

Final Technical Program (1/12/23)
33rd AAS/AIAA Space Flight Mechanics Meeting

January 15-19, 2023
Austin, Texas

On the following pages please find a list of the accepted papers and a program for their presentation at the 33rd AAS/AIAA Space Flight Mechanics meeting. The detailed program with abstracts is also available online at:

<https://www.xcdsystem.com/aas/program/iwkMaQI/index.cfm>

Special Talks and Events:

Monday 5:15-6:15PM (Onyx Ballroom) — Special Panel entitled

“Each One Teach One: Building a Better and Stronger Astrodynamics Community”

This panel will discuss the role of mentorship and diversity in strengthening our Astrodynamics community. The panel moderator is Dr. Powtawche Valerino, confirmed panelists include Prof. Kathleen Howell (Purdue), Prof. Hanspeter Schaub (Colorado), Ms. Heather Koehler (NASA-Marshall) and Mr. Oyake (Blue Origin).

Celebratory Reception: 6:15-7:15PM (Onyx Ballroom)

Tuesday: 1:00-1:30PM (Onyx 2/3) — ***Canadian Space Agency Overview***, Dr. Isabelle Jean (CSA).

Tuesday: 5:15-6:15PM (Onyx Ballroom)

Special Presentation — *DART: Navigating to Obliteration*, Dr. Julie Bellerose (JPL).

Presentation of the Breakwell Student Travel Awards

Celebratory Reception: 6:15-7:15PM (Onyx Ballroom)

AAS General Chair

Dr. Daniel J. Scheeres
University of Colorado Boulder
[scheeres\(AT\)colorado.edu](mailto:scheeres(AT)colorado.edu)

AIAA General Chair

Dr. Rohan Sood
The University of Alabama
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AAS Technical Chair

Dr. Sonia Hernandez
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Dr. Donghoon Kim
University of Cincinnati
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Monday: Final Technical Program (Update 1/12/23): 33rd AAS/AIAA Space Flight Mechanics Meeting, Austin, Texas

Date	Session Name	Room	Time	Presentation Title	Firstname	Lastname	Company / Institution
1/16	Orbit Determination and Space Surveillance Tracking 1	Onyx 2-3	8:00 AM	Absolute and Autonomous Navigation for Distributed Space Systems with Relative Measurements	Jesse	Greaves	University of Colorado Boulder
1/16	Orbit Determination and Space Surveillance Tracking 1	Onyx 2-3	8:20 AM	A GLMB FILTER FOR SPACE OBJECTS WITH CONTROL METRIC BASED MANEUVER DETECTION	Guillermo	Escribano	Universidad Carlos III de Madrid
1/16	Orbit Determination and Space Surveillance Tracking 1	Onyx 2-3	8:40 AM	Investigation on Autonomous Orbit Determination in Cislunar Space via GNSS and Horizon-Based Measurements	Daniel	Qi	Purdue University
1/16	Orbit Determination and Space Surveillance Tracking 1	Onyx 2-3	9:00 AM	GPS-Based Precise Orbit Determination of LEO Satellites Using Space-based Double-Differenced Observations	Zhigui	Kang	Center for Space Research, The University of Texas at Austin
1/16	Orbit Determination and Space Surveillance Tracking 1	Onyx 2-3	9:20 AM	Orbital Predictions and Spacecraft Observations Through Commercial Telescopes	Paula	do Vale Pereira	Florida Institute of Technology
1/16	Orbital Debris and Space Environment	Topaz 1	8:00 AM	An Investigation On Space Debris Of Unknown Origin Using Proper Elements And Neural Networks	Di	Wu	MIT
1/16	Orbital Debris and Space Environment	Topaz 1	8:20 AM	Monte Carlo methods to model the evolution of the LEO population	Daniel	Jang	Massachusetts Institute of Technology
1/16	Orbital Debris and Space Environment	Topaz 1	8:40 AM	Optimal Target Selection for an Active Debris Removal Mission	Simone	Servadio	Massachusetts Institute of Technology
1/16	Orbital Debris and Space Environment	Topaz 1	9:00 AM	Space debris cloud propagation through finite volume method	Lorenzo	Giudici	Politecnico di Milano
1/16	Orbital Debris and Space Environment	Topaz 1	9:20 AM	Defining a framework for cislunar space debris mitigation using large solution scans from families of periodical solutions	Paolo	Guardabasso	ISAE-SUPAERO
1/16	Orbital Debris and Space Environment	Topaz 1	9:40 AM	Investigation of Fragmentation Events in the Cislunar Domain	Arly	Black	Purdue University
1/16	Trajectory/Mission/Maneuver Design and Optimization 1	Topaz 2	8:00 AM	No Initial Guess Required: Rapidly Computing the Feasible Set of Fuel-Optimal Electric Propulsion Trajectories	Prashant	Patel	Institute for Defense Analyses
1/16	Trajectory/Mission/Maneuver Design and Optimization 1	Topaz 2	8:20 AM	Design of operational compliant trajectories through a homotopic direct collocation algorithm	Alessandra	Mannocchi	Politecnico di Milano
1/16	Trajectory/Mission/Maneuver Design and Optimization 1	Topaz 2	8:40 AM	On the Performance of Different Smoothing Methods for Indirect Low-Thrust Trajectory Optimization	Yanis	Sidhoum	Purdue University
1/16	Trajectory/Mission/Maneuver Design and Optimization 1	Topaz 2	9:00 AM	Indirect Forward-Backward Shooting for Low-Thrust Trajectory Optimization in Complex Dynamics	Yanis	Sidhoum	Purdue University
1/16	Trajectory/Mission/Maneuver Design and Optimization 1	Topaz 2	9:20 AM	Solar electric propulsion boosted transfers to the outer solar system	Amedeo	Rocchi	GMV at ESA/ESOC
1/16	Trajectory/Mission/Maneuver Design and Optimization 1	Topaz 2	9:40 AM	Regularized Direct Method for Nonlinear Trajectory Optimization Part 2: Low-Thrust Scenario	Kenta	Oshima	Hiroshima Institute of Technology
1/16	Rendezvous, Relative Motion, Proximity Missions, and Formation Flying 1	Topaz 3	8:00 AM	Safety in Forced Motion Guidance for Proximity Operations Based on Relative Orbital Elements	Giacomo	Borelli	Politecnico di Milano

1/16	Rendezvous, Relative Motion, Proximity Missions, and Formation Flying 1	Topaz 3	8:20 AM	Post-Docking Spacecraft Dynamics Using Baumgarte Stabilization	João	Vaz Carneiro	University of Colorado Boulder
1/16	Rendezvous, Relative Motion, Proximity Missions, and Formation Flying 1	Topaz 3	8:40 AM	Genetic Fuzzy System-based Control for Final Approach of Spacecraft Rendezvous and Proximity Operations	Daegyun	Choi	University of Cincinnati
1/16	Rendezvous, Relative Motion, Proximity Missions, and Formation Flying 1	Topaz 3	9:00 AM	Fuzzy-Aided Closed-Loop Inverse Kinematics Control for Capturing a Tumbling Satellite	Sathya	Karthikeyan	University of Cincinnati
1/16	Rendezvous, Relative Motion, Proximity Missions, and Formation Flying 1	Topaz 3	9:20 AM	Nonlinear Adaptive Angle-Only Relative Navigation on Perturbed Eccentric Orbits	Yazan	Chihabi	Carleton University
1/16	Orbit Determination and Space Surveillance Tracking 1	Onyx 2-3	10:40 AM	Low-complexity algorithms to determine motion in the circular restricted three-body problem	Brian	Baker-McEvelly	Embry-Riddle Aeronautical University
1/16	Orbit Determination and Space Surveillance Tracking 1	Onyx 2-3	11:00 AM	Orbit Determination Design and Analysis for a Single Lunar Swingby Return to GEO Trajectory	Marissa	Intelisano	Space Exploration Engineering
1/16	Orbit Determination and Space Surveillance Tracking 1	Onyx 2-3	11:20 AM	Optical Tracklet Correlation and Adaptive Birth Modeling for Random Finite Set Filters	Steve	Gehly	Delft University of Technology
1/16	Orbital Debris and Space Environment	Topaz 1	10:20 AM	Image-based Satellite Characterization for Low Earth Orbit	Daigo	Kobayashi	Purdue University
1/16	Orbital Debris and Space Environment	Topaz 1	10:40 AM	Uncertainty Analysis of Atlas V Centaur Upper Stage Fragmentation Events	Arly	Black	Purdue University
1/16	Orbital Debris and Space Environment	Topaz 1	11:00 AM	Considerations for Space Weather Impacts on Spacecraft	Alicia	Petersen	University of Florida
1/16	Orbital Debris and Space Environment	Topaz 1	11:20 AM	Relative Distance Control of Uncooperative Tethered Debris	Liam	Field	SUNY University at Buffalo
1/16	Orbital Debris and Space Environment	Topaz 1	11:40 AM	Towards Modeling of RCS Plume Impingement in Space Environments using OpenFOAM	Jonathan	Pitt	Aegis Aerospace, Inc.
1/16	Orbital Debris and Space Environment	Topaz 1	12:00 PM	Modeling of an RCS Thruster Plume to Predict Particle Distribution in Space Environments	Janice	Zou	University of Central Florida
1/16	Trajectory/Mission/Maneuver Design and Optimization 1	Topaz 2	10:20 AM	JUICE Interplanetary Phase: Trajectory Design and Navigation	Arnaud	Boutonnet	European Space Agency / ESOC
1/16	Trajectory/Mission/Maneuver Design and Optimization 1	Topaz 2	10:40 AM	Analysis of DV and eclipse duration for Crank-Over-the-Top and petal rotations in Europa Clipper moon tours	Stefano	Campagnola	Jet Propulsion Laboratory
1/16	Trajectory/Mission/Maneuver Design and Optimization 1	Topaz 2	11:00 AM	Automated Tour Design in the Saturnian System	Yuji	Takubo	Georgia Institute of Technology
1/16	Trajectory/Mission/Maneuver Design and Optimization 1	Topaz 2	11:20 AM	A Uranus Mission Design Demonstrating a Simulated Annealing Algorithm	Daniel	Owen	University of Kansas
1/16	Trajectory/Mission/Maneuver Design and Optimization 1	Topaz 2	11:40 AM	Double Lunar Swing-by Trajectories to Near-Geostationary Orbit	Stephen	West	Space Exploration Engineering
1/16	Rendezvous, Relative Motion, Proximity Missions, and Formation Flying 1	Topaz 3	10:20 AM	State Transition Tensors for Passive Angles-Only Relative Orbit Determination	Jackson	Kulik	Cornell University
1/16	Rendezvous, Relative Motion, Proximity Missions, and Formation Flying 1	Topaz 3	10:40 AM	Periodic Relative Natural Motion in the Circular Restricted Three-Body Problem	David	Zuehlke	Embry-Riddle Aeronautical University
1/16	Rendezvous, Relative Motion, Proximity Missions, and Formation Flying 1	Topaz 3	11:00 AM	Low-Thrust Rendezvous and Proximity Operations in a Near Rectilinear Halo Orbit	Carrie	Sandel	Astrodynamics and Space Research Laboratory

1/16	Rendezvous, Relative Motion, Proximity Missions, and Formation Flying 1	Topaz 3	11:20 AM	Trajectory Design Considerations for Low Lunar Orbit to Near Rectilinear Halo Orbit Rendezvous	Christopher	Foster	Odyssey Space Research, LLC.
1/16	Rendezvous, Relative Motion, Proximity Missions, and Formation Flying 1	Topaz 3	11:40 AM	Relative Motion on Hyperbolic Atmospheric Entry Trajectories	Samuel	Albert	University of Colorado Boulder
1/16	Trajectory/Mission/Maneuver Design and Optimization 2	Onyx 2-3	1:30 PM	State-dependent trust region for successive convex optimization of spacecraft trajectories	Nicolò	Bernardini	University of Surrey
1/16	Trajectory/Mission/Maneuver Design and Optimization 2	Onyx 2-3	1:50 PM	Sequential Quadratic Programming for Spacecraft Trajectory Optimization using Nested Differential Correctors	Alfred	Lynam	Ansys Government Initiatives (AGI)
1/16	Trajectory/Mission/Maneuver Design and Optimization 2	Onyx 2-3	2:10 PM	Regularized Direct Method for Nonlinear Trajectory Optimization Part 1: High-Thrust Scenario	Kenta	Oshima	Hiroshima Institute of Technology
1/16	Trajectory/Mission/Maneuver Design and Optimization 2	Onyx 2-3	2:30 PM	Structure Detection Method for Solving State Variable Inequality Path Constrained Optimal Control Problems	Cale	Byczkowski	University of Florida
1/16	Trajectory/Mission/Maneuver Design and Optimization 2	Onyx 2-3	2:50 PM	Distributed Swarm Optimization for the Solution of Boundary Value Problems in Astrodynamics	Grant	Hecht	University at Buffalo
1/16	Dynamical Systems Theory Applied to Space Flight	Topaz 1	1:30 PM	Method to Target Quasi-Periodic Orbit Frequencies Within Multi-Parameter Families	David	Lujan	University of Colorado Boulder
1/16	Dynamical Systems Theory Applied to Space Flight	Topaz 1	1:50 PM	Restricting Spacecraft Uncertainty Evolution With Modified Hamiltonian Constraints In Non-Conservative Systems	Oliver	Boodram	University of Colorado Boulder
1/16	Dynamical Systems Theory Applied to Space Flight	Topaz 1	2:10 PM	Low Thrust Augmentation for Ballistic Lunar Transfers	Stephen	Scheuerle	Purdue University
1/16	Dynamical Systems Theory Applied to Space Flight	Topaz 1	2:30 PM	Toward Immersive Spacecraft Trajectory Design: Mapping Arbitrary Drawings to Natural CR3BP Periodic Orbits	Davide	Guzzetti	Auburn University
1/16	Dynamical Systems Theory Applied to Space Flight	Topaz 1	2:50 PM	Computation of Quasi-periodic Orbits in the Zonal Harmonics Problem	Julia	Pasiecznik	Massachusetts Institute of Technology
1/16	Spacecraft Guidance, Navigation and Control 1	Topaz 2	1:30 PM	Pre-Launch Electric Propulsion Error Models for Psyche Navigation	Nicholas	Bradley	NASA / CalTech - JPL
1/16	Spacecraft Guidance, Navigation and Control 1	Topaz 2	1:50 PM	High-Order Guidance for Time-Optimal Low-Thrust Trajectories with Automatic Domain Splitting	Roberto	Armellin	The University of Auckland
1/16	Spacecraft Guidance, Navigation and Control 1	Topaz 2	2:10 PM	Solar Sailing Adaptive Control Using Integral Concurrent Learning for Solar Flux Estimation	Luis	Mendoza Zambrano	Embry-Riddle Aeronautical University
1/16	Spacecraft Guidance, Navigation and Control 1	Topaz 2	2:30 PM	Combined Convex and Direct Shooting Optimization for Low-Thrust Trajectory Generation With Analytical Thrust Profile	Andrea Carlo	Morelli	Politecnico di Milano
1/16	Spacecraft Guidance, Navigation and Control 1	Topaz 2	2:50 PM	Controllability of satellites on periodic orbits with cone-constraints on the thrust direction	Alesia	Herasimenka	Université Côte d'Azur, CNRS, Inria, LJAD
1/16	Asteroid and Small Body Missions	Topaz 3	1:30 PM	Small Body Navigation and Gravity Estimation using Kalman Filter and Least-Squares Fitting	Julio C.	Sanchez	University of Colorado Boulder
1/16	Asteroid and Small Body Missions	Topaz 3	1:50 PM	Simultaneous Optimization of Guidance and Navigation Accuracy for Small Body Terminal Approach Trajectory Design	Yuichi	Tsuda	Japan Aerospace Exploration Agency

1/16	Asteroid and Small Body Missions	Topaz 3	2:10 PM	Improvement to Hera Orbit Determination and Gravity Science via inclusion of LIDAR measurements	Edoardo	Gramigna	University of Bologna
1/16	Asteroid and Small Body Missions	Topaz 3	2:30 PM	Radio Science Investigations for the Heavy-Metal Mission to Asteroid (216) Kleopatra	Riccardo	Lasagni Manghi	University of Bologna
1/16	Asteroid and Small Body Missions	Topaz 3	2:50 PM	Navigating a Dual-Spacecraft Bistatic Radar Around an Asteroid	Andrew	French	Jet Propulsion Laboratory
1/16	Spacecraft Guidance, Navigation and Control 1	Onyx 2-3	3:30 PM	Fast Model Predictive Control for Spacecraft Rendezvous and Docking with Obstacle Avoidance	Courtney	Bashnick	Carleton University
1/16	Spacecraft Guidance, Navigation and Control 1	Onyx 2-3	3:50 PM	Autonomous and Resilient Orbit Estimation Technique Using Lunar Reflectors	Jared	Frank	SDSU
1/16	Spacecraft Guidance, Navigation and Control 1	Onyx 2-3	4:10 PM	Higher Order Control Lyapunov-Barrier Functions for Real-Time Optimal Control of Constrained Non Affine Six-Degree-of-Freedom Powered Descent	Alaa Eddine	Chriat	Mississippi State University
1/16	Dynamical Systems Theory Applied to Space Flight	Topaz 1	3:30 PM	Detecting Heteroclinic Connections Between Quasi-periodic Invariant Tori Using Knot Theory	Danny	Owen	University of Surrey
1/16	Dynamical Systems Theory Applied to Space Flight	Topaz 1	3:50 PM	Exploration of Transfer Opportunities to Low Lunar Orbits in the Cislunar Framework	Mackenzie	Mangette	The Pennsylvania State University
1/16	Dynamical Systems Theory Applied to Space Flight	Topaz 1	4:10 PM	A hybrid stochastic-deterministic integrator for spacecraft dynamics with uncertainty	Carmine	Giordano	Politecnico di Milano
1/16	Dynamical Systems Theory Applied to Space Flight	Topaz 1	4:30 PM	Tracing Position in the Regime of the Restricted Three-Body Problem to a Halo Orbit	Hailee	Hettrick	Massachusetts Institute of Technology
1/16	Trajectory/Mission/Maneuver Design and Optimization 2	Topaz 2	3:30 PM	A GEOMETRICAL ANALYSIS OF TWO-IMPULSE TRANSFERS BETWEEN LISSAJOUS ORBITS	Takuto	Shimazaki	The University of Tokyo
1/16	Trajectory/Mission/Maneuver Design and Optimization 2	Topaz 2	3:50 PM	Optimization of the Two Impulse Orbit Transfer	Grant	Hevia	University of Colorado Boulder
1/16	Trajectory/Mission/Maneuver Design and Optimization 2	Topaz 2	4:10 PM	Efficient Numerical Solution of the Low-Thrust Lambert Problem	Lamberto	Dell'Elce	Inria
1/16	Trajectory/Mission/Maneuver Design and Optimization 2	Topaz 2	4:30 PM	Existence of Infinitely Many Optimal Equal-Delta-v Trajectories in Two-Body Dynamics	Keziban	Saloglu	Auburn University
1/16	Asteroid and Small Body Missions	Topaz 3	3:30 PM	Rigid-Body Spacecraft Dynamics Analysis in a Binary System Using Formulation in Lie Groups	Brennan	McCann	Embry-Riddle Aeronautical University
1/16	Asteroid and Small Body Missions	Topaz 3	3:50 PM	Maneuver strategy optimization of the approach phase in an asteroid rendezvous mission	William	Wang	Purdue University
1/16	Asteroid and Small Body Missions	Topaz 3	4:10 PM	Interstellar Object Uncertainty Evolution and Effect on Fast Flyby Delivery and Required Delta-V	Declan	Mages	Jet Propulsion Laboratory

Tuesday: Final Technical Program (Update 1/12/23): 33rd AAS/AIAA Space Flight Mechanics Meeting, Austin, Texas

Date	Session Name	Room	Time	Presentation Title	Firstname	Lastname	Company / Institution
1/17	Cislunar Space Missions and Operations 1	Onyx 2-3	8:00 AM	Touring Cislunar Periodic Orbit Test Case for Earth-Moon Search and Rescue	Adam	Wilmer	AFIT/Department of Aeronautics and Astronautics
1/17	Cislunar Space Missions and Operations 1	Onyx 2-3	8:20 AM	Optimal Low Thrust Trajectory from NRHO to LLO using High-Fidelity Dynamics	Joshua	Fofrich	University of Illinois Urbana-Champaign
1/17	Cislunar Space Missions and Operations 1	Onyx 2-3	8:40 AM	Preliminary Study of Utilizing Electric Propulsion for Rendezvous Operations with Example Cislunar Periodic Orbits	Adam	Wilmer	AFIT/Department of Aeronautics and Astronautics
1/17	Cislunar Space Missions and Operations 1	Onyx 2-3	9:00 AM	Sensitivity to Navigation and Operational Errors for Earth Escape Trajectories via Multiple Lunar Flybys	Ricardo	Lozano Ortega	ISAE SUPAERO
1/17	Cislunar Space Missions and Operations 1	Onyx 2-3	9:20 AM	A review on hot-spot areas within the Cislunar region and upon the Moon surface, and methods to gather passive information from these regions	Brian	Baker-McEvilly	Embry-Riddle Aeronautical University
1/17	Cislunar Space Missions and Operations 1	Onyx 2-3	9:40 AM	Thrust dispersion analysis for direct phasing strategies with Earth-Moon L2 Near Rectilinear Halo Orbits	Giordana	Bucchioni	University of Pisa Dip.Ingegneria Informazione - IT00286820501
1/17	Earth Orbital Missions and Studies	Topaz 1	8:00 AM	Application of Theory of Geographically Correlated Orbit Perturbations to Space Geodetic Analysis	Benjamin	Krichman	UT Austin Center for Space Research
1/17	Earth Orbital Missions and Studies	Topaz 1	8:20 AM	Conceptual Design for Returning KITSAT-1	Yehyun	Kim	KAIST Satellite Technology Research Center
1/17	Earth Orbital Missions and Studies	Topaz 1	8:40 AM	Enabling Space-Based Computed Cloud Tomography with a Mixed Integer Linear Programming Scheduler	David	Stanley	The University of Illinois
1/17	Earth Orbital Missions and Studies	Topaz 1	9:00 AM	An approach to optimal orbit design with a novel technique for the revisit and coverage estimation for a Very Low Earth Orbit Earth Observation Mission	Kavya	Karampuri	SatSure Analytics India Pvt. Ltd.
1/17	Space Situational Awareness, Conjunction Analysis, and Collision Avoidance 1	Topaz 2	8:00 AM	Long-term encounters collision avoidance maneuver optimization with a multiple-impulse convex formulation	Zeno	Pavanello	The University of Auckland
1/17	Space Situational Awareness, Conjunction Analysis, and Collision Avoidance 1	Topaz 2	8:20 AM	Spaceborne Optimal Evasive Maneuvers Under Angle-Only Relative Navigation	Yazan	Chihabi	Carleton University
1/17	Space Situational Awareness, Conjunction Analysis, and Collision Avoidance 1	Topaz 2	8:40 AM	Uncertainty Propagation Of Perturbed Orbits Using High Order State Transition Tensors and Chebyshev Picard Method	Jennifer	Good	San Diego State University
1/17	Space Situational Awareness, Conjunction Analysis, and Collision Avoidance 1	Topaz 2	9:00 AM	Investigation of Uncertainty Propagation Techniques for Spacecraft Conjunction Assessments	Amit	Bala	Virginia Polytechnic Institute and State University
1/17	Space Situational Awareness, Conjunction Analysis, and Collision Avoidance 1	Topaz 2	9:20 AM	How Space Weather affects Satellite Operations and Two Plans to improve the Process	Mark	Vincent	Raytheon

1/17	Space Situational Awareness, Conjunction Analysis, and Collision Avoidance 1	Topaz 2	9:40 AM	The Effects Of Raising And Decay In Orbital Capacity Models	Davide	Gusmini	Politecnico di Milano
1/17	Rendezvous, Relative Motion, Proximity Missions, and Formation Flying 2	Topaz 3	8:00 AM	Regions of Application for Linearized Relative Motion in the Restricted Three Body Problem	David	Zuehlke	Embry-Riddle Aeronautical University
1/17	Rendezvous, Relative Motion, Proximity Missions, and Formation Flying 2	Topaz 3	8:20 AM	Relative Motion For Non-Keplerian Dynamics Using Interpolated State Transition Tensors	David	Cunningham	Space Trajectory Computation Lab, University of Texas
1/17	Rendezvous, Relative Motion, Proximity Missions, and Formation Flying 2	Topaz 3	8:40 AM	Analysis of Relative Motion Trajectories in the Circular Restricted Three-Body Problem	Michael	Mercurio	Ten One Aerospace
1/17	Rendezvous, Relative Motion, Proximity Missions, and Formation Flying 2	Topaz 3	9:00 AM	Inverse-Optimal, Continuous-Thrust Orbit Transfers	Ahmed	Atallah	San Diego State University
1/17	Rendezvous, Relative Motion, Proximity Missions, and Formation Flying 2	Topaz 3	9:20 AM	Numerical Optimization Study of Spacecraft Rendezvous Using Nonlinear Relative Motion	Ireland	Brown	University of Florida Vehicle Dynamics and Optimization Lab
1/17	Rendezvous, Relative Motion, Proximity Missions, and Formation Flying 2	Topaz 3	9:40 AM	Reduced-Order Model for Spacecraft Swarm Orbit Design	Shane	Lowe	Stanford University
1/17	Cislunar Space Missions and Operations 1	Onyx 2-3	10:20 AM	Optimal Spacecraft Constellation Analysis Utilizing Periodic Orbits for Maintaining Space Domain Awareness Within Cislunar Space	Connor	Segal	Virginia Polytechnic Institute and State University
1/17	Cislunar Space Missions and Operations 1	Onyx 2-3	10:40 AM	Synodic Resonant Halo Orbits in the Hill Restricted Four-Body Problem	Rohith Reddy	Sanaga	Purdue University
1/17	Cislunar Space Missions and Operations 1	Onyx 2-3	11:00 AM	Periodic transfers that depart and return to an operating orbit using resonant orbit structures in the planar three-body problem	Noah	Sadaka	Purdue University
1/17	Cislunar Space Missions and Operations 1	Onyx 2-3	11:20 AM	Lunar Photon: Flight Dynamics Operations for the CAPSTONE Mission	Ryan	Lebois	Space Exploration Engineering
1/17	Cislunar Space Missions and Operations 1	Onyx 2-3	11:40 AM	Lunar Photon: SSC Doppler Processing with Variable Uplink Frequency	Ryan	Lebois	Space Exploration Engineering
1/17	Satellite Constellations	Topaz 1	10:20 AM	A Novel Formulation for the Multi-Stage Satellite Constellation Reconfiguration Problem: Initial Results	Hang Woon	Lee	West Virginia University
1/17	Satellite Constellations	Topaz 1	10:40 AM	Dynamical characterization of endogenous conjunctions within the Starlink constellation	Davide	Amato	Imperial College London
1/17	Satellite Constellations	Topaz 1	11:00 AM	SunRISE is Coming: Mission Design and Navigation for the First Space-based Radio Interferometer	Jeffrey	Stuart	Jet Propulsion Laboratory
1/17	Satellite Constellations	Topaz 1	11:20 AM	Hybrid Constellation Design of CubeSats for Monitoring Hurricanes	Pardha Sai	Chadalavada	Wichita State University
1/17	Space Situational Awareness, Conjunction Analysis, and Collision Avoidance 1	Topaz 2	10:20 AM	OPERATIONAL VALIDATION OF A SPACECRAFT PATTERN-OF-LIFE CHARACTERIZATION ALGORITHM	Karina	Rivera	University of Colorado Boulder
1/17	Space Situational Awareness, Conjunction Analysis, and Collision Avoidance 1	Topaz 2	10:40 AM	RESIDENT SPACE OBJECT IDENTIFICATION IN ARBITRARY UNRESOLVED SPACE IMAGES	Joseph	Anderson	Embry Riddle Aeronautical University

1/17	Space Situational Awareness, Conjunction Analysis, and Collision Avoidance 1	Topaz 2	11:00 AM	Low-thrust Collision Avoidance Design for Leo Missions With Return to Nominal Orbit	Andrea	De Vittori	Politecnico di Milano
1/17	Space Situational Awareness, Conjunction Analysis, and Collision Avoidance 1	Topaz 2	11:20 AM	SPACE OCCUPANCY CONJUNCTION FILTER	Rafael	Vazquez	Universidad de Sevilla
1/17	Space Situational Awareness, Conjunction Analysis, and Collision Avoidance 1	Topaz 2	11:40 AM	Extending the Utility of Multi-Fidelity Space Object Uncertainty Quantification with Vinti Theory	Trevor	Wolf	The University of Texas at Austin
1/17	Space Situational Awareness, Conjunction Analysis, and Collision Avoidance 1	Topaz 2	12:00 PM	Short-Term Collision Probability Caused by Debris Clouds	Roberto	Armellin	The University of Auckland
1/17	Rendezvous, Relative Motion, Proximity Missions, and Formation Flying 2	Topaz 3	10:20 AM	Rapid Synthetic Image Generation Using Neural Radiance Fields for Vision-based Formation Flying Spacecraft	Kai	Matsuka	California Institute of Technology
1/17	Rendezvous, Relative Motion, Proximity Missions, and Formation Flying 2	Topaz 3	10:40 AM	SQP Waypoint Generation for a Zero-Effort State Error Controller	Zachary	Rhodes	University of Kansas
1/17	Rendezvous, Relative Motion, Proximity Missions, and Formation Flying 2	Topaz 3	11:00 AM	Challenge Problem: Close Proximity Operations for Spacecraft In-Space Servicing, Manufacture, and Assembly	Christopher "Chrispy"	Petersen	University of Florida
1/17	Rendezvous, Relative Motion, Proximity Missions, and Formation Flying 2	Topaz 3	11:20 AM	Kinematic Batch Filter Formulation for Angular Velocity Estimation with Covariance Bounds	Siddarth	Kaki	The University of Texas at Austin
1/17	Rendezvous, Relative Motion, Proximity Missions, and Formation Flying 2	Topaz 3	11:40 AM	Inertia-Free Pose and Angular Velocity Estimation Using Monocular Vision	Siddarth	Kaki	The University of Texas at Austin
1/17	CubeSat and SmallSat Missions	Onyx 2-3	1:30 PM	Relative Phasing And Observations Overlap: Low-Thrust Trajectory Design Options for the INCUS Mission	Kenza	Boudad	NASA Jet Propulsion Laboratory
1/17	CubeSat and SmallSat Missions	Onyx 2-3	1:50 PM	Origami Application to Space Mirror Reflectors	David	Garcia	AFIT/Department of Aeronautics and Astronautics
1/17	CubeSat and SmallSat Missions	Onyx 2-3	2:10 PM	Multi-CubeSat Formation Design for a High-Precision Timing and Ranging Experiment in LEO	Raj	Patel	University of Colorado Boulder
1/17	CubeSat and SmallSat Missions	Onyx 2-3	2:30 PM	3UCubed: The IMAP Student Collaboration CubeSat Project	Sanjeev	Mehta	University of New Hampshire
1/17	CubeSat and SmallSat Missions	Onyx 2-3	2:50 PM	Slew Maneuver Simulation and Stabilization Settling Time Analysis for the VISORS Space Telescope Mission	Hyeongjun	Park	New Mexico State University
1/17	Attitude Dynamics, Determination and Control 1	Topaz 1	1:30 PM	Attitude-Orbit Integrated Control of Solar Sail with Single-Axis Gimbal Mechanism	Toshihiro	Chujo	Tokyo Institute of Technology
1/17	Attitude Dynamics, Determination and Control 1	Topaz 1	1:50 PM	Online Estimation of Unknown Parameters of Highly Flexible Spacecraft using Integral Concurrent Learning and Kane's Equation	Nicolo	Woodward	Embry-Riddle Aeronautical University
1/17	Attitude Dynamics, Determination and Control 1	Topaz 1	2:10 PM	Applications of Reflective Control Devices for Position and Attitude Control in the Sun-Earth Lagrange Points	Alejandro	Cabrales Hernandez	Massachusetts Institute of Technology
1/17	Attitude Dynamics, Determination and Control 1	Topaz 1	2:30 PM	Spacecraft Dynamics Analysis Using Point-Mass Model of Human Motion	Galen	Bascom	University of Colorado, Boulder

1/17	Attitude Dynamics, Determination and Control 1	Topaz 1	2:50 PM	Zero Placement for Discrete Time Systems	Jer-Nan	Juang	National Cheng Kung Univ
1/17	Trajectory/Mission/Maneuver Design and Optimization 3	Topaz 2	1:30 PM	Path Control Constraint Handling for Differential Dynamic Programming	Bryn	Fanger	University of Texas at Austin
1/17	Trajectory/Mission/Maneuver Design and Optimization 3	Topaz 2	1:50 PM	Constellation Design to Support Cislunar Surveillance Leveraging Sidereal Resonant Orbits	Maaninee	Gupta	Purdue University
1/17	Trajectory/Mission/Maneuver Design and Optimization 3	Topaz 2	2:10 PM	Optimal Control for Formation Reconfiguration Problems Using Pseudospectral Methods	Alessia	De Iuliis	Politecnico di Torino - DIMEAS
1/17	Trajectory/Mission/Maneuver Design and Optimization 3	Topaz 2	2:30 PM	Blue Ghost Lunar Lander Orbital Maneuver Statistical Analysis	Daniel	Guerrant	Rocket Lab USA
1/17	Trajectory/Mission/Maneuver Design and Optimization 3	Topaz 2	2:50 PM	Trajectory Reverse Engineering: A General Strategy for Transferring Trajectories Between Flight Mechanics Tools	Ricardo	Restrepo	NASA / Caltech JPL
1/17	Spacecraft Guidance, Navigation and Control 2	Topaz 3	1:30 PM	Asymptotically Stable Simple Adaptive Control For Free-Floating Space Manipulators	Parker	Stewart	Carleton University
1/17	Spacecraft Guidance, Navigation and Control 2	Topaz 3	1:50 PM	Backstepping-based Tracking Controller Using Orbit-Attitude Interactions of Spacecraft	Jinah	Lee	Yonsei university
1/17	Spacecraft Guidance, Navigation and Control 2	Topaz 3	2:10 PM	On Constrained Feedback Control of Spacecraft Orbital Transfer Maneuvers	Simone	Semeraro	Department of Aerospace Engineering, The University of Michigan
1/17	Spacecraft Guidance, Navigation and Control 2	Topaz 3	2:30 PM	Mass Property Estimation for Rigid Body Spacecraft on the Special Euclidean Group SE(3) and its Tangent Bundle TSE(3)	Brennan	McCann	Embry-Riddle Aeronautical University
1/17	Spacecraft Guidance, Navigation and Control 2	Topaz 3	2:50 PM	PlasmaPump: A novel hybrid rocket engine design using thermionic emission, quantum tunneling and plasma to boost efficiency	Archit	Kalra	Carmel High School
1/17	DART Navigation	Onyx 2-3	3:30 PM	Double Asteroid Redirection Test (DART) Final Mission Design and Flight Path Control	Justin	Atchison	JHU Applied Physics Laboratory
1/17	DART Navigation	Onyx 2-3	3:50 PM	Optical Navigation for the DART Mission	Declan	Mages	NASA / Caltech JPL
1/17	DART Navigation	Onyx 2-3	4:10 PM	Double Asteroid Redirection Test (DART) Mission: Processing, Analysis, and Modeling of the Reaction Control System Thruster Delta-V For Orbit Determination	Dianna	Velez	NASA / Caltech JPL
1/17	Attitude Dynamics, Determination and Control 1	Topaz 1	3:30 PM	Design of a reaction wheel system for CubeSat CHASQUI II Attitude Control	Gerardo Emilio	Cevallos Robles	National University of Engineering
1/17	Attitude Dynamics, Determination and Control 1	Topaz 1	3:50 PM	Dual Quaternion Relative Dynamics for Gravity Recovery Missions	Ryan	Kinzie	Embry-Riddle Aeronautical University
1/17	Attitude Dynamics, Determination and Control 1	Topaz 1	4:10 PM	Orbit and Attitude Coupling in the Full Higher-Fidelity Ephemeris Model within the context of the Geometric Mechanics Framework	Annika	Anderson	Embry-Riddle Aeronautical University
1/17	Trajectory/Mission/Maneuver Design and Optimization 3	Topaz 2	3:30 PM	Ballistic Lunar Transfer Design Using the Deep Space Trajectory Explorer	Brian	McCarthy	a.i. solutions, Inc
1/17	Trajectory/Mission/Maneuver Design and Optimization 3	Topaz 2	3:50 PM	Adaptive Roadmap Generation for Trajectory Design in the Earth-Moon System	Kristen	Bruchko	University of Colorado, Boulder

1/17	Trajectory/Mission/Maneuver Design and Optimization 3	Topaz 2	4:10 PM	Leveraging the Moon and Stable Libration Point Orbits Around L4/L5 to Observe the Solar Corona	Sebastian	Doroba	Embry-Riddle Aeronautical University
1/17	Trajectory/Mission/Maneuver Design and Optimization 3	Topaz 2	4:30 PM	Using NRHO Invariant Funnel to Target Enceladus South Pole	Jared	Blanchard	Stanford University
1/17	Spacecraft Guidance, Navigation and Control 2	Topaz 3	3:30 PM	Preliminary Design of the Dragonfly Navigation Filter	Ben	Schilling	Johns Hopkins Applied Physics Laboratory
1/17	Spacecraft Guidance, Navigation and Control 2	Topaz 3	3:50 PM	Angles-Only Tracking and Navigation for Approach and Rendezvous in Geosynchronous Orbits	Justin	Kruger	Space Rendezvous Laboratory, Stanford University
1/17	Spacecraft Guidance, Navigation and Control 2	Topaz 3	4:10 PM	Recursive Update Filtering: A New Approach	Kristen	Michaelson	University of Texas at Austin
1/17	Spacecraft Guidance, Navigation and Control 2	Topaz 3	4:30 PM	Pseudospectral Optimal Control of Spacecraft Rendezvous with Combined Differential Drag and Lorentz Forces	Ahmed	Atallah	

Wednesday: Final Technical Program (Update 1/12/23): 33rd AAS/AIAA Space Flight Mechanics Meeting, Austin, Texas

Date	Session Name	Room	Time	Presentation Title	Firstname	Lastname	Company / Institution
1/18	Atmospheric Re-entry Guidance and Control	Onyx 2-3	8:00 AM	Terminal Landing Guidance Law using Analytic Gravity Turn Trajectory	Seungyeop	Han	Georgia Institute of Technology
1/18	Atmospheric Re-entry Guidance and Control	Onyx 2-3	8:20 AM	Constrained Hypersonic Trajectory Optimization Using Gaussian Quadrature Collocation	Katrina	Winkler	University of Florida
1/18	Atmospheric Re-entry Guidance and Control	Onyx 2-3	8:40 AM	Optimal Range Capabilities for Low-Lift-to-Drag Ratio Entry Vehicles	Daniel	Engel	University of Illinois at Urbana-Champaign Department of Aerospace Engineering
1/18	Atmospheric Re-entry Guidance and Control	Onyx 2-3	9:00 AM	A Passive Guidance System for the Sample Return Mission from the International Space Station	Youngro	Lee	Iowa State University
1/18	Atmospheric Re-entry Guidance and Control	Onyx 2-3	9:20 AM	Control strategy for Aerocapture using concepts of Model Predictive Control	Shruthi	Nagabushana	University of California San Diego
1/18	Atmospheric Re-entry Guidance and Control	Onyx 2-3	9:40 AM	A Monte Carlo Analysis of Contingency Optimal Guidance for Mars Entry	Emily	Palmer	University of Florida
1/18	Orbital Dynamics, Perturbations, and Stability	Topaz 1	8:00 AM	Advanced ensemble modeling method for space object state prediction accounting for uncertainty in atmospheric density	Smriti Nandan	Paul	West Virginia University
1/18	Orbital Dynamics, Perturbations, and Stability	Topaz 1	8:20 AM	Large Eccentricity Growth at High Inclinations for Orbits at or near GEO Altitudes	Chia-Chun	Chao	Chao Astrodynamics Consulting
1/18	Orbital Dynamics, Perturbations, and Stability	Topaz 1	8:40 AM	Backbone of ballistic capture set	Gianmario	Merisio	Politecnico di Milano
1/18	Orbital Dynamics, Perturbations, and Stability	Topaz 1	9:00 AM	A second-order closed-form J2 short-period motion model for the Draper Semi-analytical Satellite Theory	Juan Félix	San-Juan	University of La Rioja
1/18	Orbital Dynamics, Perturbations, and Stability	Topaz 1	9:20 AM	Characterizing the coupling mode of dynamics and deformation of an irregularly shaped, self-gravitating body: Application to the martian satellite, Phobos	Masatoshi	Hirabayashi	Auburn University
1/18	Orbital Dynamics, Perturbations, and Stability	Topaz 1	9:40 AM	Extensive Search of Ballistic Capture Trajectories in the Circular Restricted Three Body Problem	Lorenzo	Anoè	University of Auckland - Auckland Space Institute
1/18	Trajectory/Mission/Maneuver Design and Optimization 4	Topaz 2	8:00 AM	Minimum-Time, Low-Thrust Earth-to-Moon Transfers Using Adaptive Gaussian Quadrature Collocation	George III	Haman	Vehicle Dynamics and Optimization Laboratory
1/18	Trajectory/Mission/Maneuver Design and Optimization 4	Topaz 2	8:20 AM	Impact of Different Coordinate Sets on the Performance of Convex Low-Thrust Trajectory Optimization	Andrea Carlo	Morelli	Politecnico di Milano
1/18	Trajectory/Mission/Maneuver Design and Optimization 4	Topaz 2	8:40 AM	Smooth Enforcement of Forced-Coasting Arcs for Various Low-Thrust Transfer Mission Requirements	Nicholas	Nurre	Auburn University
1/18	Trajectory/Mission/Maneuver Design and Optimization 4	Topaz 2	9:00 AM	Invariant Manifold Approximations in the Circular Restricted Three-Body Problem with Applications to Low-Thrust Trajectory Design	Patrick	Kelly	Texas A&M University
1/18	Trajectory/Mission/Maneuver Design and Optimization 4	Topaz 2	9:20 AM	Design of Initial Guess Low Thrust Trajectories Using Clohessy-Wiltshire Equations	Madhusudan	Vijayakumar	Iowa State University

1/18	Trajectory/Mission/Maneuver Design and Optimization 4	Topaz 2	9:40 AM	Low-Thrust Resonance Gravity Assist Trajectory Design to the Moon	Jinsung	Lee	Korea Advanced Institute of Science and Technology
1/18	Spacecraft Autonomy	Topaz 3	8:00 AM	A Comparison of Deep Reinforcement Learning Algorithms for Earth-Observing Satellite Scheduling	Adam	Herrmann	University of Colorado, Boulder
1/18	Spacecraft Autonomy	Topaz 3	8:20 AM	Design and Validation of Spacecraft Planning Flight Software	Timothy	Woodbury	Emergent Space Technologies
1/18	Spacecraft Autonomy	Topaz 3	8:40 AM	Development of a simulator for coverage planning of a 6G/ IoT constellation	Franco	Criscola	Embry-Riddle Aeronautical University
1/18	Spacecraft Autonomy	Topaz 3	9:00 AM	Towards 6G Non-Terrestrial Networks - An Autonomous Constellation Management Engine	Arnau	Singla	i2CAT Foundation
1/18	Spacecraft Autonomy	Topaz 3	9:20 AM	Autonomous Lidar-free Hazard Detection and Landing Site Selection for Small Bodies Descent	Edoardo	Caroselli	Airbus Defense and Space
1/18	Machine Learning and Artificial Intelligence Applied to Space Flight Problems 1	Onyx 2-3	10:20 AM	The Physics-Informed Neural Network Gravity Model Revisited -- Model Generation III	John	Martin	University of Colorado Boulder
1/18	Machine Learning and Artificial Intelligence Applied to Space Flight Problems 1	Onyx 2-3	10:40 AM	A Machine Learning Model for Solar Sail Shape Reconstruction Using Flight Data	Ryan	Wu	Columbia University
1/18	Machine Learning and Artificial Intelligence Applied to Space Flight Problems 1	Onyx 2-3	11:00 AM	Adaptive Optimal Output Regulation of Autonomous Satellite Docking: A Reinforcement Learning Approach	Omar	Qasem	Florida Institute of Technology
1/18	Machine Learning and Artificial Intelligence Applied to Space Flight Problems 1	Onyx 2-3	11:20 AM	Artificial Intelligent Tactile Feedback Control for Autonomous Robotic Capture of Non-Cooperative Space Target	George	Zhu	York University
1/18	Orbital Dynamics, Perturbations, and Stability	Topaz 1	10:20 AM	Preliminary Study Of The Earth Perturbation Over Low-Thrust Trajectories	Josué	Cardoso dos Santos	Institute of Space and Astronautical Science (ISAS) - Japan Aerospace Exploration Agency (JAXA)
1/18	Orbital Dynamics, Perturbations, and Stability	Topaz 1	10:40 AM	Accuracy of a lunar analytic orbit theory	Grigory	Nikitin	Texas A&M University
1/18	Orbital Dynamics, Perturbations, and Stability	Topaz 1	11:00 AM	A Global Method to Compute Asteroid Equilibrium Points for Any Spin Rate	Gavin	Brown	University of Colorado Boulder
1/18	Orbital Dynamics, Perturbations, and Stability	Topaz 1	11:20 AM	REGULARIZED CANONICAL COORDINATES FOR CENTRAL FORCE MOTION	Joseph	Peterson	student
1/18	Trajectory/Mission/Maneuver Design and Optimization 4	Topaz 2	10:20 AM	Overburn and Underburn Analysis for NASA's Solar Cruiser Mission	Jared	Sikes	The University of Alabama
1/18	Trajectory/Mission/Maneuver Design and Optimization 4	Topaz 2	10:40 AM	Artificial Neural Network based Atmospheric Density Model for Aerobraking Trajectory Design	Amrutha	Dasyam	Wichita State University
1/18	Trajectory/Mission/Maneuver Design and Optimization 4	Topaz 2	11:00 AM	Assessment of Aerogravity Assist at Venus Using Blunt-Body Vehicles	Daniel	Engel	University of Illinois at Urbana-Champaign Department of Aerospace Engineering

1/18	Trajectory/Mission/Maneuver Design and Optimization 4	Topaz 2	11:20 AM	Mission Design for Near-Future Solar Polar Imaging Mission Leveraging Venus Flyby	James	Pezent	The University of Alabama
1/18	Trajectory/Mission/Maneuver Design and Optimization 4	Topaz 2	11:40 AM	Overview of the NASA Spacecraft Trade Modeling System (NSTRDMS), A Rapid Mission Analysis Tool	Scott	Karn	HX5, LLC
1/18	Spacecraft Autonomy	Topaz 3	10:20 AM	Development of 6DOF hardware-in-the-loop ground testbed with active gravity compensation by dual robotic manipulators	George	Zhu	York University
1/18	Spacecraft Autonomy	Topaz 3	10:40 AM	Global Task-Aware Fault Detection and Identification For On Orbit Multi-Spacecraft Collaborative Inspection	Amir	Rahmani	Jet Propulsion Laboratory, California Institute of Technology
1/18	Spacecraft Autonomy	Topaz 3	11:00 AM	SPESI: a real-time Space Environment Simulator for the EXTREMA project	Carmine	Giordano	Politecnico di Milano
1/18	Spacecraft Autonomy	Topaz 3	11:20 AM	Orbit Management During Solar Cycle 25 for Optimal Science on GRACE-FO Mission	Himanshu	Save	Center of Space Research, The University of Texas at Austin
1/18	Spacecraft Autonomy	Topaz 3	11:40 AM	A Method to Autonomously Detect a Client Point Source During Angles-Only Navigation	Mark	Muktoyuk	Astroscale US
1/18	Orbit Determination and Space Surveillance Tracking 2	Onyx 2-3	1:30 PM	MIXTURE-BASED COST METRICS FOR MANEUVER DETECTION USING RADAR TRACK DATA	Rafael	Vazquez	Universidad de Sevilla
1/18	Orbit Determination and Space Surveillance Tracking 2	Onyx 2-3	1:50 PM	Nonlinear Kalman Filter Based On Central Differences Applied To Orbit Determination Problem	Helio Koiti	Kuga	INPE
1/18	Orbit Determination and Space Surveillance Tracking 2	Onyx 2-3	2:10 PM	Orbit Determination via Eclipse Transient Timing: Improved Methods and Intensity Models	Riley	Fitzgerald	Virginia Tech
1/18	Orbit Determination and Space Surveillance Tracking 2	Onyx 2-3	2:30 PM	A novel fast-paced orbit determination method for the Cnes catalogue	Emmanuel	Delande	Centre National d'Études Spatiales
1/18	Orbit Determination and Space Surveillance Tracking 2	Onyx 2-3	2:50 PM	THE INITIAL ORBIT DETERMINATION (IOD) PROBLEM WITH RANGE, RANGE-RATE AND ANGLES	Christopher	DSouza	NASA/JSC
1/18	Machine Learning and Artificial Intelligence Applied to Space Flight Problems 2	Topaz 1	1:30 PM	Enabling Machine Learning Inference at the Edge	Brett	Carver	Emergent Space Technologies
1/18	Machine Learning and Artificial Intelligence Applied to Space Flight Problems 2	Topaz 1	1:50 PM	Reinforced Lyapunov Controllers and Convex Optimisation for Low-thrust Lunar Transfers	Nicolò	Bernardini	University of Surrey
1/18	Machine Learning and Artificial Intelligence Applied to Space Flight Problems 2	Topaz 1	2:10 PM	Transformer-based anomaly detection on dynamic graphs: application to satellite constellations	Manuel	Indaco	Auburn University
1/18	Machine Learning and Artificial Intelligence Applied to Space Flight Problems 2	Topaz 1	2:30 PM	Deep Monocular Hazard Detection for Safe Small Body Landing	Kento	Tomita	Georgia Institute of Technology
1/18	Machine Learning and Artificial Intelligence Applied to Space Flight Problems 2	Topaz 1	2:50 PM	Space Inspection For CubeSats And Other Space Targets Using Object Detection In Images	Anh	Nguyen	University of Cincinnati
1/18	Trajectory/Mission/Maneuver Design and Optimization 5	Topaz 2	1:30 PM	A hybrid multiple-shooting approach for covariance control of interplanetary missions with navigation errors	Nicola	Marmo	Sapienza University of Rome

1/18	Trajectory/Mission/Maneuver Design and Optimization 5	Topaz 2	1:50 PM	Preliminary Sequencing Method for Multiple Gravity Assists with Low-Thrust Synergetic Maneuvers	Ghanghooon	Paik	Pennsylvania State University
1/18	Trajectory/Mission/Maneuver Design and Optimization 5	Topaz 2	2:10 PM	Optimal Trajectory Generation for Rigid Body Landing Dynamics on the Special Euclidean Group	Brennan	McCann	Embry-Riddle Aeronautical University
1/18	Trajectory/Mission/Maneuver Design and Optimization 5	Topaz 2	2:30 PM	Application of Local Lyapunov Exponents for NASA's Artemis-1 Trajectory Design and Maneuver Planning	Brennan	Blumenthal	The University of Alabama
1/18	Trajectory/Mission/Maneuver Design and Optimization 5	Topaz 2	2:50 PM	Application of Local Lyapunov Exponents for Autonomous Trajectory Targeting and Generation	Brennan	Blumenthal	The University of Alabama
1/18	Spacecraft Guidance, Navigation and Control 3	Topaz 3	1:30 PM	Decentralized predictive guidance and control for formation flying of NASA astrobee robots	John	Martinez	New Mexico State University
1/18	Spacecraft Guidance, Navigation and Control 3	Topaz 3	1:50 PM	Powered Descent Guidance and Control for the Blue Ghost Lunar Lander	Adam	Licavoli	Rocket Lab USA
1/18	Spacecraft Guidance, Navigation and Control 3	Topaz 3	2:10 PM	Nonlinear Filtering with Intrusive Polynomial Chaos for Satellite Uncertainty Quantification	Z	McLaughlin	The University of Texas at Austin
1/18	Spacecraft Guidance, Navigation and Control 3	Topaz 3	2:30 PM	Computationally-Efficient Sequential Visual-Inertial SLAM for Asteroid-Relative Navigation	Matthew	Givens	University of Colorado Boulder
1/18	Spacecraft Guidance, Navigation and Control 3	Topaz 3	2:50 PM	Revisiting Analytical Solution for the Gravity-Turn Guidance Law	Bharat	Mahajan	Odyssey Space Research/Texas A&M University
1/18	Orbit Determination and Space Surveillance Tracking 2	Onyx 2-3	3:30 PM	Approximate Minimum Divergence Filtering for Gaussian Initial Orbit Determination	Kyle	Craft	Texas A&M University
1/18	Orbit Determination and Space Surveillance Tracking 2	Onyx 2-3	3:50 PM	An Extended Exploration of Angles-Only Initial Orbit Determination in Space-to-Space Earth-Orbiting Scenarios	Kenneth	Horneman	Emergent Space Technologies, Inc.
1/18	Orbit Determination and Space Surveillance Tracking 2	Onyx 2-3	4:30 PM	Multi-Fidelity Hamiltonian Monte Carlo for Space Object Tracking with Sparse Data	Enrico	Zucchelli	The University of Texas at Austin
1/18	Machine Learning and Artificial Intelligence Applied to Space Flight Problems 2	Topaz 1	3:30 PM	Laboratory Experimentation of Spacecraft Robotic Capture Using Deep Reinforcement Learning-based Guidance	Steve	Ulrich	Carleton University
1/18	Machine Learning and Artificial Intelligence Applied to Space Flight Problems 2	Topaz 1	3:50 PM	Stochastic Hazard Detection For Landing Under Topographic Uncertainty	Kento	Tomita	Georgia Institute of Technology
1/18	Machine Learning and Artificial Intelligence Applied to Space Flight Problems 2	Topaz 1	4:10 PM	Autonomous Rendezvous with Non-Cooperative Target Objects with Swarm Chasers and Observers	Trupti	Mahendrakar	Florida Institute of Technology
1/18	Trajectory/Mission/Maneuver Design and Optimization 5	Topaz 2	3:30 PM	Statistical Analysis of Optimal Stationkeeping Location and Coast Duration using Stretching Directions	Karina	Rivera	University of Colorado Boulder
1/18	Trajectory/Mission/Maneuver Design and Optimization 5	Topaz 2	3:50 PM	Multiple Space Debris Removal: Optimal Trajectory Design Using Random Key Encoding Scheme	Jin Haeng	Choi	Yonsei University
1/18	Trajectory/Mission/Maneuver Design and Optimization 5	Topaz 2	4:10 PM	Perturbed Lambert Problem using the Theory of Functional Connections	Franco	Criscola	Embry-Riddle Aeronautical University
1/18	Trajectory/Mission/Maneuver Design and Optimization 5	Topaz 2	4:30 PM	Trajectory optimization using the Theory of Functional Connections	Daniele	Mortari	Texas A&M University

Thursday: Final Technical Program (Update 1/12/23): 33rd AAS/AIAA Space Flight Mechanics Meeting, Austin, Texas

Date	Session Name	Room	Time	Presentation Title	Firstname	Lastname	Company / Institution
1/19	Space Situational Awareness, Conjunction Analysis, and Collision Avoidance 2	Garnet Sc	8:00 AM	Stochastic analysis of thrust uncertainties in the CR3BP	Sharad	Sharan	Pennsylvania State University
1/19	Space Situational Awareness, Conjunction Analysis, and Collision Avoidance 2	Garnet Sc	8:20 AM	Feasibility study of a magnetic system for proximity awareness in formation flying applications	Lorenzo	Voltini	PoliSpace - Politecnico di Milano
1/19	Space Situational Awareness, Conjunction Analysis, and Collision Avoidance 2	Garnet Sc	8:40 AM	Covariance Based Track Association with Modified Equinoctial Elements	Woosang	Park	Texas A&M University
1/19	Space Situational Awareness, Conjunction Analysis, and Collision Avoidance 2	Garnet Sc	9:00 AM	Application of LSTMs to the light curve inversion problem	Cesar	Enriquez	Universidad Politécnica de Madrid
1/19	Attitude Dynamics, Determination and Control 2	Topaz 1	8:00 AM	Constrained Attitude Control for Small Satellites with a Settling-Time Requirement	John	Martinez	New Mexico State University
1/19	Attitude Dynamics, Determination and Control 2	Topaz 1	8:20 AM	Algebraic and Simultaneous Estimation of Attitude Motion and Inertia Properties for Innovative Space Debris Removal	Junichiro	Kawaguchi	School of Engineering, College of Engineering and Computer Cybernetics, Australian National University
1/19	Attitude Dynamics, Determination and Control 2	Topaz 1	8:40 AM	A Multi-Fidelity Assessment of Unsteady Coaxial Rotor Performance on Titan: Dragonfly Entry, Flight and Maneuvering	Wayne	Farrell	University of Central Florida/ Mechanical and Aerospace Engineering Dept
1/19	Attitude Dynamics, Determination and Control 2	Topaz 1	9:00 AM	Guidance Templates for Spacecraft Attitude Motion Planning	Andrew	Miller	The University of Texas at Austin
1/19	Attitude Dynamics, Determination and Control 2	Topaz 1	9:20 AM	Center Of Gravity Estimation For Powered Flight Attitude Control	Christopher	Busic	University of Texas at Austin
1/19	Cislunar Space Missions and Operations 2	Topaz 2	8:00 AM	Normal Form Methods to Characterize Trajectories in the Circular Restricted Three-Body Problem	David	Schwab	The Pennsylvania State University
1/19	Cislunar Space Missions and Operations 2	Topaz 2	8:20 AM	Independent Verification and Validation of Flight Dynamics Operations for the Korea Pathfinder Lunar Orbiter	Stephen	West	Space Exploration Engineering
1/19	Cislunar Space Missions and Operations 2	Topaz 2	8:40 AM	Utilization and Validation of DSS-17 on the CAPSTONE Lunar Mission	Michael	Thompson	Advanced Space
1/19	Cislunar Space Missions and Operations 2	Topaz 2	9:00 AM	Perturbations and Recovery in the Gateway Near Rectilinear Halo Orbit	Diane	Davis	NASA Johnson Space Center
1/19	Cislunar Space Missions and Operations 2	Topaz 2	9:20 AM	Overview of Blue Ghost Lunar Lander Mission One	Scott	Yantek	Firefly Aerospace
1/19	Cislunar Space Missions and Operations 2	Topaz 2	9:40 AM	Bayesian Angles-only Cislunar Space Object Tracking	Keith	LeGrand	Purdue University
1/19	Rendezvous, Relative Motion, Proximity Missions, and Formation Flying 3	Topaz 3	8:00 AM	Distributed Least Absolute Deviations Estimation	Kaushik	Prabhu	Texas A&M University

1/19	Rendezvous, Relative Motion, Proximity Missions, and Formation Flying 3	Topaz 3	8:20 AM	Numerical and experimental validation of LIDAR-based Template Matching algorithms for non-cooperative spacecraft pose initialization	Alessia	Nocerino	University of Naples
1/19	Rendezvous, Relative Motion, Proximity Missions, and Formation Flying 3	Topaz 3	8:40 AM	Estimation and autonomous control for multi agent inspection and rendezvous	Austin	Probe	Emergent Space Technologies
1/19	Rendezvous, Relative Motion, Proximity Missions, and Formation Flying 3	Topaz 3	9:00 AM	Onboard Phase Center Calibration of GNSS Antenna Using Relative Position Sensor in Formation Flying	Shingo	Nishimoto	The University of Tokyo
1/19	Rendezvous, Relative Motion, Proximity Missions, and Formation Flying 3	Topaz 3	9:20 AM	Robust Model Predictive Control for Space Cargo Carrying with Uncertain Loads	Hyeongjun	Park	New Mexico State University
1/19	Space Situational Awareness, Conjunction Analysis, and Collision Avoidance 2	Garnet Sc	10:40 AM	Leveraging Hamiltonian Structure for Accurate Uncertainty Propagation	Amit	Jain	Penn State University
1/19	Space Situational Awareness, Conjunction Analysis, and Collision Avoidance 2	Garnet Sc	11:00 AM	Hybrid Nonlinear Semi-Analytical Uncertainty Propagation for Long-Term Encounter Analysis	Yashica	Khatri	University of Colorado Boulder
1/19	Space Situational Awareness, Conjunction Analysis, and Collision Avoidance 2	Garnet Sc	11:20 AM	3D Reconstruction of Non-Cooperative Resident Space Object using Instant NeRF and D-NeRF	Basilio	Caruso	Florida Institute of Technology
1/19	Attitude Dynamics, Determination and Control 2	Topaz 1	10:20 AM	EXTRA VEHICULAR OPERATIONS AND PAYLOAD TRANSPORTATION IN MICROGRAVITY WITH A COOPERATIVE FREE-FLYER ROBOT	HARUN	KHAN	University of Texas at Arlington
1/19	Attitude Dynamics, Determination and Control 2	Topaz 1	10:40 AM	3-axis attitude control method of spacecraft using reflectivity control device	Hiroyuki	Kobayashi	Tokyo Institute of Technology
1/19	Attitude Dynamics, Determination and Control 2	Topaz 1	11:00 AM	Star Streak Detection for Attitude Estimation in Dynamic Conditions	Laila	Kazemi	Ryerson University
1/19	Cislunar Space Missions and Operations 2	Topaz 2	10:20 AM	LOW THRUST TRAJECTORY OPTIMIZATION FOR TRANSPORTING GATEWAY'S POWER AND PROPULSION ELEMENT TO A NEAR-RECTILINEAR HALO ORBIT	Alex	Pascarella	University of Illinois at Urbana-Champaign
1/19	Cislunar Space Missions and Operations 2	Topaz 2	10:40 AM	Analysis and Optimization of Robust Trajectories in Cislunar Environment with Application to the LUMIO CubeSat	Carmine	Giordano	Politecnico di Milano
1/19	Cislunar Space Missions and Operations 2	Topaz 2	11:00 AM	Optimized Trajectory Correction Burns Placement for NRHO Orbit Maintenance	David	Woffinden	NASA Johnson Space Center
1/19	Rendezvous, Relative Motion, Proximity Missions, and Formation Flying 3	Topaz 3	10:20 AM	Relative dynamics analysis and trajectory optimization techniques for asteroid rendezvous missions	Sara	Galzignato	ISAE-SUPAERO, Université de Toulouse, France
1/19	Rendezvous, Relative Motion, Proximity Missions, and Formation Flying 3	Topaz 3	10:40 AM	Vision-Based 3D Reconstruction for Navigation and Characterization of Unknown, Space-Borne Targets	Kaitlin	Dennison	Stanford University Space Rendezvous Laboratory
1/19	Rendezvous, Relative Motion, Proximity Missions, and Formation Flying 3	Topaz 3	11:00 AM	High-Fidelity, Closed-Loop Simulation of Spacecraft Vision-Based Relative Navigation in ROS2	Kai	Matsuka	California Institute of Technology
1/19	Rendezvous, Relative Motion, Proximity Missions, and Formation Flying 3	Topaz 3	11:20 AM	Precision Landing Comparison between Smartphone Video Guidance Sensor and IRLock by Hardware-in-the-Loop emulation	Joao Leonardo	Silva Cotta	Florida Institute of Technology