

iSpaRo 2025 Technical Session Program

December 1

Session A-1: Manipulation in Space @Room A (Conference Room 1)

Chairs: Jozsef Kovecses (McGill University), Sofiane Kraïem (ONERA)

15:30	A-1-1	Nonlinear H-infinity Optimal Control for a Free-Floating Space Manipulator with Reaction Wheels under Modeling Uncertainties	Junsik Kim, Minchang Sung, HanEol Lee, Younghoon Choi, Daehee Won, Youngjin Choi (Korea, South)
15:45	A-1-2	Parameter-adaptive Estimation and Control for a Single-link Flexible Space Manipulator Carrying a Large Uncertain Payload	Catherine Guo, Christopher Damaren (Canada)
16:00	A-1-3	Online Inertia Parameter Estimation for Unknown Objects Grasped by a Manipulator Towards Space Applications	Akiyoshi Uchida, Antoine Richard, Kentaro Uno, Miguel A. Olivares-Mendez, Kazuya Yoshida (Japan)
16:15	A-1-4	Task-Space Robust Control of Space Manipulators for Tumbling Satellite Capture	Sofiane Kraïem, Pier Luigi Mercadante, Mathieu Rognant (France)
16:30	A-1-5	Geometric Motion Planning of Free-Floating Space Robot Based on Gauge Fields in Shape Space	Kazutoshi Ito, Tomohiro Yanao (Japan)
16:45	A-1-6	Reduced Interface Model of Flexible Space Robotic Arms and the Application for Robotic Interaction Tasks	Xu Dai, Ali Raoofian, Jozsef Kovecses, Marek Teichmann (Canada)

Session B-1: Intelligence and Autonomy for Planetary Exploration Robots (1) @Room B (Conference Room 2)

Chairs: Robert Ambrose (Texas A&M University), Damien Vivet (ISAE-SUPAERO)

15:30	B-1-1	Real-Time Local Slope Estimation Using Dual LiDARs for Pressurized Spherical Rovers Descending Lunar Craters	Derek Pravecek, Christian Flewelling, Mauricio Trevino, Rishi Jangale, Aaron Villanueva, Joseph Garrett Jibrail, Robert Ambrose (USA)
15:45	B-1-2	Traversability-aware Planning with Dynamic Speed Profiling for Planetary Exploration	Suchetan Saravanan, Damien Vivet (France)
16:00	B-1-3	Transferable Deep Reinforcement Learning for Cross-Domain Navigation: from Farmland to the Moon	Shreya Santra, Thomas Robbins, Kazuya Yoshida (Japan)
16:15	B-1-4	Slope-aware Maximum Uncertainty Sampling for Time-efficient Robotic Mapping on Rough Terrain	Minori Tazaki, Genya Ishigami (Japan)
16:30	B-1-5	CUTE-Planner: Confidence-aware Uneven Terrain Exploration Planner	Miryeong Park, Dongjin Cho, Sanghyun Kim, Younggun Cho (Korea, South)

Session C-1: Multi-Robot Cooperation/Collaboration @Room C (Main Hall)

Chairs: Carlos Pérez-del-Pulgar (University of Malaga, Spain), Kosuke Sakamoto (Chuo University)

15:30	C-1-1	Designing for Distributed Heterogeneous Modularity: On Software Architecture and Deployment of MoonBots	Elian Neppel, Shamistan Karimov, Ashutosh Mishra, Gustavo Hernan Diaz Huenupan, Hazal Gozbasi, Kentaro Uno, Shreya Santra, Kazuya Yoshida (Japan)
15:45	C-1-2	Design and Development of Moonbots Modular Limbs for Reconfigurable Robots on the Moon	Gustavo Hernan Diaz Huenupan, A. Sejal Jain, Matteo Brugnera, Elian Neppel, Shreya Santra, Kentaro Uno, Kazuya Yoshida (Japan)
16:00	C-1-3	Enabling World Information Exchange in a Heterogeneous Team of Robots for Mobile Manipulation	Ryo Sakagami, Martin J. Schuster, Riccardo Giubilato, Alin Albu-Schäffer, Freek Stulp, Andreas Dömel (Germany)
16:15	C-1-4	Cooperative Operations Between the Kalman Planetary Rover and an Unmanned Aerial Vehicle for Planetary exploration	Tymoteusz Glazar (Poland)
16:30	C-1-5	Design and Performance Evaluation of a Scalable Rectenna for Microwave Wireless Charging of Modular Lunar Robots	A. Sejal Jain, Shreya Santra, Hiroyasu Sato, Kazuya Yoshida (Japan)
16:45	C-1-6	[HIGHLIGHT TALK] Cooperative Robotic Exploration of a Planetary Skylight Surface and Lava Cave	Carlos Pérez-del-Pulgar (University of Malaga, Spain)

Session A-2: In-Space Manufacturing, Assembly, and Deployment @Room A (Conference Room 1)

Chairs: Lucy Berthoud (University of Bristol), Daichi Hirano (JAXA)

10:30	A-2-1	Robotic Push-based Self-assembly of Hexagonal Tiles for Space Applications	Chayada Thidrasamee, Sabine Hauert, Lucy Berthoud (United Kingdom)
10:45	A-2-2	Novel Folding Method for Flexible Planes with Non-Negligible Thickness for Autonomous Solar and Antenna Array Deployment	Mitsuhiko Yasuhara, Hiraku Sakamoto (Japan)
11:00	A-2-3	Ground-Truth Validation of the Motion Suspension System for the Qualification of Space Robots Manipulators	Ferdinand Elhardt, Andreas Stemmer, Manfred Schedl, Marco De Stefano, Tobias Bruckmann, Maximo A. Roa (Germany)
11:15	A-2-4	A Microgravity Experiment for Validating Rigid Body Simulation on Deployable Mechanisms	Mitchell Fogelson, Sawyer Thomas, Joseph Kuhl, Jeffrey Lipton, Zachary Manchester (USA)
11:30	A-2-5	A Compact, Reliable, and Reproducible Termination Method for Synthetic Fiber Tendons in Humanoid Robotic Hands for Space Applications	David McDougall, Anthony Barcio, Casey Junkin, Robert Ambrose (USA)
11:45	A-2-6	Computing Informative Views to Support Remote Robot Operations	Michael Lanighan, Kenji Brameld (USA)

Session B-2: Intelligence and Autonomy for Planetary Exploration Robots (2) @Room B (Conference Room 2)

Chairs: Carlos Perez-del-Pulgar (University of Málaga), Claudio Semini (Istituto Italiano di Tecnologia)

10:30	B-2-1	Vision Foundation Models for Domain Generalisable Cross-View Localisation in Planetary Ground–Aerial Robotic Teams	Lachlan Holden, Feras Dayoub, Alberto Candela, David J. Harvey, Tat-Jun Chin (Australia)
10:45	B-2-2	OmniUnet: A Multimodal Network for Unstructured Terrain Segmentation on Planetary Rovers Using RGB, Depth, and Thermal Imagery	Raul Castilla-Arquillo, Carlos Perez-del-Pulgar, Levin Gerdes, Alfonso García-Cerezo, Miguel A. Olivares-Mendez (Luxembourg)
11:00	B-2-3	LunaPolaris: A Stereo Camera, Point Cloud and IMU Dataset for Future Lunar Exploration in Polar Regions	Dave van der Meer, Uland Wong, Miguel A. Olivares-Mendez (Luxembourg)
11:15	B-2-4	An Ultra-Wideband Localization Approach for Unknown Anchor Distributions	Martin Hesse, Dorit Borrmann, Andreas Nuechter, Sergio Montenegro (Germany)
11:30	B-2-5	A Modular Open-Source Rover for Space Robotics Research	Tomás Plácido de Castro, Yeh Jui-Wen, Ivan Gilberto Martin Enciso, Hugo Allard, Armin Wedler, Joseph Reill, Riccardo Giubilato (Germany)
11:45	B-2-6	Towards Proprioceptive Terrain Mapping with Quadruped Robots for Exploration in Planetary Permanently Shadowed Regions	Carlos Alberto Sanchez Delgado, João Carlos Virgolino Soares, Victor Barasuol, Claudio Semini (Italy)

Session C-2: Mission Planning @Room C (Main Hall)

Chairs: Daniel Leidner (DLR), Seiko Piotr Yamaguchi (JAXA)

10:30	C-2-1	Deep Physics-Informed Extreme Learning Machines for Orbit Determination	Fabian Dallinger, Thomas Andert, Benedikt Aigner, Benjamin Haser (Germany)
10:45	C-2-2	Enhancing On-Board Orbit Prediction with Machine Learning	Benedikt Aigner, Thomas Andert, Fabian Dallinger, Benjamin Haser, Johannes Bachmann, Francesco Porcelli, Ernesto Rama Novo (Germany)
11:00	C-2-3	Evaluating Robustness and Adaptability in Learning-Based Mission Planning for Active Debris Removal	Agni Bandyopadhyay, Günther Waxenegger-Wilfing (Germany)
11:15	C-2-4	Bi-Objective Optimal Mission Planning for Active Debris Removal with Refueling	Vivid Chutivikai, Ryo Iijima, Toshinori Kuwahara (Japan)
11:30	C-2-5	EVE: A Preliminary Study of an Autonomous Robotic Assistant for Plant Cultivation in Future Lunar Greenhouses	Andre Fonseca Prince, Caroline Elizabeth Specht, Werner Friedl, Leonard Klüpfel, Ajithkumar Manaparampil, Claudia Philpot, Daniel Schubert, Daniel Leidner (Germany)
11:45	C-2-6	FLOATS: Flexible Light-weight On-orbit Actuator Simulation	Marie-Elisabeth Makohl, Cristina Piazza, Daniel Leidner (Germany)

Session A-3: Orbital Servicing and Debris Removal @Room A (Conference Room 1)

Chairs: Stefano Mauro (Politecnico Di Torino), Tae Ha Park (Nara Space Technology Inc)

13:15	A-3-1	Nonlinear Model Predictive Control for Free Floating Soft Space Robot System	Xiaoqian Gao, Tomasz Rybus, Karol Seweryn, Tadeusz Uhl (Poland)
13:30	A-3-2	Gecko-Inspired Adhesive Lasso for De-tumbling Orbital Debris	EmJ Rennich, Kayla Magruder, Mark Cutkosky (USA)
13:45	A-3-3	Advancements in Design and Testing of IDRA, a Modular Inflatable Robotic Arm for Space Applications	Pierpaolo Palmieri, Matteo Gaidano, Matteo Melchiorre, Laura Salamina, Mario Troise, Stefano Mauro (Italy)
14:00	A-3-4	Improving Contact Time in Active Debris Removal Interaction via Optimised Hybrid Compliance	Maxime Hubert Delisle, Mohatashem Reyaz Makhdoomi, Baris Yalcin, Miguel A. Olivares-Mendez, Carol Martinez (Luxembourg)
14:15	A-3-5	Improved 3D Gaussian Splatting of Unknown Spacecraft Structure by Leveraging Space Environment Illumination Knowledge	Tae Ha Park, Simone D'Amico (Korea, South)
14:30	A-3-6	Online Moment of Inertia Ratio Estimation for Uncooperative Spacecraft Based-on External Angular Velocity Measurements	Yudai Furuta, Toshinori Kuwahara (Japan)
14:45	A-3-7	Two-Stage CNN-Based Pose Estimation for Uncooperative Axisymmetric Spacecraft	Toma Takahashi, Yudai Furuta, Toshinori Kuwahara (Japan)

Session B-3: Intelligence and Autonomy for Planetary Exploration Robots (3) @Room B (Conference Room 2)

Chairs: Lukas Burkhard (DLR), Kentaro Uno (Tohoku University)

13:15	B-3-1	Transformers vs CNNs: Enhancing Semantic Segmentation for Martian Terrain Classification	Fakher Mohammad, Yifan Li, Yang Gao (United Kingdom)
13:30	B-3-2	Adaptive Science Operations in Deep Space Missions Using Offline Belief State Planning	Grace Kim, Hailey Warner, Duncan Eddy, Evan Astle, Zachary Booth, Edward Balaban, Mykel Kochenderfer (USA)
13:45	B-3-3	The DLR Autonomous Navigation for the MMX Rover Under Phobos Environmental Influences: Illumination, Temperature, and Radiation	Lukas Burkhard, Jitao Zheng, Hans-Juergen Sedlmayr (Germany)
14:00	B-3-4	Learning Decentralized Routing Policies via Graph Attention-based Multi-Agent Reinforcement Learning in Lunar Delay-Tolerant Networks	Federico Lozano-Cuadra, Beatriz Soret, Marc Sanchez Net, Abhishek Cauligi, Federico Rossi (Spain)
14:15	B-3-5	Multi-Modal Decentralized Reinforcement Learning for Modular Reconfigurable Lunar Robots	Ashutosh Mishra, Shreya Santra, Elian Neppel, Edoardo Marsigli Rossi Lombardi, Shamistan Karimov, Kentaro Uno, Kazuya Yoshida (Japan)
14:30	B-3-6	Sim2Dust: Mastering Dynamic Waypoint Tracking on Granular Media	Andrej Orsula, Matthieu Geist, Miguel A. Olivares-Mendez, Carol Martinez (Luxembourg)
14:45	B-3-7	[HIGHLIGHT TALK] MoonBot: Modular and On-demand Reconfigurable Robot Towards Moon Base Construction	Kentaro Uno (Tohoku University, Japan)

Session C-3: Spacecraft/Satellite Technology @Room C (Main Hall)

Chairs: Hiraku Sakamoto (Institute of Science Tokyo), Josef Biberstein (MIT)

13:15	C-3-1	Bridging the Basilisk Astrodynamics Framework with ROS 2 for Modular Spacecraft Simulation and Hardware Integration	Elias Krantz, Ngai Nam Chan, Gunnar Tibert, Huina Mao, Christer Fuglesang (Sweden)
13:30	C-3-2	Robust SDRE-Based Real-Time 6-DOF Proximity Control for Electromagnetic Formation Flight	Hideki Yoshikado, Shin-ichiro Sakai (Japan)
13:45	C-3-3	Deep Reinforcement Learning for Multi-Agent Spacecraft Electromagnetic Formation Flight	Josef Biberstein, Shreeyam Kacker, Kerri Cahoy, Sertac Karaman (USA)
14:00	C-3-4	Solar Sail Attitude Control via a Control Boom and Control Vanes through Deep Reinforcement Learning	Kazutoshi Ito, Tomohiro Yanao (Japan)
14:15	C-3-5	Active Excitation-Based Dynamic Inertia Identification in Satellites	Matteo El Hariry, Vittorio Franzese, Miguel A. Olivares-Mendez (Luxembourg)
14:30	C-3-6	Experimental Validation of Magnetically-Actuated Satellite Swarm Using Time-Integrated Control and Certified Learning	Yuta Takahashi, Seang Shim, Yusuke Sawanishi, Masaru Ishida, Sumio Morioka, Takahiro Inagawa, Shin-ichiro Sakai (Japan)
14:45	C-3-7	Toward Learning-Based Power Subsystem Simulation for Scalable Digital Twins in Distributed Space Systems	Angel Pan Du, Andreas Hein (Luxembourg)

Session A-4: Intelligence and Autonomy for Orbital Space Systems (1) @Room A (Conference Room 1)

Chairs: Christian Rogon (DLR), Seiko Piotr Yamaguchi (JAXA)

10:30	A-4-1	Deep Learning Warm Starts for Trajectory Optimization on the International Space Station	Somrita Banerjee, Abhishek Cauligi, Marco Pavone (USA)
10:45	A-4-2	Free-Flying Crew Cooperative Robots on the ISS: A Joint Review of Astrobee, CIMON, and Int-Ball Operations	Seiko Piotr Yamaguchi, Andres Mora, Till Eisenberg, Chrisitan Rogon, Tatsuya Yamamoto, Shota Inoue, Christoph Kössl, Brian Coltin, Trey Smith, Jose Benavides (Japan)
11:00	A-4-3	NeRF-based Visualization of 3D Cues Suporting Data-Driven Spacecraft Pose Estimation	Antoine Legrand, Renaud Detry, De Vleeschouwer Christophe (Belgium)
11:15	A-4-4	Autonomous Planning In-space Assembly Reinforcement-learning free-flyer (APIARY) International Space Station Astrobee Testing	Samantha Chapin, Kenneth Stewart, Roxana Leontie, Carl Glen Henshaw (USA)
11:30	A-4-5	Machine Learning and Heuristic Hybrid Control System for Complex Manipulation Automation in Space: Flexible Object Handling for Intra-Vehicular Task Assistance	Shu Morikuni, Seiko Piotr Yamaguchi, Kazuya Ito, Akihiko Honda, Riichi Itakura (Japan)
11:45	A-4-6	A High-Level Discrete Model for the Analysis of Robotic Assembly of Large-Scale Structures	George Burns, Lucy Berthoud, Arthur Richards (United Kingdom)

Session B-4: Space Robotic Locomotion (1) @Room B (Conference Room 2)

Chairs: Frances Zhu (Colorado School of Mines), Fabian Buse (DLR)

10:30	B-4-1	Slip Computation of Chandrayaan 3 Rover using Chandrayaan 2 High Resolution Camera Images	Chinmay S Mhatre, Rima Ghosh, Shashank Tomar, Siva M S (India)
10:45	B-4-2	TRP - Towards a Highly Versatile Utility Rover for Planetary Exploration	Martin Görner, Bernhard Vodermayr, Wieland Bertleff, Kristin Lakatos, Andreas Dömel, Maximilian Durner, Riccardo Giubilato, Benedikt Heinrich, Peter Lehner, Annika Maier, Antoine Pignede, Joseph Reill, Ryo Sakagami, Florian Schmidt, Florian Schuler, Martin J. Schuster, Tom Schwab, Daniel Seidel, Marco Sewtz, Bertram Willberg, Tilo Wüsthoff, Armin Wedler, Matthias Maurer, Heinrich Gmeiner (Germany)
11:00	B-4-3	Mobility Test Means of the MMX Rover IDEFIX at DLR - Prototypix	Fabian Buse, Lukas Burkhard, Nico Borgsmüller, Erich Krämer, Marie Kretschmer, Henrik Munders, Juliane Skibbe, Roman Weinberger (Germany)
11:15	B-4-4	Rover Mobility in a Lunar Analogue Dataset	Bailey Hopkins, Ryan Hartzell, Ethan Paul, Cameron Hinkle, Charles Yuroff, Charlie Yuroff, Christopher Dreyer, Frances Zhu (USA)
11:30	B-4-5	Traction Analysis Using Differential Suspension for Planetary exploration Rover	Jorge Casir, Abdulla Hil Kafi, Angel Ruiz Davila, Yuzuki Fukata, Ryota Hino, Kosuke Iwatsu, Taichi Nakamura, Kenji Nagaoka (Japan)
11:45	B-4-6	Design and Kinematics of an Active Suspension Rover for Extreme Terrain	Sarah Lam, Heaven De Leon, Daniyal Ansari, Robert Ambrose (USA)

Session C-4: Robotic Manipulation and ISRU for Planetary Missions @Room C (Main Hall)

Chairs: Raul Castilla-Arquillo (University of Luxembourg), Akiko Otsuka (JAXA)

10:30	C-4-1	Cosmic Gripper-1: 3-Finger Gripper for Space Tasks	Taewon Choi, Sangphil Choi, Bureum Jun, Daehee Won, Jae-Han Park, Dong-Hyuk Lee (Korea, South)
10:45	C-4-2	Development of Bucket Drum Excavation System with Reaction Force Control for In-situ Resource Utilization	Tomoyasu Nakano, Takuya Omura, Genya Ishigami (Japan)
11:00	C-4-3	Long-Reach Robotic Manipulation for Assembly and Outfitting of Lunar Structures	Stanley Wang, Velin Kojouharov, Long Yin Chung, Daniel Morton, Mark Cutkosky (USA)
11:15	C-4-4	Design and Development of a Modular Bucket Drum Excavator for Lunar ISRU	Simon Giel, James Michael Hurrell, Shreya Santra, Ashutosh Mishra, Kentaro Uno, Kazuya Yoshida (Germany)
11:30	C-4-5	An Agnostic End-Effector Alignment Controller for Robust Assembly of Modular Space Robots	Shamistan Karimov, Elian Neppel, Shreya Santra, Kentaro Uno, Kazuya Yoshida (Japan)
11:45	C-4-6	Concepts of a Robotic Arm System for Lunar Pressurized Rover and its Dust Mitigation Challenges	Nobutaka Tanishima, Seiko Piotr Yamaguchi, Masaru Wada, Yusuke Yamasaki, Akiko Otsuka, Natsu Fujioka (Japan)

Session A-5: Intelligence and Autonomy for Orbital Space Systems (2) @Room A (Conference Room 1)

Chairs: Hiroki Nakanishi (Institute of Science Tokyo), Adam Charles Vigneron (Carleton University)

13:30	A-5-1	Crossing the Sim2Real Gap Between Simulation and Ground Testing to Space Deployment of Autonomous Free-flyer Control	Kenneth Stewart, Samantha Chapin, Roxana Leontie, Carl Glen Henshaw (USA)
13:45	A-5-2	A Hybrid Adaptive Visual Servoing Approach for Robust Robotic Manipulation in space	Lina María Amaya-Mejía, Kuldeep R Barad, Miguel A. Olivares-Mendez, Carol Martinez (Luxembourg)
14:00	A-5-3	Control Barrier Functions for Safe Real-Time Control of Spacecraft Onboard Robotic Manipulators	Jan Luca Loettgen, Kevin Worrall, Gerardo Aragon-Camarasa, Matteo Ceriotti, Roberto Lampariello (United Kingdom)
14:15	A-5-4	Deep Reinforcement Learning for Smooth Guidance of a Free Floating Robot in Point-to-Point Tasks	Jan Luca Loettgen, Matteo Ceriotti, Gerardo Aragon-Camarasa, Kevin Worrall (United Kingdom)
14:30	A-5-5	Model-Free Learning Compensation of Robotic Arm Manoeuvres for a Free-Flying Base	Adam Charles Vigneron, Steve Ulrich (Canada)
14:45	A-5-6	Non-Invasive Six-Axis Force-Torque Sensor Temperature Correction & Calibration Refinement with Application to the Robotic Space Simulator	Eddie Hilburn, Adam Pettinger, Annanya Tyagi, James Lee, Robert Ambrose (USA)

Session B-5: Space Robotic Locomotion (2) @Room B (Conference Room 2)

Chairs: Kenji Nagaoka (Kyushu Institute of Technology), Jorge Casir (Kyushu Institute of Technology)

13:30	B-5-1	Determine the Payload Capacity of a Rover by Simulation and Experiment	Antoine Pignede, Dennis Franke, Lukas Ruschinzik, Johannes Frithjof Koch, Manuel Schütt, Roy Lichtenheldt (Germany)
13:45	B-5-2	Energy-Efficient Learning-Based Control of a Legged Robot in Multiple Gravity Environments	Philip Arm, Oliver Fischer, Joseph Church, Adrian Fuhrer, Hendrik Kolvenbach, Marco Hutter (Switzerland)
14:00	B-5-3	Development of Multi-Layered Wheels for Lunar Rovers	Taichi Haraguchi, Kimitaka Watanabe, Kazuto Tanaka, Masataka Kawaguchi (Japan)
14:15	B-5-4	Autonomous Legged Mobile Manipulation for Lunar Surface Operations via Constrained Reinforcement Learning	Alvaro Belmonte-Baeza, Miguel Cazorla, Gabriel J. Garcia, Carlos Perez-del-Pulgar, Jorge Pomares (Spain)
14:30	B-5-5	Evaluating the Performance of the Novel Spoke Design in the SCOUT Rover's Rimless Wheels	Dennis Franke, Johannes Frithjof Koch, Antoine Pignede, Lukas Ruschinzik, Manuel Schütt, Roy Lichtenheldt (Germany)
14:45	B-5-6	Investigation of Gait Control Strategies for the Locomotion Behavior of the CHERI Quadrupedal Lunar Rover	Nurettin Tank Mut, NİSANUR TAHTALIOĞLU, Eren Kazaz, Denge Uzel, Abdullah Naci Bodur, Ahmet Berkay Kara, Halil Ersin Soken, Mustafa Mert Ankarali (Turkey)

Special Session: Current Insights from Space Agencies @Room C (Main Hall)

Chairs: Shreya Santra (Tohoku University), Maximo A. Roa (DLR)

13:30	SS-1	From Mars to Moons: Unveiling JPL's Cutting-Edge Space Robot Capabilities	Amir Rahmani (NASA)
13:50	SS-2	Robotics at ESA: Planetary Exploration and Orbital Applications	Martin Azkarate, Gunter Just (ESA)
14:10	SS-3	From SpaDeX to BAS: India's Leap Towards Mastering Autonomous Space Docking	Kanupriya Govila (ISRO) [online]
14:30	SS-4	Automation and Robotics in the German Space Program	Thomas Wolf (DLR)
14:50	SS-5	JAXA's Space Robotics 2025	Hiroki Kato (JAXA)

Session A-6: Prox Ops/Rendezvous/Docking @Room A (Conference Room 1)

Chairs: Caroline Elizabeth Specht (DLR), Akiko Otsuka (JAXA)

15:30	A-6-1	Optimal Trajectory Planning for Orbital Robot Rendezvous and Docking	Kenta Iizuka, Akiyoshi Uchida, Kentaro Uno, Kazuya Yoshida (Japan)
15:45	A-6-2	Approach Guidance and Control for Tumbling Uncooperative Target Using Adaptive Artificial Potential Field	Satoshi Ohya, Toshinori Kuwahara (Japan)
16:00	A-6-3	Convex Maneuver Planning for Spacecraft Collision Avoidance	Fausto Vega, Jon Arrizabalaga, Ryan Watson, Zachary Manchester (USA)
16:15	A-6-4	Localization-aware Trajectory Planning on SE(3) for Intravehicular Robots	Caroline Elizabeth Specht, Tommaso Faraci, Victor Kowalski Martins, Roberto Lampariello (Germany)
16:30	A-6-5	Virtual Production for Hardware-in-the-Loop Vision-based Orbital Navigation Experiments	Mohsi Jawaid, Marcus Märtens, Owen Thomas Claxton, Justin Pierre du Plessis, Tat-Jun Chin (Australia)

Session B-6: Space Robotic Locomotion (3) @Room B (Conference Room 2)

Chairs: Antoine Pignede (DLR), Shreya Santra (Tohoku University)

15:30	B-6-1	Towards an Explainable Reinforcement Learning Agent for Resource-Constrained Robots	Giorgio Clivio (United Kingdom)
15:45	B-6-2	High-Speed Wheel Performance Linear Regression Modeling on Loose Terrain Based on Single-Wheel Experiment	Keisuke Takehana, Tsutomu Hamabe, Fumito Kurata, Yuya Onozuka, Kazuya Yoshida (Japan)
16:00	B-6-3	Data-Driven Terramechanics Approach Towards a Realistic Real-Time Simulator for Lunar Rovers	Jakob Marian Kern, James Michael Hurrell, Shreya Santra, Keisuke Takehana, Kentaro Uno, Kazuya Yoshida (Japan)
16:15	B-6-4	Design and Analysis of a Limbed Free-Climbing Robot for Irregular Angled Surfaces	Peter Panorel, Kenji Nagaoka (Japan)
16:30	B-6-5	3D Mapping Using a Lightweight and Low-Power Monocular Camera Embedded inside a Gripper of Limbed Climbing Robots	Taku Okawara, Ryo Nishibe, Mao Kasano, Kentaro Uno, Kazuya Yoshida (Japan)

Session C-6: Telerobotics and Planetary Simulaton @Room C (Main Hall)

Chairs: Peter Schmaus (DLR), Kosuke Sakamoto (Chuo University)

15:30	C-6-1	A Human-in-the-Loop Remote Control Framework for Planetary Rovers Based on Digital Twin	Lintao Yang, Huaiguang Yang, Liang Ding, Lize Guan, Ruyi Zhou, Haibo Gao, Zongquan Deng (China)
15:45	C-6-2	NealAI: a RAG-based Chat Assistant Supporting Command of a Robotic Team from the ISS	Philipp Georg Knestel, Luisa Mayershofer, Anne Köpken, Nesrine Batti, Florian Samuel Lay, Timo Bachmann, Sant Brinkman, Jörg Butterfass, Emiel den Exter, Werner Friedl, Thomas Gumpert, Xiaozhou Luo, Ajithkumar Manaparampil, Tai Mai, Antonin Raffin, Florian Schmidt, Annika Schmidt, Daniel Seidel, Lioba Schuermann, Nicole Wenzinger, Bernhard Weber, Alin Albu-Schäffer, Adrian Simon Bauer, Daniel Leidner, Rute Luz, Peter Schmaus, Freek Stulp, Thomas Krueger, Samuel Bustamante, Neal Y. Lii (Germany)
16:00	C-6-3	Uncertainty-Aware Task Parameterization for Telerobotic Space Missions	Anne Köpken, Adrian Simon Bauer, Nesrine Batti, Timo Bachmann, Sant Brinkman, Jörg Butterfass, Tristan Ehlert, Emiel den Exter, Werner Friedl, Thomas Gumpert, Philipp Georg Knestel, Florian Samuel Lay, Xiaozhou Luo, Ajithkumar Manaparampil, Luisa Mayershofer, Antonin Raffin, Anne Elisabeth Reichert, Nicole Wenzinger, Annika Schmidt, Florian Schmidt, Daniel Seidel, Lioba Schuermann, Rute Luz, Peter Schmaus, Daniel Leidner, Thomas Krueger, Neal Y Lii (Germany)
16:15	C-6-4	Simulated Regolith Testing of Origami-Based Covers for Space Robots	Brigid Hickey, Ryan St. Pierre (USA)
16:30	C-6-5	PLUME: Procedural Layer Underground Modeling Engine	Gabriel Manuel Garcia, Antoine Richard, Miguel A. Olivares-Mendez (Luxembourg)