider, Adelaide, Australia

IAC-24.E5.2.4

BEYOND SPACE: IS SPACE RESEARCH AND DEVELOPMENT CREATING A BETTER FUTURE?

Irana Rustamli, Azerbaijan State University of Economics, Baku, Azerbaijan

IAC-24.E5.2.5

TITLE: IS SPACE R&D TRULY FOSTERING A BETTER WORLD FOR OUR FUTURE? TOPIC: THE ROLE OF SPACE TECHNOLOGY FOR SUSTAINABLE TOURISM DEVELOPMENT IN ZULULAND, KWAZULU-NATAL, SOUTH AFRICA

THABANI MAZIBUKO, Durban, South Africa

IAC-24.E5.2.6

INNOVATIVE LUXURY X SPACE R&D MODEL TO BENEFITS SOCIETY AND SHAPES THE FUTURE

Delphine URBAN, Université PSL (Paris Sciences & Lettres), PARIS, France

IAC-24.E5.2.7

LEVERAGING SPACE R&D TO DRIVE SOCIETAL BENEFITS THROUGH AI AND ESG TECHNOLOGY CASES

Dheeraj R, BMS College of Engineering, Bengaluru, Bangalore, India

E5.3. Contemporary Arts Practice and Outer Space: A Multi-Disciplinary Approach

October 16 2024, 15:00 — Turquoise Hall 2

Co-Chair(s): Yuri Tanaka, Kyoto City University of Arts, Japan; Daniela De Paulis, The Netherlands

Rapporteur(s): Tibor Balint, Jet Propulsion Laboratory, United States

IAC-24.E5.3.1

EXPLOSIVE DEVELOPMENTS: FROM SPACE ART TO SPACE POLICY

Aoife van Linden Tol, European Space Policy Institute (ESPI), London, United Kingdom

IAC-24.E5.3.2

AN INTERPLANETARY DÉRIVE

Axel Straschnoy, Finnish Astronautical Society, Helsinki, Finland

IAC-24.E5.3.4

PAVILION OF THE UNIVERSE - SPACE ART AT THE BIENNALE DI VENEZIA

Claudia Kessler, Die Astronautin, Mühldorf, Germany

IAC-24.E5.3.5

GASTRONOMY BEYOND EARTH: ENHANCING SPACE LIFE WITH INNOVATIVE SPACE FOOD

Kakeru Funai, The University of TOKYO, Graduate school, Tokyo, Japan

IAC-24.E5.3.6

TECHNOPLASTICITY OF AEROSPACE TECHNOLOGY: ART PRACTICE AS SPACE EXPLORATION.

Luis Guzman, Northumbria University, Newcastle, United Kingdom

IAC-24.E5.3.7

A PRELIMINARY DESIGN OF CLOUD CHAMBER FOR ENHANCING INTERCONNECTIONS BETWEEN COSMIC RAYS AND HUMANS

Yuri Tanaka, Kyoto City University of Arts, Kyoto, Japan

IAC-24.E5.3.8

ISN'T AI JUST THE LATEST TOOL FOR (SPACE) ARTISTS?

Tibor Balint, Jet Propulsion Laboratory, Pasadena, United States

IAC-24.E5.3.9

BODY AS LABORATORY: TOPICS IN SPACE MEDICINE FROM THE ARTIST PERSPECTIVE

Carrie Paterson, Los Angeles, United States

IAC-24.E5.3.10

INTERPLANETARY SIMULATIONS (ANALOG MISSION FOR ARTISTIC RESEARCH)

Ana Cristina Olvera, Mexico City, Mexico

IAC-24.E5.3.11

MARE INCOGNITO: POETIC RESONANCE BETWEEN DEEP SLEEP AND THE COSMOS

Daniela De Paulis, Rotterdam, The Netherlands

IAC-24.E5.3.12

NASA'S GOLDEN RECORD: PROTOTYPING ART-SCIENCE PRACTICE FOR SETI

Kate Genevieve, University of Sussex, Aotearoa/New Zealand, United Kingdom

E5.4. Space Assets and Disaster Management

October 17 2024, 15:00 — Turquoise Hall 2

Co-Chair(s): Geoffrey Languedoc, Canadian Aeronautics & Space Institute (CASI), Canada; Jillianne Pierce, Space Florida, United States

IAC-24.E5.4.1

THE ROLE OF SPACE FOR CLIMATE RESILIENCE: A FOCUS ON THE MEDITERRANEAN REGION

Gabriele Redigonda, University of Firenze, Arezzo, Italy

IAC-24.E5.4.2

THE ROLE AND CHALLENGES OF EARTH OBSERVATION IN THE BEIRUT EXPLOSION ASSESSMENT AND RELIEF RESPONSE

Alvaro Piris Cuiza, Paris, France

IAC-24.E5.4.3

PREDICTIVE ANALYTICS IN DISASTER RISK MANAGEMENT: INTEGRATING SATELLITE IMAGERY AND AI FOR ENHANCED TPA INSURANCE SOLUTIONS

Paulina Valle, Space Generation Advisory Council (SGAC), Saltillo, Mexico

IAC-24.E5.4.4

PLEIADES NEO SATELLITES: NEW ASSETS FOR EMERGENCY RESPONSE AND DISASTERS MANAGEMENT

Gil Denis, Airbus Defence and Space, Toulouse, France

IAC-24.E5.4.5

SEMPER SUPRA: THE IMPACT OF THE SPACE DOMAIN ON NORTH AMERICAN ARCTIC COMMUNITIES

David Marsh, Voyager Space Holdings, Washington, United States

IAC-24.E5.4.6

ENHANCING DISASTER MANAGEMENT WITH SPACE ASSETS

Dilawaiz Saghir, Space Generation Advisory Council (SGAC), Islamabad, Pakistan

IAC-24.E5.4.7

THE EUROPEAN UNION'S SPACE PROGRAMME FOR DISASTER MANAGEMENT AND RESILIENCE

Christina Giannopapa, European Union Agency for the Space Programme (EUSPA), Prague, Czech Republic

IAC-24.E5.4.8

FROM SPACE TO SAFETY: AN ANALYSIS OF END-USER EXPERIENCES WITH SATELLITE-BASED SERVICES FOR DISASTER RISK MANAGEMENT

Henry Boeree, EURISY, Paris, France

IAC-24.E5.4.9

REACHING THE UNREACHABLE: LEVERAGING SATELLITE TECHNOLOGIES FOR REMOTE DISASTER PREPAREDNESS

Sara Cucaro, know.space, Milan, Italy

IAC-24.E5.4.10

MANAGING HEALTH DISASTERS WITH SPACE DATA

Jeanne Holm, City of Los Angeles, Sierra Madre, CA, United States

IAC-24.E5.4.11

COMPREHENSIVE RISK ASSESSMENT AND MAPPING OF MULTI-HAZARD VULNERABILITIES IN VANUATU ISLAND USING GOOGLE EARTH ENGINE AND REMOTE SENSING TECHNIQUES

Ayush Harish Kumar, Amity University, Dubai, Dubai, United Arab Emirates

IAC-24.E5.4.12

THE REQUIREMENTS OF THE AFRICAN EAST RIFT IN A SPACE PROGRAM IN AFRICA

Djamel Metmati, Toulouse, France

IAC-24.E5.4.13

MAPPING OF NATURAL RESOURCES THROUGH GPS AND REMOTE SENSING TECHNIQUES

DUSENGIMANA Patrick, Mullana-AMBALA, India

E5.5. Sharing Space Achievements and Heritage: Space Museums and Societies

October 18 2024, 10:15 — Turquoise Hall 2

Co-Chair(s): Jean-Baptiste Desbois, SEMECCEL Cité de l'Espace, France; Ines Prieto, SEMECCEL Cité de l'Espace, France

IAC-24.E5.5.1

INFINITE: IMMERSIVE SPACE ART EXHIBITION - EXPLORATION AND PRACTICE OF CROSS-DISCIPLINARY IMMERSIVE EXPERIENCE

Rong Guo, Beijing Institute of Space Science and Technology Information, Beijing, China

IAC-24.E5.5.2

SPACE MUSEUMS AS AN AREA OF CROSS-CULTURAL COOPERATION

Iryna Dyachuk, The Sergei Korolev Space Museum, Zhytomyr, Ukraine

IAC-24.E5.5.3

THE ACHIEVEMENTS AND FUTURE PROSPECT OF THE CHINA SPACE MUSEUM ON THE SPACE CULTURE TRANSMISSION AND SCIENCE POPULARIZATION

Daling Jia, China Academy of Launch Vehicle Technology, Beijing, China

IAC-24.E5.5.4

BEYOND THE STARS: VIRTUAL ACCESS TO GLOBAL SPACE HERITAGE

Edward Koellner, University of Mississippi School of Law, San Antonio, United States

IAC-24.E5.5.5

"RUMREJSEN" (THE SPACE JOURNEY) - A NATIONWIDE COMMUNICATION AND COLLABORATION PROJECT LINKED TO THE HUGINN MISSION OF THE DANISH ESA ASTRONAUT ANDREAS MOGENSEN

Lykke Pedersen, Danish Astronautical Society, Copenhagen, Denmark; Sheena Laursen, Experimentarium, Hellerup, Denmark

IAC-24.E5.5.6

CULTIVATING SPACE EDUCATION THROUGH ARCHITECTURE: A STUDY OF OUTER SPACE DISPLAYS IN US PAVILIONS AND SPACE MUSEUMS (1957-1986)

Marie Beauvalet, Université Paris 1 Panthéon-Sorbonne, Gentilly, France

IAC-24.E5.5.9

ENLIGHTENMENT IN THE SPACE FIELD: THE ROLE OF CIVIL SOCIETY ORGANIZATIONS

Shamil Mamedov, Azercosmos, Space Agency of Republic of Azerbaijan, Baku, Azerbaijan; Ulvi Movsum-zada, Jagiellonian University, Kraków, Poland

IAC-24.E5.5.10

EXPLORING THE CONCEPT AND POTENTIAL OF SPACE MUSEUMS FOR PRESERVATION, EDUCATION, AND TOURISM

Ayako Kurono, Hiroshima, Japan

IAC-24.E5.5.11

HOW SPACE ACHIEVEMENTS ARE EXHIBITED

Sabina Alakbarova, Baku State University, Sumgait, Azerbaijan

E5.6. Simulating Space Habitation: Habitats, Design and Simulation Missions

October 18 2024, 13:45 — Turquoise Hall 2

Co-Chair(s): Anna Barbara Imhof, Liquifer Systems Group (LSG), Austria; Julie Patarin-Jossec, Spartan Space, France

Rapporteur(s): Sandra Haeuplik-Meusburger, TU Wien, Austria

IAC-24.E5.6.1

KEYNOTE: REDEFINING SPACE HABITATION: MAX SPACE'S TRANSFORMATIVE APPROACH WITH SPACE EXPANDABLE HABITATS

Aaron Kemmer, Max Space, United States

IAC-24.E5.6.3

DEVELOPMENT AND IMPROVEMENT IN ANALOG RESEARCH SUPPORT DURING CREWED MISSION SIMULATIONS AT LUNARES RESEARCH STATION - SUMMARY OF LESSONS LEARNED AND MISSION REPORTS FROM 2022-2023

Zuzanna Paśko, Space is More, Wrocław, Poland

IAC-24.E5.6.4

S.P.A.C.E – STUDYING PERCEPTIONS, ACTIVITIES, CONNECTIONS IN EXTREME ENVIRONMENT

Sandra Haeuplik-Meusburger, TU Wien, Wien, Austria

IAC-24.E5.6.5

AMI: AN INTERFACE TO INCREASE THE FIDELITY OF ANALOG SPACE MISSIONS

Quentin ROYER, ISAE-Supaero University of Toulouse, TOULOUSE, France

IAC-24.E5.6.6

LESSONS LEARNED FROM PETRA-1: PSYCHOLOGICAL, ENVIRONMENTAL, AND TECHNOLOGICAL RESEARCH ANALOG *Sahba El-Shawa, Jordan Space Research Initiative (JSRI), Amman, Jordan*

IAC-24.E5.6.7

HUMAN IN THE LOOP: AN EVALUATION PROCESS IN SUPPORT TO THE DEVELOPMENT OF GATEWAY INTERNATIONAL HABITAT

Federica Vagnone, Thales Alenia Space Italia, Turin, Italy

IAC-24.E5.6.9

DIGITAL DESIGN FOR CREW WELL-BEING: INCORPORATING HUMAN FACTORS IN SPACE HABITAT SIMULATION

Nona Zakoyan, Thales Alenia Space Italia, Turin, Italy; Elia Sindoni, Thales Alenia Space Italia, Turin, Italy

IAC-24.E5.6.10

EVALUATION OF THE EFFECTIVENESS OF MEDICAL KITS FOR EXTRA-TERRESTRIAL ENVIRONMENTS THROUGH ANALOG MISSIONS

Marialina Tsinidis, University of Glasgow, Glasgow, United Kingdom

IAC-24.E5.6.11

TOWARDS A TRANSDISCIPLINARY FRAMEWORK INFORMED BY INDIGENOUS KNOWLEDGES TO DESIGN RESTORATIVE EXTENDED REALITY EXPERIENCES FOR ALLEVIATING ISOLATION ON SPACE MISSIONS

Kaja Antleij, Deakin University, Docklands, Australia; Anay Ashwin, Melbourne, Australia

IAC-24.E5.6.12

PARACHASM – PARASTRONAUT CONSORTIUM FOR HUMAN ANALOGUE SPACE MISSIONS

Tomas Ducai, University of Vienna, Vienna, Austria

IAC-24.E5.6.13

ANALYZING WOMEN-ONLY, MEN -ONLY AND MIXED CREWS IN ANALOG SPACE MISSIONS: OPTIMIZING GROUP DYNAMICS FOR FUTURE HUMAN SPACE EXPLORATION MISSIONS.

Ruchira Huchgol, Pune, India

E6. IAF BUSINESSES AND INNOVATION SYMPOSIUM

Coordinator(s): Ken Davidian, United States; Nancy C. Wolfson, American Institute of Aeronautics and Astronautics (AIAA), United States

E6.1. Space Entrepreneurship and Investment: The Practitioners' Perspectives

October 17 2024, 15:00 — Brown Hall 1

Co-Chair(s): Joerg Kreisel, JOERG KREISEL International Consultant (JKIC), Germany; Daria Stepanova, Germany

IAC-24.E6.1.1

INVESTING IN THE COSMOS: STRATEGIES FOR SUSTAINABLE AND ETHICAL SPACE DEVELOPMENT

Edward Koellner, University of Mississippi School of Law, San Antonio, United States

IAC-24.E6.1.2

SPACE INVESTMENT TO CONTRIBUTE TO SUSTAINABLE SPACE INDUSTRY

Misuzu Onuki, Space Access Corporation, Tokyo, Japan

IAC-24.E6.1.3

FUTURE OF INVESTMENT IN A SPACE-BASED ECONOMY: A FINANCIER'S EXPECTATIONS

Susana Fornies Rodriguez, Toulouse, France

IAC-24.E6.1.4

ENABLING PRIVATE EQUITY INVESTMENT FOR THE SPACE INDUSTRY

Enrico Bronca, ESA - European Space Agency, Farra di Soligo, Italy; Ludovico Pietro Boggero, London Business School, London, United Kingdom; Leon Mokbel, London Business School, London, United Kingdom

IAC-24.E6.1.5

A COMPARATIVE ANALYSIS OF VC INVESTMENTS IN THE SPACE INDUSTRY ACROSS THE "FIVE EYES" AND EU REGION

Duke Larbie, Kwame Nkrumah University of Science and Technology, Accra, Ghana

IAC-24.E6.1.6

BENCHMARKING CHINA AND US SPACE COMPANY PUBLIC MARKET VALUATIONS

Filip Kocian, Zlin, Czech Republic

IAC-24.E6.1.7

ON THE COMMERCIAL SPACE DEVELOPMENT IN EMERGING SPACEFARING COUNTRIES: ANALYSIS AND COMPARISON OF INVESTMENTS FOR SELECTED CASES

Francesco Ventre, Space Generation Advisory Council (SGAC), Francolise, Italy

IAC-24.E6.1.8

SATELLITE CONSTELLATIONS - 2024 SURVEY, TRENDS AND ECONOMIC SUSTAINABILITY

Erik Kulu, Tallinn, Estonia

IAC-24.E6.1.9

FINANCIAL MANEUVERS: ESTIMATING AVERAGE BURN FOR SPACE STARTUPS

Raleigh Wooldridge, Evanston, United States

IAC-24.E6.1.10

SPACE ECONOMY IN EMERGING SPACE ECOSYSTEMS - FILLING THE GAP OF NEW SPACE INVESTMENTS THROUGH INVESTMENT BANKING INITIATIVES

Kaja Hopej, Central European Academy, Budapest, Hungary, Budapest, Hungary

IAC-24.E6.1.11

SPACE STARTUP FINANCING AND TECHNOLOGY MATURITY: TECHNOLOGY READINESS LEVELS (TRL) AS A TOOL FOR FINANCIAL INSTRUMENT SELECTION

Kristi Bradford, Pragmatic Frontiers, Las Vegas, United States

IAC-24.E6.1.12

SPACE GRADE OVER-THE-SHELF PRODUCTS FOR SATELLITE SUBSYSTEMS: A FRAMEWORK FOR SME ENTREPRENEURS IN SPACE ENTREPRENEURSHIP AND INVESTMENTS

Muneera Almalki, National Space Science Agency (NSSA), Hidd, Bahrain

E6.2. Public-Private Partnerships: Traditional and New Space Applications

October 16 2024, 10:15 — Brown Hall 1

Co-Chair(s): Nancy C. Wolfson, American Institute of Aeronautics and Astronautics (AIAA), United States; Kenneth Bruce Morris, Sierra Space, United States; Nicholas Florio, Lunar Outpost, United States

IAC-24.E6.2.1

KEYNOTE: FROM SPACE ROCKS AND ASTEROIDS TO FUEL: THE POTENTIAL OF SPACE RESOURCES TO ENABLE FUTURE EXPLORATION AND THE NEW SPACE ECONOMY

Angel Abbud-Madrid, Colorado School of Mines, Golden, United States

IAC-24.E6.2.2

EVALUATION OF THE ECONOMICS AROUND SPACE RESOURCE EXTRACTION AND IN-SITU RESOURCE UTILIZATION (ISRU)

Kevin Barry, LightBridge Strategic Consulting, Stillwater, United States

IAC-24.E6.2.3

THE TECHNOLOGICAL PARADIGM SHIFTS IN SPACE: A LITERATURE REVIEW.

Erik Busnello Imbuzeiro, Brazilian Space Agency (AEB), Brasília, Brazil

IAC-24.E6.2.4

AUTOMATED ROBOTIC FLEET FOR SUSTAINABLE EXTRACTION OF WATER RESOURCE FROM NEAR-EARTH ASTEROIDS

Prudence AYIVI, Space Generation Advisory Council (SGAC), Cotonou, Benin

IAC-24.E6.2.5

LEVERAGING INDUSTRY PARTNERSHIPS FOR PAYLOADS DEVELOPMENT IN AN EMERGING SPACEFARING COUNTRY

Raynell Inojosa, Philippine Space Agency, Quezon City, The Philippines

IAC-24.E6.2.6

ENHANCING AUSTRALIA'S SPACE CAPABILITIES THROUGH PUBLIC-PRIVATE PARTNERSHIPS: INSIGHTS FROM THE NATIONAL SPACE QUALIFICATION NETWORK PROJECT

Anupam Kumar Pilli, Australian National University (ANU), Canberra, Australia

IAC-24.E6.2.7

DEVELOPING THE EUROPEAN COMMERCIAL SPACE SECTOR: HISTORICAL INSIGHTS INTO STRATEGIC POLICY AND PROGRAM DEVELOPMENT

Julian Schroth, European Space Agency (ESA), Noordwijk, The Netherlands; Juliane Roberta Dahm, European Space Agency (ESA), Oxford, United Kingdom; Ritesh Jain, HE Space Operations, LEIDEN, The Netherlands; Lea Kablitz, European Space Agency (ESA), Darmstadt, Germany

IAC-24.E6.2.8 (unconfirmed)

SUCCESSFUL PARTNERSHIPS – A RUBRIC FOR SUCCESSFUL APPLICATION OF NASA'S COMMERCIAL PARTNERSHIP MODEL

Marc Timm, NASA, Washington, DC, United States

IAC-24.E6.2.9

PUBLIC-PRIVATE PARTNERSHIPS: TRADITIONAL AND NEW SPACE APPLICATIONS

Lala Hasanzada, Azercosmos, Space Agency of Republic of Azerbaijan, Baku, Azerbaijan

IAC-24.E6.2.10

PROMOTING THE INCURSION OF EXPERIMENTAL ROCKETRY INDUSTRY DEVELOPMENT AS A VENTURE IN A NASCENT AEROSPACE MARKET: A CASE OF PERU

Angelo Espinoza Valles, Samara National Research University (Samara University), Samara, Russian Federation

IAC-24.E6.2.11

SPACE FOR THE GREEN ENERGY SECTOR: USE CASES AND COMMERCIAL OPPORTUNITIES

Sascha Deutsch, ESA, Paris, France

IAC-24.E6.2.12

BUSINESS INNOVATION IN COMMERCIAL SPACE: CULTURE AND TRENDS IN EARTH OBSERVATION

Holly Dinkel, University of Illinois at Urbana-Champaign, Urbana, United States; Luca Ferrone, ESA - European Space Agency, Oxford, United Kingdom; Shinsuke Kito, Japan Aerospace Exploration Agency (JAXA), Matsudo, Japan

IAC-24.E6.2.13

DESIGNING NEW PUBLIC-PRIVATE PARTNERSHIP MODELS FOR FUTURE COMMERCIAL LUNAR ACTIVITIES

Luinaud Mathieu, PricewaterhouseCoopers Advisory (PwC), Neuilly Sur Seine, France

IAC-24.E6.2.14

STRATEGY FOR SMALL LAUNCH VEHICLE DEVELOPMENT IN SOUTH KOREA BASED ON PUBLIC-PRIVATE PARTNERSHIP

Junwoo Park, Korea Aerospace Research Institute (KARI), Daejeon, Korea, Republic of

IAC-24.E6.2.15 (unconfirmed)

ACCELERATING THE USE OF SPACE IN THE PURSUIT OF SUSTAINABILITY: THE ESA ACCELERATORS

Graham Turnock, European Space Agency (ESA), Swindon, Wiltshire, United Kingdom

E6.3. Innovation: The Academics' Perspectives

October 15 2024, 15:00 — Brown Hall 1

Co-Chair(s): Ken Davidian, United States; Michele Cristina Silva Melo, Brazilian Federal Government - General Attorney Office, Brazil

IAC-24.E6.3.1

WINNER OF SPACE IS BUSINESS COMPETITION

Ken Davidian, Washington DC, United States

IAC-24.E6.3.2

THE GRAND CREATIVE CHALLENGE OF COMMERCIALIZING INTERPLANETARY SPACE: AN EMPIRICAL COMPARATIVE TAXONOMY OF ORGANIZING MODELS

Robert Edgell, State University of New York, UTICA, United States

IAC-24.E6.3.3

NAVIGATING THE NEW SPACE PARADIGM: A FRAMEWORK FOR PROCUREMENT STRATEGY SELECTION IN SPACE AGENCIES

Valentina Zancan, Politecnico di Milano, Milan, Italy

IAC-24.E6.3.4

2014-2024, THE GOOD OLD DAYS IN NEW SPACE: FACTS AND FIGURES, LESSONS LEARNT AND NEW TRENDS IN EARTH OBSERVATION

Gil Denis, Airbus Defence and Space, Toulouse, France

IAC-24.E6.3.5

SUSTAINABLE SOLUTIONS IN THE SPACE SECTOR: FACTORS DETERMINING THE PERCEPTION OF THE OPPORTUNITY LANDSCAPE BY KEY PLAYERS IN THE SPACE INDUSTRY
Angelina Frolova, Space Engineering Center (eSpace), Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland

IAC-24.E6.3.6

UNVEILING NOVEL INSIGHTS INTO THE EUROPEAN SPACE ECONOMY: LEVERAGING THE SEEDATA DATABASE FOR ENHANCED CATEGORIZATION AND BUSINESS CHARACTERIZATION
Matteo Nori, SEE Lab - SDA Bocconi School of Management, Bologna, Italy; Filippo Papamarengi, SDA Bocconi School of Management, Bocconi University, Milan, Italy; Filippo Borgogno, SEE Lab - SDA Bocconi School of Management, Milan, Italy

IAC-24.E6.3.9

ANALYSIS OF THE GREATER BOSTON INNOVATION ECOSYSTEM THROUGH THE LENS OF CO-CREATION: URBAN ENERGY, ROBOTICS, AND THE SPACE SECTOR
Katlyn Turner, Massachusetts Institute of Technology (MIT), Cambridge, United States

IAC-24.E6.3.10

THE ECOSYSTEM ASCENDANT: UNPACKING THE SHIFT FROM NATIONAL PROGRAMS TO SPACE ECOSYSTEMS
Deganit Paikowsky, Hebrew University of Jerusalem, Herzliya, Israel

E6.4. Strategic Risk Management for Successful Space & Defence Programmes

October 15 2024, 10:15 — Brown Hall 1

Co-Chair(s): Maria-Gabriella Sarah, European Space Agency (ESA), France; Helen Tung, NewSpace2060, Australia; Ruediger Suess, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany

Rapporteur(s): Andrew Court, TNO, The Netherlands

IAC-24.E6.4.1

THE (UN)PREDICTABLE CHALLENGES AND OPPORTUNITIES IN A CHANGING WORLD
Antonio Carlo, Tallinn University of Technology, Tallinn, Estonia

IAC-24.E6.4.2

A PROSPECTUS ON THE USE OF GENERATIVE ARTIFICIAL INTELLIGENCE TO ENHANCE ENTERPRISE RISK MANAGEMENT
Maria-Gabriella Sarah, European Space Agency (ESA), Paris, France

IAC-24.E6.4.3

SAFEGUARDING SATELLITE COMMUNICATIONS: RISK MANAGEMENT AND MITIGATION STRATEGIES FOR THE DATA LINK LAYER
Louis Masson, Cysec SA, Romont, Switzerland

IAC-24.E6.4.4

OPTIMIZING COMMERCIAL SPACE SYSTEM INTEGRATION FOR SECURITY APPLICATIONS IN CENTRAL AND EASTERN EUROPE
MAŁGORZATA POLKOWSKA, Warsaw, Poland

IAC-24.E6.4.6

RISK MANAGEMENT INDUCED BY THE NEW CNES STRATEGY
Benedicte Fein, Centre National d'Etudes Spatiales (CNES), TOULOUSE, France

IAC-24.E6.4.8

TOWARDS RESILIENCE AND SUSTAINABILITY OF SPACE SECTOR: MANAGING THE RISKS OF VULNERABLE VALUE CHAINS
Katarzyna Malinowska, European Space Foundation, Warsaw, Poland

IAC-24.E6.4.9 (unconfirmed)

A TOOL-BASED APPROACH TO STRATEGIC RISK MANAGEMENT
Marina Pokrovskaya, Frankfurt, Germany

IAC-24.E6.4.10

RISK MANAGEMENT STRATEGIES AMONG SPACE OPERATORS
Kate Maliga, LeoLabs, Arlington VA, United States

IAC-24.E6.4.11

HOW ARE SPACE ECONOMY TRENDS RESHAPING THE RISK LANDSCAPE OF THE SPACE INDUSTRY? A TAXONOMY AND FRAMEWORK

Paolo Trucco, Politecnico di Milano, Milan, Italy

IAC-24.E6.4.12

THE GOLDEN TRIAD: RISK, INVESTMENT, AND MARKET HYPE
Kelli Kedis Ogborn, Space Foundation, Arlington, United States

E6.5-GTS.1. Entrepreneurship Around the World

October 16 2024, 15:00 — Yellow Hall 1

Co-Chair(s): Susana Fornies Rodriguez, France; Samuel Peterson, Embry-Riddle Aeronautical University Worldwide, United States

Rapporteur(s): Nancy C. Wolfson, American Institute of Aeronautics and Astronautics (AIAA), United States

IAC-24.E6.5-GTS.1.1

DEVELOPING A SUSTAINABLE FINANCIAL FRAMEWORK FOR EMERGING SPACEFARING NATIONS - THE CASE OF BRAZIL
Sidney Nakahodo, Seldor Capital, New York, United States

IAC-24.E6.5-GTS.1.2

CATALYSING SPACE ENTREPRENEURSHIP: AN INDIA-AUSTRALIA ALLIANCE
Ariane Platell, QL Space, Perth, Australia

IAC-24.E6.5-GTS.1.3

ENTREPRENEURSHIP IN THE SCANDINAVIAN SPACE SECTOR: CHALLENGES AND OPPORTUNITIES
Martina Lofqvist, Lausanne, Switzerland

IAC-24.E6.5-GTS.1.4

CASE STUDY FOR PUBLIC PRIVATE PARTNERSHIP TO ESTABLISH AN EQUATORIAL SPACEPORT
Meshack Ndiritu, Nairobi, Kenya

IAC-24.E6.5-GTS.1.5

YOUTH INVOLVEMENT IN SPACE ENTREPRENEURSHIP, THE EMERGENCE OF A NEW MARKET DISRUPTION
Udi Philippa, National Space Research and Development Agency (NASRDA), Abuja Nigeria, Abuja, Nigeria

IAC-24.E6.5-GTS.1.6

PROPEL: A RESEARCH PROJECT FOR NAVIGATING THE CHALLENGES AND FOSTERING GROWTH OF SPACE START-UPS IN LATIN AMERICA.
Francisco Arévalo, Andres Bello University, Santiago, Chile

IAC-24.E6.5-GTS.1.7

INNOVATIVE ENERGY SYNTHESIS ON MARS: FEASIBILITY AND BUSINESS PERSPECTIVES
Paulina Valle, Space Generation Advisory Council (SGAC), Saltillo, Mexico

IAC-24.E6.5-GTS.1.8

ARESHERE: SPACE ENTREPRENEURSHIP, THE BEST WAY TO DEVELOP AND ENCOURAGE THE MEXICAN SPACE INDUSTRY
ANGEL VICTOR GOMEZ FALCON, Universidad Autónoma de Baja California, Tijuana, Mexico; VANESSA MONTIEL VIRUEL, Universidad Autónoma de Baja California, Tijuana, Mexico; Michael David Balderrabano Hernandez, Universidad Autónoma de Baja California, Tijuana, Mexico

E7. IISL COLLOQUIUM ON THE LAW OF OUTER SPACE

Coordinator(s): Lesley Jane Smith, Leuphana University of Lüneburg/Weber-Steinhaus & Smith, Germany; Catherine Doldirina, International Institute of Space Law (IISL), Italy; Tanja Masson-Zwaan, International Institute of Air and Space Law, Leiden University, The Netherlands

E7.1. Young Scholars Session with Keynote Lecture

October 14 2024, 15:30 — Green Hall 3

Co-Chair(s): Lesley Jane Smith, Leuphana University of Lüneburg/Weber-Steinhaus & Smith, Germany; Nicoletta Bini, ASI - Italian Space Agency, Italy

Rapporteur(s): Lukas Christopher Jung, ESA - European Space Agency, France

IAC-24.E7.1.1

KEYNOTE: THE COMPLEXITY OF CHANGE: SOME LEGAL AND POLICY IMPLICATIONS

Diane Howard, International Institute of Space Law (IISL), Daytona Beach, United States

IAC-24.E7.1.2

NEW TECHNOLOGIES – NEW RESPONSIBILITIES: A STORY OF CELESTIAL OPERATIONS, DEBRIS AND ARTIFICIAL INTELLIGENCE
Jacqueline Reichhold, Institute of Air and Space Law, University of Cologne, Cologne, Germany

IAC-24.E7.1.3

THE LEGAL OBLIGATION FOR STATES TO TAKE INTO ACCOUNT LEGAL AND SUSTAINABILITY RULES IN CONDUCTING MILITARY SPACE OPERATIONS
Quentin Gueho, Université Paris-Sud 11 Faculté Jean Monnet, Antony, France

IAC-24.E7.1.4

LEGAL ANALYSIS OF THE NATIONAL »SPACE MINING LAWS« IN LIGHT OF ENVIRONMENTAL PROTECTION AND SUSTAINABILITY
Iva Ramuš Cvetkovič, University of Ljubljana, Gozd Martuljek, Slovenia

IAC-24.E7.1.5

ARIAS'S APPROACH TO BRIDGING THE GAP: INTEGRATING ENVIRONMENTAL LAW INTO SPACE SUSTAINABILITY DISCOURSE
Yélén Esslinger, University of Bordeaux, Paris, France; Gabrielle Leterre, Université de Toulouse 1 Capitole, Esnandes, France; Anna Hurova, International Institute of Space Law (IISL), Kyiv, Ukraine

IAC-24.E7.1.6

”FLAGGING OUT” - THE RISE OF NON-NATIONAL SATELLITE SPECTRUM AUTHORIZATIONS
Laura Cummings, Washington, United States

IAC-24.E7.1.7

REGULATING THE EFFICIENT USE OF LOW-EARTH ORBIT: A COORDINATED APPROACH TO THE CHALLENGE OF SATELLITE MEGA-CONSTELLATIONS
David Eagleson, Northumbria University, Newcastle-upon-Tyne, United Kingdom

IAC-24.E7.1.8

A LEGAL COMPASS FOR EMERGING SPACE NATIONS ON BENEFIT SHARING
Laszlo Mezey, Central European Academy, Budapest, Hungary, Budapest, Hungary

IAC-24.E7.1.9

A BRAZILIAN ODYSSEY IN NEWSPACE - CRAFTING COMPREHENSIVE SPACE LEGISLATION FOR THE FINAL FRONTIER
Vinicius Guedes Gonçalves de Oliveira, Flinders University, Adelaide, Australia

IAC-24.E7.1.10

EXAMINING THE ROLE OF LIABILITY IN SSA SERVICES UNDER INTERNATIONAL SPACE LAW
Geetanjali Kamat, Digantara Research and Technologies Private Limited, Bangalore, India

IAC-24.E7.1.11

RESPONSIBLE AI IN SPACE: UNPACKING CURRENT INDUSTRY PRACTICES AND REGULATORY TRENDS
Thomas Graham, Swinburne University of Technology, Williamstown, Australia

IAC-24.E7.1.12

COMMON THE GOOD, COLLECTIVE THE RESPONSIBILITY: THE ARTICLE 48 OF THE ARSIWA AND THE PROTECTION OF THE OUTER SPACE ENVIRONMENT
Leonardo Cerisano, Roma, Italy; Giulia Pascuzzi, Palermo, Italy

IAC-24.E7.1.13

SPACE RACE 2031: THE HISTORY OF THE WOLF AMENDMENT AND THE FUTURE OF THE ISS AND TIANGONG SPACE STATION
Howard Chang, Georgetown University, Washington, United States

E7.2. Near Space: Legal Aspects of Aerospace Activities

October 15 2024, 10:15 — Green Hall 3

Co-Chair(s): Ranjana Kaul, Dua Associates, India; Lauren Payne, D-Orbit SpA, United Kingdom

Rapporteur(s): Lew Töpfer, Germany

IAC-24.E7.2.1

POINT-TO-POINT TRANSPORT AND HIGH-ALTITUDE PLATFORM SYSTEMS: JURISDICTION, REGULATION AND LIABILITY FOR HIGH-ALTITUDE TRANSPORTATION.
Christopher Newman, Northumbria University, Newcastle, United Kingdom

IAC-24.E7.2.2

THE APPLICATION OF ”INTERNATIONAL LAW” TO SUB-ORBITAL ACTIVITIES – WHAT DOES IT MEAN?
Irmgard Marboe, University of Vienna, Vienna, Austria

IAC-24.E7.2.3

THE RATIONE LOCI APPLICABILITY OF THE RULES OF THE AIR TO AEROSPACE ACTIVITIES
George (Georgios) D. Kyriakopoulos, National and Kapodistrian University Of Athens, Gyfada, Greece

IAC-24.E7.2.4

HOW MUCH OF SPACE LAW WILL BE APPLIED TO NON-ORBITAL FLIGHT ACTIVITIES FOR SCIENTIFIC, MILITARY AND COMMERCIAL PURPOSES?
Setsuko Aoki, Keio University, Tokyo, Japan

IAC-24.E7.2.5

WHERE DOES SPACE BEGIN: THE ITU’S ATTEMPT TO TACKLE THIS ELUSIVE QUESTION AT WRC-23
Audrey Allison, The Aerospace Corporation, Arlington, VA, United States

IAC-24.E7.2.7

SPACE OR HIGH ALTITUDE: WHAT’S IN A NAME?
Sara Dalledonne, European Space Policy Institute (ESPI), Vienna, Austria

IAC-24.E7.2.8

THE ROLE OF AEROSPACE ACTIVITIES IN FORMULATING, NEGOTIATING, AND IMPLEMENTING A RESILIENT, INCLUSIVE, AND SUSTAINABLE (INTER)NATIONAL LEGAL REGIME FOR THE NEAR SPACE. TOWARDS SHAPING AN AEROSPACE REGULATORY AND SECURITY COMPLEX IN THE XXI
Luis Ismael López Salas, Universidad Nacional Autónoma de México (UNAM), Mexico City, Mexico

IAC-24.E7.2.9

CURRENT INTERNATIONAL AND NATIONAL LEGAL REGIME ON SUBORBITAL FLIGHT

Nayoung Youn, Korea Aerospace Research Institute (KARI), Daejeon, Korea, Republic of

IAC-24.E7.2.10

LIABILITY FOR DAMAGES INDUCED BY THE USE OF AEROSPACE TECHNOLOGY

YONGLIANG YAN, Beijing Jiaotong University, Beijing, China

IAC-24.E7.2.11

A PROPOSED REGULATION OF SUBORBITAL FLIGHTS AND OTHER NEAR SPACE ACTIVITIES IN THE 2014 SPANISH DRAFT BILL ON SPACE ACTIVITIES

Rafael Moro Aguilar, Florida State University, Coral Gables, United States

E7.3. Artificial Intelligence and Safe Space Communication

October 15 2024, 15:00 — Green Hall 3

Co-Chair(s): Fabio Tronchetti, Northumbria University, United Kingdom; Güneş Ünüvar, University of Luxembourg, Luxembourg
Rapporteur(s): Martin Reynders, German Space Agency, Germany

IAC-24.E7.3.1 (unconfirmed)

AI ETHICS AND HUMAN RIGHTS IN SPACE ACTIVITIES: SAFEGUARDING LIFE AND ACCOUNTABILITY

Jonathan Lim, Jus Ad Astra, Richmond, Australia

IAC-24.E7.3.2

ARTIFICIAL INTELLIGENCE IN OUTER SPACE: THE RESPONSIBILITY OF THE STATE OF THE SOFTWARE DEVELOPER UNDER ARTICLE VI OUTER SPACE TREATY

Stefan-Michael Wedenig, Institute of Air and Space Law, McGill University, Westmount, Canada; Jack Wright Nelson, Institute of Air and Space Law, McGill University, Montreal, Canada

IAC-24.E7.3.3

THE PROTECTION OF AI-BASED SPACE SYSTEMS FROM A DATA-DRIVEN GOVERNANCE PERSPECTIVE

Roser Almenar, University of Valencia, Valencia, Spain; Giovanni Tricco, Alma Mater Studiorum - University of Bologna, san giuliano terme, Italy

IAC-24.E7.3.4

MITIGATING CYBERTHREATS TO SPACE COMMUNICATION SYSTEMS: OPERATORS, USERS AND REGULATORS PERSPECTIVES

Elina Morozova, Intersputnik International Organization of Space Communications, Moscow, Russian Federation

IAC-24.E7.3.5

LEVERAGING OUTER SPACE TECHNOLOGY FOR CLIMATE CHANGE MITIGATION: ANALYZING THE FUTURE OF AI INTEGRATION IN GNSS FOR CLIMATE MONITORING

Omkar Chaudhari, Mumbai, India

IAC-24.E7.3.6

ARTIFICIAL INTELLIGENCE AND SAFE SPACE COMMUNICATION

Kamal Ahmadov, Azerbaijan State Oil and Industry University (ASOIU), Baku, Azerbaijan

IAC-24.E7.3.7

RISK PREVENTION IN OUTER SPACE: THE SYNERGISTIC ACTION OF ARTIFICIAL INTELLIGENCE AND SPACE LAW

Maura Zara, AIKO S.r.l., Turin, Italy; Giovanni Tricco, Alma Mater Studiorum - University of Bologna, san giuliano terme, Italy

IAC-24.E7.3.8

NAVIGATING THE AI FRONTIER IN SPACE LAW AND SPECTRUM MANAGEMENT: LEGAL CHALLENGES AND TECHNOLOGICAL SOLUTIONS

Edward Koellner, University of Mississippi School of Law, San Antonio, United States

IAC-24.E7.3.9

WINNER TAKES ALL? DEPLOYING ARTIFICIAL INTELLIGENCE FOR MILITARY ACTIVITIES IN OUTER SPACE

Ioana Bratu, Vrije Universiteit Amsterdam, Amsterdam, The Netherlands

IAC-24.E7.3.10

ARTIFICIAL INTELLIGENCE AND ASSET PROTECTION IN THE SPACE ENVIRONMENT

George Anthony Long, _none, United States

IAC-24.E7.3.11

AI PIONEERING THE FINAL FRONTIER: NAVIGATING LEGAL CHALLENGES IN SPACE EXPLORATION

Annachiara Pagano, University of Trento, Department of Physics, National PhD in Space Science and Technology, Ariano Irpino, Italy

IAC-24.E7.3.12

FROM EUROPE TO EUROPA: IMPLICATIONS OF THE EUROPEAN AI ACT FOR THE SPACE INDUSTRY

Thomas Graham, Swinburne University of Technology, Williamstown, Australia; Francesco Casaril, IMT, Brussels, Belgium

E7.4. Launching into Outer Space

October 16 2024, 10:15 — Green Hall 3

Co-Chair(s): Rada Popova, Isar Aerospace Technologies GmbH, Germany; Yu Takeuchi, Japan Aerospace Exploration Agency (JAXA), Japan

Rapporteur(s): Adriana Santana, Georgetown University Law Center, United States

IAC-24.E7.4.1

A PROPORTIONALITY FRAMEWORK FOR ASSESSING LAUNCH ACTIVITIES

Dominic Wilcox, University of New South Wales, Dulwich Hill, Australia

IAC-24.E7.4.2

NAVIGATING THE LEGAL SEAS; REVISITING THE CONCEPT OF "LAUNCHING STATE" WITH REGARD TO SHIP-BASED SPACE LAUNCHES

VERA I. PALIALEXI, National and Kapodistrian University Of Athens, ATHENS, Greece

IAC-24.E7.4.3

TOWARD THE CLARIFICATION OF THE CONCEPT OF "STATE WHICH PROCURES THE LAUNCHING"

Riko Ishiyama, Japan Aerospace Exploration Agency (JAXA), Tsukuba-shi, Ibaraki-ken, Japan

IAC-24.E7.4.4

UNAUTHORISED PRIVATE SPACE ACTIVITIES: ISSUES OF RESPONSIBILITY AND LIABILITY FOR LAUNCHING STATES

Andrea Capurso, LUISS Guido Carli University, Rome, Italy

IAC-24.E7.4.5

SPACE INSURANCE REQUIREMENTS: TOWARD MODERNIZING INTERNATIONAL LIABILITY IMPLEMENTATIONS

Salomé Paradis, Laval University, Québec, Canada

IAC-24.E7.4.6

THE UNCONTROLLED REENTRY OF ROCKET STAGES AND THE RISKS FOR COUNTRIES ON THE EQUATORIAL LINE OF THE GLOBE

Luciana Gonçalves, Aeronautic Institute of Technology (ITA), Sao Joe dos Campos, Brazil

IAC-24.E7.4.7

FRENCH SPACE OPERATION ACT EVOLUTIONS AND CHALLENGES IN FRONT OF THE EXCITING NEWSPACE INITIATIVES

Nicolas PILLET, Centre National d'Etudes Spatiales (CNES), PARIS, France

IAC-24.E7.4.8

THE APPROACH TO SPACE PORTS AND LAUNCHES UNDER PORTUGUESE LAW

Helena Correia Mendonça, Vieira de Almeida & Associados, Lisbon, Portugal

IAC-24.E7.4.9

NUCLEAR POWERED ROCKETS: LEGAL ISSUES AND PERSPECTIVES.

Michael Dodge, University of North Dakota, Grand Forks, United States

IAC-24.E7.4.10

RANGE SAFETY IN A LUNAR CONTEXT: LEGAL AND POLICY ISSUES
Andrea Harrington, Institute of Air and Space Law, McGill University, Montreal, QC, Canada

IAC-24.E7.4.11

INVESTMENT PROTECTION OBLIGATIONS OF LAUNCHING STATES UNDER INTERNATIONAL LAW

Laura Yvonne Zielinski, Mexico City, Mexico

IAC-24.E7.4.12

ESTABLISHING PRE-LAUNCH INSPECTION PROTOCOLS AND REGULATORY BOUNDARIES FOR SPACE ACTIVITIES IN PURSUIT OF SPACE PEACE

Samiksha Raviraja, University of Leicester, Stevenage, United Kingdom

E7.5. Alternative Space Rules Setting

October 16 2024, 15:00 — Green Hall 3

Co-Chair(s): Philippe Clerc, Centre National d'Etudes Spatiales (CNES), France; Christopher Newman, Northumbria University, United Kingdom

Rapporteur(s): Maruska Strah, International Institute of Space Law (IISL), Slovenia

IAC-24.E7.5.1

EMERGING TECHNOLOGIES: THE SFAIRP TEST AS AN EXPRESSED ADMINISTRATIVE INSTRUMENT FOR SAFETY ASSURANCE IN CREWED AND UNCREWED SPACE ACTIVITIES.

Patrick Neumann, Adelaide, Australia

IAC-24.E7.5.2

FRAGMENTATION OF INTERNATIONAL SPACE LAW: IS THIS A WORRISOME TREND?

Fabio Tronchetti, Northumbria University, Newcastle Upon Tyne, United Kingdom

IAC-24.E7.5.3

NEUTRALITY IN SPACE: THE LEGAL DILEMMA FOR COMMERCIAL SPACE ENTITIES

Guoyu Wang, Beijing Institute of Technology (BIT), BEIJING, China

IAC-24.E7.5.4

SPACE SECURITY GOVERNANCE ON THE MOON AND IN Cislunar: CHALLENGES FOR THE EXISTING LEGAL FRAMEWORK AND THE PATHWAY FORWARD

Rebecca Connolly, The University of Sydney, Camperdown, Australia

IAC-24.E7.5.5

STATE RESPONSIBILITY STRUCTURE FOR SUPERVISING COMMERCIAL SPACE ACTIVITIES

Yu Takeuchi, Japan Aerospace Exploration Agency (JAXA), Ibaraki, Japan

IAC-24.E7.5.6

TECHNICAL STANDARDS AND SPACE LAW: A COMPLEMENTARY AND COMPLICATED RELATIONSHIP

Michail Chatzipanagiotis, University of Cyprus, Nicosia, Cyprus

IAC-24.E7.5.7

THE ARTEMIS ACCORDS AND THE WASHINGTON COMPACT: A TWO-PRONGED APPROACH TO ENHANCING THE RULE OF LAW IN SPACE

Mark Sundahl, Cleveland State University, Cleveland, OH, United States

IAC-24.E7.5.8

THE DEONTIC LOGIC OF SPACE LAW APPLIED TO LUNAR SCENARIOS

Christopher Johnson, Secure World Foundation, Washington, DC, United States

IAC-24.E7.5.9

THE TRANSFORMATION OF HUMAN RIGHTS IN THE CONTEXT OF PROGRESSIVE SPACE ACTIVITIES

Anna Hurova, International Institute of Space Law (IISL), Kyiv, Ukraine

IAC-24.E7.5.10

THE UNEXPLORED WORLD OF SPACE STANDARDS

Mahulena Hofmann, University of Luxembourg, Luxembourg, Luxembourg

IAC-24.E7.5.11

THE UPSURGE IN POLITICAL COMMITMENTS RELATING TO OUTER SPACE: FROM INTERNATIONAL LAW TO A "RULE-BASED INTERNATIONAL SPACE ORDER"?

Brendan Cohen, Cleary Gottlieb Steen & Hamilton LLP, New York, United States

IAC-24.E7.5.12

CRIMES IN SPACE: CAN PRIVATE INTERNATIONAL LAW OFFER THE ANSWERS?

Laura Jamschon Mac Garry, Universidad de Belgrano, Buenos Aires, Argentina

IAC-24.E7.5.13

ITU'S CONTRIBUTION TO SPACE LAW: ENHANCING THE SYNERGY BETWEEN TELECOMMUNICATIONS AND SPACE LEGAL FRAMEWORKS

Prof Philippe Achilleas, Institut du Droit de l'Espace et des Telecommunications (IDEST), Sceaux, France

E7.6/E3.5. 38th IAA/IISL Scientific Legal Roundtable: "Cyberspace Security in Outer Space: Scientific, Technical and Legal Dimensions of a Dilemma"

October 17, 2024, 10:15 - Green Hall 3

Co-Chair(s): Dr. Nicola Rohner-Willsch, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Germany; Dr. PJ Blount, Cardiff University, United Kingdom; Dr. Ivan Fino, Space Generation Advisory Council (SGAC), Italy; Ms. Ruth Pritchard-Kelly, Oneweb, United Kingdom;

Speakers:

Clemence Poirier, Center for Security Studies, ETH Zürich, Switzerland
Paul Coggin, nou systems, USA
Dr. Catherine Doldirina, D-Orbit, Italy
Dr. George D. Kyriakopoulos, School of Law, University of Athens, Greece

E7.7. Regional Space Legislation

October 18 2024, 10:15 — Green Hall 3

Co-Chair(s): Guoyu Wang, Beijing Institute of Technology (BIT), China; Bernhard Schmidt-Tedd, Leuphana University, Germany

Rapporteur(s): Katharina Prall, BHO Legal, Germany

IAC-24.E7.7.1

EU SPACE LAW: INTERNATIONAL PRINCIPLES IMPLEMENTED AT A SUPRA-NATIONAL LEVEL

Maria Elena De Maestri, Università degli Studi di Genova, Genova, Italy

IAC-24.E7.7.3

EVOLUTIONARY AFRICAN SPACE GOVERNANCE THROUGH REGIONAL ECONOMIC COMMUNITIES

Arnold Agaba, Institute of Air and Space Law, McGill University, Montreal, Canada

IAC-24.E7.7.5

THE EMERGENCE OF REGIONAL SPACE LEGAL FRAMEWORKS: THE UNITY OF INTERNATIONAL SPACE LEGAL ORDER UNDER THE THREAT?!

Sima Moradinasab, Shahid Beheshti University, Tehran, Iran

IAC-24.E7.7.6

MULTILATERALISM AND EMERGING LEGAL ISSUES IN SPACE RESOURCES ACTIVITIES: LAW AND REGULATORY OVERSIGHT
Xiaoya Lin, China Great Wall Industry Corporation (CGWIC), Beijing, China

IAC-24.E7.7.7

COOPERATION OF CIS MEMBER STATES IN THE EXPLORATION AND USE OF OUTER SPACE

Irina Chernykh, Peoples' Friendship University of Russia (RUDN University), Moscow, Russian Federation

IAC-24.E7.7.8

A GLOBAL REGIME FOR THE MOON DEVELOPMENT AND EXPLOITATION: TOWARDS PROMOTING THE COMMON INTERESTS OF HUMANITY

Tao Zhang, Shenzhen University, Shenzhen, China

IAC-24.E7.7.9

OUTER SPACE AS 'ENVIRONMENT': STATES' REGULATORY MEASURES AND FOREIGN INVESTMENT PROTECTION

Güneş Ünüvar, University of Luxembourg, Luxembourg, Luxembourg

IAC-24.E7.7.10

COMPARATIVE ANALYSIS OF LEGAL FRAMEWORKS SHAPING SPACE ACTIVITIES IN THE GCC COUNTRIES

Elie Badawi, Institut du Droit de l'Espace et des Telecommunications (IDEST), Rueil-Malmaison, France

IAC-24.E7.7.11

GOING GLOBAL OR STAYING LOCAL; THE NEW DILEMMA IN SPACE LAW SETTING

Theodora Liameti, University of Luxembourg, Athens, Greece

IAC-24.E7.7.12

SPACE STICKERS: DEVELOPING SAFETY AND SUSTAINABILITY LABELS FOR THE SPACE SECTOR

Sindhu Shankar, International Institute of Air and Space Law, Leiden University, Leiden, The Netherlands

IAC-24.E7.7.13

A LONG AND WINDING ROAD – TOWARDS AN EU SPACE LAW?

Frans G. Von der Dunk, University of Nebraska, College of Law, Leiden, The Netherlands

IAC-24.E7.7.14

THE EU SPACE REGULATORY FRAMEWORK FOR A SUCCESSFUL SPACE SECTOR?

Claudiu Mihai Taiatu, International Space University (ISU), Illkirch-Graffenstaden, France

E8. IAA MULTILINGUAL ASTRONAUTICAL TERMINOLOGY SYMPOSIUM

Coordinator(s): Susan McKenna-Lawlor, Space Technology (Ireland) Ltd., Ireland; Tetsuo Yoshimitsu, Institute of Space and Astronautical Science (ISAS), Japan Aerospace Exploration Agency, Japan

E8.1. Multilingual Astronautical Terminology

October 18 2024, 13:45 — Orange Hall 2

Co-Chair(s): Susan McKenna-Lawlor, Space Technology (Ireland) Ltd., Ireland; Tetsuo Yoshimitsu, Institute of Space and Astronautical Science (ISAS), Japan Aerospace Exploration Agency, Japan

Rapporteur(s): Fabrice Dennemont, International Academy of Astronautics (IAA), France

IAC-24.E8.1.1 (unconfirmed)

TRANSLATION OF SPACE EXPLORATION TERMINOLOGY: A CASE STUDY OF THE TRANSLATION OF THE GLOBAL EXPLORATION ROADMAP INTO KOREAN

Soyoung Chung, Korea Aerospace Research Institute (KARI), Daejeon, Korea, Republic of

IAC-24.E8.1.2

SANSKRIT IN MODERN SCIENTIFIC ERA: REIMAGINING LANGUAGE AND TERMINOLOGY

Mayank Mishra, Delhi Technological University, New Delhi, India

IAC-24.E8.1.3

THE INTERRELATION BETWEEN LANGUAGE AND COOPERATION IN THE SPACE INDUSTRY: A STUDY OF THE NAMES OF SPACE MISSIONS

Flaminia Smoquina, Agenzia Spaziale Italiana (ASI), Rome, Italy

IAC-24.E8.1.4

THE 1967 OUTER SPACE TREATY AND THE DISCREPANCIES EXISTING BETWEEN THE ENGLISH AND SPANISH VERSIONS OF THE TREATY. THE NEED TO REVISE THE SPANISH VERSION OF ARTICLE IX OF THE TREATY.

Rafael Moro Aguilar, Florida State University, Coral Gables, United States

IAC-24.E8.1.5

COSMOS + ALPHABET = ALCOSBET

Matanat Ahmadova, Baku, Azerbaijan

IAC-24.E8.1.6

THE LANGUAGE OF ASTRODYNAMICS RESEARCH ARTICLES

Olga Ovchinnikova, Keldysh Institute of Applied Mathematics of RAS, Moscow, Russian Federation

E9. IAF SYMPOSIUM ON SECURITY, STABILITY AND SUSTAINABILITY OF SPACE ACTIVITIES

Coordinator(s): Serge Plattard, University College London (UCL), United Kingdom; Stefano Zatti, University of Rome "La Sapienza", Italy

E9.2. Cyber-based security threats to space missions: establishing the legal, institutional and collaborative framework to counteract them

October 14 2024, 15:30 — Brown Hall 2

Co-Chair(s): Julien Airaud, Centre National d'Etudes Spatiales (CNES), France; Stefano Zatti, University of Rome "La Sapienza", Italy

IAC-24.E9.2.1

ESTABLISHING A GOVERNANCE FOR CYBER OPERATIONS IN OUTER SPACE: EXPLORING CHALLENGES FACED BY SPACE COMMANDS

Clémence Poirier, The Center for Security Studies (CSS) at ETH Zurich, Zurich, Switzerland

IAC-24.E9.2.2

HOW ABOUT A CYBERSECURITY FRAMEWORK TAILORED TO SPACE ACTIVITIES?

Marceau Brigant, Eutelsat, Issy-les-Moulineaux, France; Chehinez Bouafia, Eutelsat, Issy Les Moulineaux, France

IAC-24.E9.2.3

PROTECTING SPACE ASSETS: CYBERSECURITY IMPERATIVES FOR FUTURE MISSIONS

Pietro Santoriello, Partners4Innovation, Milan, Italy; Laura Camardelli, Gianni & Origoni Law Firm, Rome, Italy

IAC-24.E9.2.4

SPACE CRIME: A BASIS FOR INTERNATIONAL LAW TO CRIMINALIZE CYBER INTERFERENCE OF SPACE ACTIVITIES
George Anthony Long, _none, United States

IAC-24.E9.2.5

THE ENVIRONMENTAL IMPLICATIONS OF CYBER ATTACKS ON SATELLITES: ISSUES UNDER THE OUTER SPACE TREATY AND GENERAL INTERNATIONAL LAW
Niki Giannakou, National and Kapodistrian University Of Athens, Athens, Greece; George (Georgios) D. Kyriakopoulos, National and Kapodistrian University Of Athens, Gyfada, Greece

IAC-24.E9.2.6

AI IN SPACE: POTENTIAL, CHALLENGES, AND THE IMPORTANCE OF REGULATORY GUIDELINES
Luca Ricci, Space Generation Advisory Council (SGAC), Rome, Italy

IAC-24.E9.2.7

CYBER-ATTACKS AGAINST SATELLITES: EVOLUTION IN THE FIELD OF TECHNOLOGY, EVOLUTION IN THE FIELD OF TREATY INTERPRETATION?
Niki Giannakou, National and Kapodistrian University Of Athens, Athens, Greece; Iris Iordanidou, Athens, Greece

IAC-24.E9.2.8

CYBERSECURITY AND SPACE: A TRANS-ATLANTIC PERSPECTIVE
Laura Morelli, International Space University (ISU), Loreto (AN), Italy

IAC-24.E9.2.9

DUAL-USE SATELLITES: AN EXAMINATION OF THE APPLICABILITY OF INTERNATIONAL HUMANITARIAN LAW AS A MEANS OF PROTECTING DUAL-USE ASSETS IN SPACE
DAFNI POLITIKOU, National and Kapodistrian University Of Athens, ATHENS, Greece

IAC-24.E9.2.10

SPACE MISSION SECURITY MONITORING
Peter Franke, Telespazio Germany GmbH, Darmstadt, Germany

IAC-24.E9.2.11

CYBERSECURITY MEASURES IN MODERN SPACE EXPLORATION AND AZERBAIJAN'S ROLE
Sadig Jafarov, 313S - Cybersecurity, Baku, Azerbaijan

IAC-24.E9.2.12

START WITH THE RIGHT REQUIREMENTS: A FIRST-PRINCIPLES APPROACH FOR CYBER SECURE SPACE MISSIONS
Bruce Chesley, Teaching Science and Technology, Inc (TSTI), Indian Harbour Beach, FL, United States

E9.3. Norms and Standards for Safe and Responsible Behaviour in Space

October 17 2024, 10:15 — Yellow Hall 3

Co-Chair(s): Peter Martinez, Secure World Foundation, United States; Annamaria Nassisi, Thales Alenia Space Italia, Italy
Rapporteur(s): Rachel Venn, Space Generation Advisory Council (SGAC), United Kingdom

IAC-24.E9.3.2

SPACE AS A ZONE OF PEACE: ENVISIONING A RESOLUTION FOR THE DEMILITARIZATION OF OUTER SPACE
AJ Link, Jus Ad Astra, Washington, DC, United States

IAC-24.E9.3.3

HAS THE TIME COME FOR A CHARTER OF BEST PRACTICES IN SPACE?
Serge Plattard, University College London (UCL), London, United Kingdom

IAC-24.E9.3.4

WHAT IS A NORM OF RESPONSIBLE BEHAVIOR IN OUTER SPACE?
Beatrice Hainaut, Institut de Recherche Stratégique de l'Ecole Militaire (IRSEM), Paris, France

IAC-24.E9.3.6

DELIBERATELY CREATING DEBRIS ON ORBIT: BUILDING UPON EXISTING NORMS TO ELIMINATE THIS THREAT TO SPACE SECURITY AND STABILITY
Victoria Samson, Secure World Foundation, Washington, DC, United States

IAC-24.E9.3.7

REVIEWING SPACE SUSTAINABILITY PRINCIPLES - TOWARDS NORMS FOR SUSTAINED SPACE ECONOMY GROWTH
Ian Christensen, Secure World Foundation, BROOMFIELD, United States

IAC-24.E9.3.8

SPACE SECURITY AND DUAL-USE TECHNOLOGY – CHALLENGES IN ESTABLISHING NORMS FOR SAFE AND RESPONSIBLE BEHAVIOUR IN SPACE.
Rebecca Connolly, The University of Sydney, Camperdown, Australia

IAC-24.E9.3.9

LAYING THE GROUNDWORK FOR DETERRENCE: A PRELIMINARY EXAMINATION OF PRE-DETERRENCE AND STRATEGIC NARRATIVES IN SPACE
Alexandra Chronopoulos, European Space Policy Institute (ESPI), Wien, Austria

IAC-24.E9.3.10

PRIVATE SECTOR'S ROLE IN SHAPING SUSTAINABLE SPACE POLICIES
Miraslava Kazlouskaya, Space Generation Advisory Council (SGAC), Illkirch-Graffenstaden, France

IAC-24.E9.3.11

THE SPACE RUBICON: THE CATCH-22 FOR THE GOVERNMENTS IN PROTECTING COMMERCIAL SPACE ASSETS
Omar Pimentel Marte, Stanford University, Palo Alto, United States; Sariah Fischer, Interlune, Arlington, United States

IAC-24.E9.3.12

UTILITARIANISM IN-ORBIT: IMPLICATIONS OF SAFE AND SUSTAINABLE DECISION-MAKING STANDARDS
Jane Davies, know.space, london, United Kingdom

E10. IAF SYMPOSIUM ON PLANETARY DEFENSE AND NEAR-EARTH OBJECTS

Coordinator(s): Alex Karl, Space Applications Services, Belgium; Alissa J. Haddaji, Harvard University, United States

E10.1. Planetary Defense from Asteroids and Comets

October 17 2024, 15:00 — Green Hall 3

Co-Chair(s): Daniel Mazanek, NASA, United States; Aurélie Moussi, Centre National d'Etudes Spatiales (CNES), France
Rapporteur(s): Alejandro J. Roman Molinas, Paraguayan Space Agency, Paraguay; Alex Karl, Space Applications Services, Belgium

IAC-24.E10.1.1

KEYNOTE: A MISSION TO DEMONSTRATE RAPID-RESPONSE FLYBY RECONNAISSANCE FOR PLANETARY DEFENSE
Nancy Chabot, The John Hopkins University Applied Physics Laboratory, Laurel, United States

IAC-24.E10.1.2

HYPERVELOCITY IMPACT STUDIES ON RUBBLE PILE ASTEROIDS
Minh Lê, The Johns Hopkins University, Baltimore, United States

IAC-24.E10.1.3

NEAR-EARTH OBJECTS DEFLECTION STRATEGIES: A MULTICRITERIA COMPARISON FOR THE TARGET ASTEROID 2023 PDC
Samuele Alberti, Politecnico di Milano, Cesano Maderno, Italy

IAC-24.E10.1.4

STATISTICAL ESTIMATION OF THERMAL INERTIA BASED ON THE YARKOVSKY DRIFT DETECTION FOR A CANDIDATE DEFLECTION ASTEROID 2015 XF261

Xiuhai Wang, Purple Mountain Observatory, Chinese Academy of Sciences, Nanjing 210008, China, Nanjing, China

IAC-24.E10.1.5

THE DYNAMICAL ENVIRONMENT OF POTENTIALLY HAZARDOUS BINARY ASTEROID (285263) 1998 QE2.

Flaviane Venditti, University of Central Florida (UCF), Deland, United States

IAC-24.E10.1.6

FLYEYE 2.0 TELESCOPE

Francesco Maria Cerutti, OHB Italia SpA, Milano, Italy

IAC-24.E10.1.7

SELECTION BIASES FOR DISCOVERING ASPHERICAL IMPACTORS WITH LSST

W. Garrett Levine, Yale University, New Haven, United States

IAC-24.E10.1.8

THE HERA MILANI MISSION

Margherita Cardì, Tyvak International SRL, Torino, Italy

IAC-24.E10.1.9

ATENA: A SMALLSAT MISSION FOR THE 2029 APOPHIS RENDEZVOUS

Carlo Burattini, Argotec, Torino, Italy

IAC-24.E10.1.10

SUMMARY AND HIGHLIGHTS OF THE 2023 IAA PLANETARY DEFENSE CONFERENCE

Alex Karl, Space Applications Services, Ukkel, Belgium

E10.2. Informing Planetary Defense

October 18 2024, 13:45 — Space Hall 4

Co-Chair(s): Daniel Mazanek, NASA, United States; Alissa J. Haddaji, Harvard University, United States

Rapporteur(s): Philipp Maier, Institute of Space Systems, University of Stuttgart, Germany

IAC-24.E10.2.1

KEYNOTE: KEY TAKEAWAYS FROM THE 5TH PLANETARY DEFENSE INTERAGENCY TABLETOP EXERCISE

Ronald Daly, Johns Hopkins University Applied Physics Laboratory, Laurel, United States

IAC-24.E10.2.2

BRIDGING THE GAP IN SCIENCE COMMUNICATION BETWEEN THE PLANETARY DEFENSE COMMUNITY AND THE MEDIA

Anastasia Medvedeva, Moscow, Russian Federation

IAC-24.E10.2.3

USING VALUE-FOCUSED THINKING TO DEFINE RISK COMMUNICATION STRATEGIES FOR NEOS IN THE CONTEXT OF PLANETARY DEFENSE IN BRAZIL.

Glaysa da Silva Ferreira, Technological Institute of Aeronautics - ITA/CTA, Sao Jose dos Campos, Brazil

IAC-24.E10.2.4

NEO MISSIONS OF JAXA

Makoto Yoshikawa, Japan Aerospace Exploration Agency (JAXA), Sagami, Japan

IAC-24.E10.2.5

ZODIAC PIONEER: AN INTERPLANETARY SMALL SATELLITE PLATFORM FOR ASTEROID RECONNAISSANCE

Margherita Cardì, Tyvak International SRL, Torino, Italy

IAC-24.E10.2.6

TAGGING 99942 APOPHIS AND FUTURE NEAR EARTH ASTEROIDS TO ENHANCE SCIENCE GAIN AND INCREASE INFORMATION FOR PLANETARY DEFENSE

Shawn Gallagher, Palm Bay, United States

IAC-24.E10.2.7

UNCERTAINTY ANALYSIS OF DISTRIBUTED DEFLECTION OF POTENTIALLY HAZARDOUS ASTEROIDS USING MULTIPLE IMPACTORS

Minghu Tan, Northwestern Polytechnical University, Xi'an, China

IAC-24.E10.2.9 (unconfirmed)

THE CONTRIBUTIONS OF EUROPEAN LAW TO PLANETARY DEFENSE: MITIGATION THE RISK OF INACTION

Yélén Esslinger, University of Bordeaux, Paris, France

IAC-24.E10.2.10

ANALYZING COLLISION PROBABILITY FOR ASTEROIDS DETECTED ON TOO SHORT ARCS

Xin Liu, Nanjing University, nanjing, China

E11. IAF SYMPOSIUM ON EMERGING SPACE ECOSYSTEMS

Coordinator(s): Matias Campos, Astralintu Space Technologies, Ecuador

E11.1. Connecting Emerging Space ecoSystems

October 16 2024, 10:15 — Yellow Hall 3

Co-Chair(s): Matias Campos, Astralintu Space Technologies, Ecuador; Alejandro J. Roman Molinas, Paraguayan Space Agency, Paraguay

Rapporteur(s): Marlene Losier, Space Renaissance International,

IAC-24.E11.1.2

ADVANCING SPACE CAPABILITIES: THE SATELLITE TECHNOLOGY LADDER IN EMERGING NATIONS

Tetsuhito Fuse, Kyushu Institute of Technology, Kitakyushu, Japan

IAC-24.E11.1.3

SDG 17: MAPPING OPPORTUNITY FOR MUTUALLY BENEFICIAL PARTNERSHIPS IN EMERGING SPACE ECOSYSTEMS

Tim Whitney, Arizona State University, Scottsdale, United States

IAC-24.E11.1.4

SPACE ECOSYSTEM DEVELOPMENT IN RWANDA

Serge Tuyihimbaze, TRL Space, Kigali, Rwanda

IAC-24.E11.1.5

BRINGING SPACE CLOSER TO EMERGING SPACE COUNTRIES: THE EQUATORIAL GROUND STATION NETWORK AND ITS ROLE IN CONNECTING THE GLOBAL SOUTH TO LOW EARTH ORBIT AND BEYOND

Matias Campos, Astralintu Space Technologies, Quito, Ecuador

IAC-24.E11.1.6

THE YOUTH ARE OUR FUTURE: EMERGING PIONEERS AND THEIR ROLE IN EMERGING SPACE ECOSYSTEMS

Luke Heffernan, University of Adelaide, Adelaide, Australia

IAC-24.E11.1.7

CHARTING THE COURSE: CYDONIA FOUNDATION'S STRATEGIES FOR AEROSPACE GROWTH IN COLOMBIA AND BEYOND

Oscar Ojeda, Cydonia Foundation, Bogota, Colombia

IAC-24.E11.1.8

THE IMPACT OF INTER-AFRICAN AND FOREIGN SPACE COOPERATION ON THE GROWTH OF THE AFRICAN SPACE INDUSTRY

Mustapha Iderawumi, Oyo, Nigeria

IAC-24.E11.1.9

EXPANDING THE SPACE INNOVATION ECOSYSTEM MATURITY RUBRIC: INTEGRATING THE NASCENT LEVEL TO ENHANCE GLOBAL PARTICIPATION

Darcey Watson, The Andy Thomas Space Foundation, Adelaide, Australia

IAC-24.E11.1.10

SUSTAINABLE DEVELOPMENT OF AN EMERGING SPACE NATION'S ECONOMY

Micah Walter-Range, Caelus Foundation, Raleigh, NC, United States

IAC-24.E11.1.11

KEY SUCCESS FACTORS FOR THE DEVELOPMENT OF IMPACTFUL SPACE CLUSTERS: LESSONS LEARNED FOR EMERGING SPACE ECOSYSTEMS

Luca Niccolai, know.space, London, United Kingdom

IAC-24.E11.1.12

INTERCONNECTING THE UAE SPACE LANDSCAPE: TECHNOLOGICAL FOUNDATIONS AND STRATEGIC FRAMEWORKS FOR EMERGING ECOSYSTEM COLLABORATION

Sarath Raj Nadarajan Syamala, Amity University, Dubai, Dubai, United Arab Emirates

IAC-24.E11.1.13

DEVELOPING A ROADMAP FOR ORGANIZATIONS IN EMERGING SPACE COUNTRIES TO ENGAGE AND LEAD IN THE NEW SPACE ECONOMY

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