

1st IAA CONFERENCE ON SPACE SITUATIONAL AWARENESS

2017
NOVEMBER 13TH - 15TH
ORLANDO, FL, USA



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ICSSA 2017 Program Schedule

MONDAY				
	TIME	TITLE	AUTHORS	ORGANIZATION
Morning Track	10:00-10:20	Turbulence And Aerodynamic Effect on Spacecraft Re-Entry	Lin Zhong	Hong Kong Polytechnic University
CONTROL & OPTIMIZATION	10:20-10:40	Differential Drag for Collision Avoidance	Brian Cooper & Jan King	Astro Digital US, Inc.
	10:40-11:00	A Hybrid Adaptive Control Algorithm for Spacecraft Guidance Tracking Using Aerodynamic Drag	Sanny Omar & Riccardo Bevilacqua	University of Florida
	11:00-11:20	LOBO: A SmallStat Mission for ADR of GEO Debris Fragment with Large Area-to-Mass Ratios	M Carmona, J. Bosch, A. Casas, D. Roma, J. Sabater, Norman Fitz-Coy, Stephen Eikenberry, Janise McNair, & J. Gomez	University of Barcelona & University of Florida
	11:20-11:40	Optimization Of Space Debris Collision Avoidance Maneuver	Priyatharsan E Rajasekar, Arun K Misra, Frédéric Pelletier, & Narendra Gollu	McGill University & KinetX Aerospace International
	11:40-12:00	Simulation of Tether-Nets for Capture of Space Debris and Small Asteroids	Eleonora Botta, Arun K. Msira, & Inna Sharf	McGill University
	12:00-12:20	Removal of Orbital Debris From Geostationary Orbits Using Solar Radiation Pressure and Lyapunov Control	Patrick Kelly & Riccardo Bevilacqua	University of Florida
Afternoon Track				
SENSING & SYSTEMS I	13:30-13:50	Attitude States Of Space Debris Determined From Optical Light Curve Observations	Thomas Schildknecht, Jiří Šilha, Jean-Noël Pittet, & Abdul Rachman	University of Bern, Silderstr & Comenius University
	13:50-14:10	STARS Elevator Technology Demonstration and Mission Process for Debris Mitigation	Masahiro Nohmi, Yoshiki Yamaiwa, & Yoshio Aoki	Shizuoka University & Nihon University

	14:10-14:30	A Laboratory Demonstration of Detumbling Space Debris	Joseph S. Figura & Nikko James	Massachusetts Institute of Technology
	14:30-14:50	Close-Up Survey Of Leo Debris	Jerome Pearson, Eugene Levin, Joseph Carroll	STAR, Inc., Tether Applications, Inc., & Electrodynamic Technologies
	14:50-15:10	Data Stream-Centric SST System Architecture Enhancement	Sven Müller & Enrico Stoll	Technische University Braunschweig
	15:10-15:30	A Tentative Constellation for LEO RSO Catalogue Maintenance	Jinali Du, Jizhang Sang, & Xiangxu Lu	Wuhan University
	15:30-15:50	Proximity Operations About and Identification of Noncooperative Resident Space Objects Using Stereo Imaging	Jill Davis & Henry Pernicka	Missouri University of Science & Technology
TUESDAY				
Morning Track 1	09:30-09:50	Multi-Fidelity Orbit Uncertainty Propagation	Brandon A. Jones & Ryan Weisman	University of Texas at Austin & Air Force Research Laboratory
FORECASTING	09:50-10:10	Revisit Analytical Expression for Estimating the Time when the Uncertainty Becomes Non-Gaussian	Inkwan Park & Kyle T. Alfriend	LeoLabs, Inc. & Texas A&M University
	10:10-10:30	An Adaptive Monte Carlo Method for Uncertainty Forecasting in Perturbed Two-Body Dynamics	Chao Yang, Mrinal Kumar, & David Gedeon	Ohio State University
	10:30-10:50	Uncertainty Treatment In the GOCE Re-Entry	Edmondo Minisci, Romain Serra, Massimiliano Vasile, Annalisa Riccardi, Stuart Grey, & Stijn Lemmens	University of Strathclyde
	10:50-11:10	National Space Situational Awareness Initiative: Re-Entry Prediction Using Owl-Net Observation Data	Eun-Jung Choi, Jin Choi, Sungki Cho, Hong-Suh Lim, Jang-Hyun Park, Jung Hyun Jo, & Deok-Jin Lee	Korea Space & Astronomy Institute, University of Science Technology, & Kunsan University

Morning Track 2	09:30-09:50	Laser Optical Tracking Technology for Space Debris Monitoring	Wolfgang Riede, Jens Rodmann, Leif Humbert, & Daniel Hampf	German Aerospace Center
SENSING & SYSTEMS II	09:50-10:10	Drag De-Orbit Device: A New Standard Re-Entry Actuator for CubeStats	David Guglielmo, Sanny Omar, & Riccardo Bevilacqua	University of Florida
	10:10-10:30	Can Telescopes Help LEO Satellites Avoid Most Lethal Debris?	Joseph Carroll & David Rowe	PlaneWave Instruments
	10:30-10:50	CASTOR: An In-Situ Instrument for Small Debris Detection	Manuel Carmona, José Bosch, Albert Casas, Atila Herms, David Roma, Fernando Aguado, Antonio Castro, & José Gomez	University of Barcelona, University of Vigo, Galician Aerospace Research Center, & European Space Agency
	10:50-11:10	Real-Time Hardware-in-the-Loop Hand-Off from a Finder Scope to a Larger Telescope	Daniel Aguilar Marsillach, Shahzad Virani, & Marcus J. Holzinger	Guggenheim School of Aerospace Engineering
	11:10-11:30	Recognition of Orbiting-Objects Through Optical Measurements of Light-Reflecting-Targets by Using Star-Sensors	Fabio Curti, Dario Spiller, Vincenzo Schiattarella, & Riccardo Orsi	Sapienza University of Rome & ARCA Dynamics
Afternoon Track 1				
TRACKING	13:00-13:20	Close Range Tracking of an Uncooperative Space Target in a Sequence of PMD Images	Ksenia Klionovska, Jacopo Ventura, Heike Benninghoff, & Felix Huber	DLR/GSOC
	13:20-13:40	Consensus-based Object Tracking within Heterogeneous Wireless Sensor Networks	Alexander A. Soderlund & Mrinal Kumar	Ohio State University

	13:40-14:00	Space Object Maneuver Detection in a Multi-Target Environment Using a Labeled Multi-Bernoulli Filter	Nicholas Ravago & Brandon A. Jones	University of Texas at Austin
	14:00-14:20	Optimization of Geosynchronous Space Situational Awareness Architectures using Parallel Computation	Michael S. Felten, Dr. John M. Colombi, Richard G. Cobb, & David W. Meyer	Air Force Institute of Technology
	14:20-14:40	Orbit Determination Performance of the LeoLabs Radar Network	Nathan Griffith, Michael Nicolls, Ed Lu, & In-Kwan Park	LeoLabs, Inc.
	14:40-15:00	Synthesis of Sensing Architecture for Kalman Filtering	Niladri Das & Raktim Bhattacharya	Texas A&M University
	15:00-15:20	Nonlinear Relative Motion State Estimation and Backstepping Control of Spacecraft Hovering Around an Asteroid	Hong Yao & Dan Simon	Cleveland State University
	15:20-15:40	Tensor Decomposition Based Data Association for Space Situational Awareness	Sriram Krishnaswamy & Mrinal Kumar	Ohio State University
Afternoon Track 2				
RISK ASSESSMENT	13:00-13:20	Criticality Assessment of the Italian Non-Maneuverable Satellites in Low Earth Orbit	Luciano Anselmo & Carmen Pardini	ISTI/CNR
	13:20-13:40	Orbital Probability of Collision Using Orthogonal Polynomial Approximations	Austin B. Probe, Christopher T. Shelton, Tarek A. Elgohary, & John L. Junkins	Texas A&M University & University of Central Florida
	13:40-14:00	Evaluating the Threat to Space Assets and Activities in Cislunar Space Due to Asteroid Disruptions	Thomas J. J. Kehoe & Ashley J. Espy Kehoe	Florida Space Institute & Embry-Riddle Aeronautical University
	14:00-14:20	Sample Evaluation Criteria For Space Traffic Management Systems	D.L. Oltrogge, T.M. Johnson, A.R. D'Uva	AGI's Center for Space Standards & Innovation
	14:20-14:40	Probability of Collision between Space Objects Including Model Uncertainty	Christopher T. Shelton & John L. Junkins	Texas A&M University

	14:40-15:00	Safety Analysis for Shallow Controlled Re-Entries through Reduced Order Modeling and Inputs' Statistics Method	Simone Flavio Rafano Carnà, Sanny Omar, David Guglielmo and Riccardo Bevilacqua	University of Florida
	15:00-15:20	Approaches to Making Best use of Two Line Elements Sets for Satellite Navigation and Collision Avoidance	David Finkleman	International Academy of Astronautics
	15:20-15:40	Space Traffic Management through the Control of the Space Environment's Capacity	Holger Krag & Stijn Lemmens	ESA Space Debris Office
WEDNESDAY				
Morning Track	09:30-09:50	Methods to Build-Up and Maintain an Space Objects Catalogue	D. Escobar, A. Anton, F. Ayuga, A. Pastpr, A. Diez, A. Agueda, & J. M. Lozano	GMV
IDENTIFICATION & ASSOCIATION	09:50-10:10	Towards Pose Determination for Non-Cooperative Spacecraft Rendezvous Using Convolutional Neural Networks	Sumant Sharma, Connor Beierle, & Simone D'Amico	Standford University
	10:10-10:30	Association of Very-Short-ARC Tracks with Geometrical and CBTA Methods	Xiangxu Lei, Jizhang Sang, Donglei He, Huaifeng Li	Wuhan University & China Academy of Space Technology
	10:30-10:50	Attitude Determination Using Light Curves From Multiple Observation Sites	Arun Bernard & David Geller	Utah State University
	10:50-11:10	Application of Directional Statistics to Problems in SSA	Shambo Bhattacharjee, John T Kent, Islam I. Hussein, Moriba K. Jah, & Weston R. Faber	University of Leeds, Applied Defense Solutions, & University of Texas at Austin
Afternoon Track				
SAA SYSTEMS	13:00-13:20	Differential Drag Demonstration: A Post-mission Experiment with the EO-1 Spacecraft	Scott Hull, Amanda Shelton, & David Richardson	NASA Goddard Space Flight Center

	13:20-13:40	Yuzhnoye State Design Office's Status on Mitigation Techniques and Activities	Yuliia Lysenko, Mykhailo Kaliapin, & Gennadiy Osinovvy	Yuzhnoye State Design Office
	13:40-14:00	Judicial Evidential Reasoning for Decision Support Applied to Orbit Insertion Failure	Andris D. Jaunzemis, Dev Minotra, Marcus J. Holzinger, Karen M. Feigh, Moses W. Chan, & Prakash P. Shenoy	Georgia Institute of Technology, Lockheed Martin, & University of Kansas
	14:00-14:20	Space Test of LEO Debris Removal	Jerome Pearson, Joseph Carroll, & Eugene Levin	STAR, Inc., Tether Applications, Inc., & Electrodynamic Technologies
	14:20-14:40	Italian Space Agency Sensors Evolution for Space Surveillance and Tracking Operations	Elena Vellutini, Luigi Muolo, Giuseppe D'Amore, Cosimo Marzo, & Claudio Portelli	Italian Space Agency
	14:40-15:00	A New Approach to LEO Space Debris Survey: The Italian Multibeam Bi-Static Radar 'Biraless'	Germano Bianchi, Claudio Bortolotti, Alessandro Cattani, Franco Fiocchi, Andrea Maccaferri, Andrea Mattana, Marco Morsiani, Giovanni Naldi, Federico Perini, Alessandra Porfido, Giuseppe Pupillo, Mauro Roma, Marco Schiaffino, Tonino Pisanu, Pierluigi Di Lizia, Matteo Losacco, Mauro Massari, Josef Borg, Denis Cutajar, Alessio Magro, Marco Reali, Walter Villadei	National Institute of Astrophysics, Politecnico di Milano, University of Matla, & Italian Air Force

	15:00-15:20	Test Procedure to Evaluate Spacecraft Material Ejecta Upon Hypervelocity Impact and its Systematic Review	Yasuhiro Akahoshi & Akifumi Sato	Kyushu Institute of Technology
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