

2024 Joint Physics of Sensing and Astrodynamics Program Review

Dr. Michael Yakes and Andrew Sinclair | November 4-8, 2024 | Arlington, VA -hybrid

Basic Research Innovation Collaboration Center (BRICC)
4100 N Fairfax Drive, Suite 450 | Arlington, VA 22203

Agenda Day 1 | Monday, November 4, 2024

Time	Topic	Speaker
11:30	In-person check-in/Virtual login	
12:00	Data-Driven Spacecraft Trajectory and Behavior Prediction in Cislunar Space	Natasha Bosanac, University of Colorado at Boulder
12:30	TBD	Lauren Zarzar, UC Berkeley
13:00	TBD	Lauren Schatz & Jeff Richey, AFRL
13:30	TBD	Saikat Guha, University of Maryland
14:00	BREAK	
14:30	Breaking the "Launch Once Use Once" Paradigm (SURI)	Howard Choset, Carnegie Mellon University
15:00	TBD	Bahram Javidi, University of Connecticut
15:30	TBD	Luat Vuong,
16:00		
16:30	End of Day	

Agenda Day 2 Tuesday, November 5, 2024		
Time	Topic	Speaker
8:00	In-person check-in/Virtual login	
8:30	TBD	Abdalla Darwish,
9:00	TBD	Todd Small, Rutgers University
9:30		András Majdik, Hungarian Computation Science and Automatization Institute
10:00	BREAK	
10:30	Autonomous Space Situational Awareness in Complex Environments (LRIR)	Alex Soderlund, AFRL Space Vehicles Directorate
11:00	TBD	Jeewan Kim, MIT
11:30	TBD	Yasaman Ghasempour, Princeton University
12:00	LUNCH	
13:30	TBD	outside speaker, TBD
14:00	Characterizing Highways & Automated Navigation in Cislunar Environment (CFIRE)	Kathleen Howell, Purdue University
14:30	TBD	Nick Vamivakas, Rochester Institute of Technology
15:00	BREAK	
15:30	Understanding and addressing the dynamic coupling between robotic arms and base spacecraft to enable challenging in-space operations	Donghoon Kim & Ou Ma, University of Cincinnati
16:00	TBD	
16:30	End of Presentations	
16:30	Networking/Social at Bronson Bier Hall	

Agenda Day 3 Wednesday, November 6, 2024		
Time	Topic	Speaker
8:00	In-person check-in/Virtual login	
8:30	TBD	Stuart Jeffries, Georgia State University
9:00	Representations, Theory, and Algorithms for Autonomous Space Domain Awareness in the Cislunar Regime (CFIRE)	Kyle DeMars, Texas A&M University
9:30	TBD	Brandon Fetterolf, TBD
10:00	BREAK	
10:30	The Science of Non-Resolved Space Object Signatures for Space Domain Awareness (SURI)	Miguel Velez-Reyes, University of Texas at El Paso
11:00	TBD	John Crassidis, University at Buffalo
11:30	TBD	Ryan Hoffman, AFRL Space Vehicles Directorate
12:00	LUNCH	
13:00	Poster Session	
15:00	TBD	outside speaker, TBD
15:30	TBD	Justin Crepp, University of Notre Dame
16:00	TBD	Mala Mateen, AFRL
16:30	End of Presentations	

	POSTER SESSION	
1	Multiscale Astrodynamical Analysis for Improved xGEO Cislunar SDA	Aaron Rosengren, University of California, San Diego & Shane Ross, Virginia Tech
2	Uncertainty Propagation for Maneuvering Objects in Chaotic Systems	Brandon Jones & Ryan Russell, University of Texas at Austin
3	Data-Driven Discovery of Cislunar Transport Mechanisms (D3CTM)	Roshan Eapen, Pennsylvania State University
4	Dynamics near the L3 point of the Earth-Moon system: Invariant manifolds and connections with other libration points (EOARD)	Angel Jorba, Universitat de Barcelona
5	Symplectic methods in space mission design (EOARD)	Augustin Moreno, Universitat Heidelberg
6	Near-linear uncertainty quantification and tracking in the cislunar regime (EOARD)	Davide Amato, Imperial College
7	Multi-Phenomenological, Autonomous, and Understandable SDA and XDA Decision Support (SURI)	Marcus Holzinger, University of Colorado at Boulder
8	TBD	Andreas Muschinsk,
9	TBD	Francis Chun, U.S. Air Force Academy
10	TBD	Alexei Novikov, Pennsylvania State University
11	TBD	Selim Shahriar, Northwestern University
12	TBD	Miranda Van Iersel, New Mexico State University
13	TBD	Kevin Webb, Purdue University
14	TBD	Hanspeter Schaub, University of Colorado at Boulder
15	TBD	Steve Eikenberry, University of Central Florida
16	TBD	Zubin Jacob, Purdue University
17	TBD	Matthew O'Toole, Carnegie Mellon University
18	Data-Driven Identification of Spacecraft Transport Pathways in Cislunar Space (YIP)	Natasha Bosanac, University of Colorado at Boulder
19	Resilient Positioning, Navigation and Timing using Angles-Only Measurements to Cataloged Resident Space Objects	Simone D'Amico, Stanford University
20	Space Situational Awareness in Cislunar Space	Daniel Scheeres, University of Colorado at Boulder & Terry Alfrend, Texas A&M University
21	Space Domain Awareness in a Photon-Starved Environment (SURI)	Stuart Jeffries, Georgia State University

22	Space Object Understanding and Reconnaissance of Complex Events (SURI)	John Crassidis, University at Buffalo
23	Picard-Chebyshev Methods for Long Duration Propagation in Chaotic Dynamical Systems (YIP)	Robyn Woollands, University of Illinois at Urbana Champaign
24	TBD	Roberto Furfaro, University of Arizona
25	Measuring and Controlling the Electronic Transport Properties of BaZrS ₃ Chalcogenide Perovskite Thin Films	Jack Van Sambeek, MIT

Agenda Day 4 Thursday, November 7, 2024		
Time	Topic	Speaker
8:00	In-person check-in/Virtual login	
8:30	TBD	Daniel Scheeres, University of Colorado at Boulder & Terry Alfrend, Texas A&M University
9:00	TBD	Swati Singh, University of Delaware & Sunil Bhawe, Purdue University
9:30	TBD	Laura Waller, University of California, Berkeley
10:00	BREAK	
10:30	TBD	Geoffroy Hautier & Jifeng Liu, Dartmouth University
11:00	TBD	Anthony Giljum & Zachry Theis, AFRL
11:30	TBD	Moriba Jah, University of Texas at Austin
12:00	LUNCH	
13:30	TBD	Mrinal Kumar, Ohio State University
14:00	TBD	Kyusang Lee, University of Virginia
14:30	TBD	Rafael Jaramillo, MIT
15:00	BREAK	
15:30	Starlift (SURI)	Dmitry Savransky, Cornell University

16:00	Advancing Technologies for Logistics Architectures in Space (SURI)	Koki Ho, Georgia Tech
16:30	End of Presentations	
16:30	Networking/Social at Bronson Bier Hall	

Agenda Day 5 Friday, November 8, 2024		
Time	Topic	Speaker
8:00	In-person check-in/Virtual login	
8:30	TBD	Simone D'Amico, Stanford University
9:00	TBD	Shengxi Huang, Rice University
9:30	TBD	Jeremy Bos,
10:00	BREAK	
10:30	Dynamic Vision Sensor for Observing Human-made Space Objects - Detection, Tracking, Characterization	Carolyn Frueh, Purdue University & Thomas Schildneckt (EOARD)
11:00	TBD	Peter McMahon-Crabtree, AFRL Space Vehicles Directorate
11:30	TBD	Linran Fan,
12:00	Wrap-Up	
13:30	End of Meeting	