

ALL-VIRTUAL PROGRAM

All dates/times listed are Hawaii Standard Time (HST). Agenda is subject to change. Each day of the plenary conference will open with a livestream of keynote addresses and SSA Policy Forum discussions. Technical presentations are released for on-demand viewing 1 day prior to their assigned Live Q&A sessions. Poster presentations are available throughout the conference.

Program at a Glance

SAT Sep 12 – EMER-GEN® Program (*separate registration fee required*)
TUE Sep 15

TUE Sep 15 Technical Short Courses (*separate registration fee required*)

On-Demand Launch | SSA/SDA, Astrodynamics, and Poster Presentations

WED Sep 16 Poster Session & Exhibition A
Conference Opening

Opening Keynote Address | Major General Stephen N. Whiting

SSA Policy Forum | *Extending SSA and Space Activities to Cislunar Space*

Live Q&A Session | *Space Situational Awareness/Space Domain Awareness*

Invited Talk | *Kevin O'Connell*

Live Q&A Session | *Astrodynamics*

Poster Session & Exhibition B

Aloha Reception

On-Demand Launch | Machine Learning, Adaptive Optics & Imaging, Non-Resolved Object Characterization, and Atmospheric/Space Weather Presentations

THU Sep 17 Poster Session & Exhibition A

Opening Remarks | *Quentin Verspieren, University of Tokyo*

SSA Policy Forum | *Challenges and Opportunities in Developing Norms of Behavior*

Featured Presentation | *EMER-GEN™ Briefing*

Live Q&A Session | *Machine Learning for SSA Applications*

Live Q&A Session | *Adaptive Optics & Imaging*

Live Q&A Session | *Non-Resolved Object Characterization*

Live Q&A Session | *Atmospherics/Space Weather*

Poster Session & Exhibition B

On-Demand Launch | Optical Systems & Instrumentation, Orbital Debris, Space-Based Assets, Cislunar SSA Presentations

FRI Sep 18 Opening Remarks

SSA Policy Forum | *Evolution of Industry Best Practices for Space Sustainability*

Live Q&A Session | *Optical Systems & Instrumentation*

Live Q&A Session | *Orbital Debris*

Live Q&A Session | *Space-Based Assets*

Featured Presentation | *The Space S&T Challenges from LEO to Cislunar*

Live Q&A Session | *Cislunar SSA Session*

Exhibition

Conference Closing & Awards Ceremony

AMOS Conference 2020



ALL-VIRTUAL PROGRAM

Saturday 12 September – Tuesday 15 September



EMER-GEN®

The annual EMER-GEN®, introduced in 2018, is a joint initiative of the AMOS Conference and SGAC. The program is designed especially for young professionals and students enthusiastic about careers in space. Separate registration required. Visit amostech.com/emer-gen to learn more.

Tuesday 15 September

AVAILABLE ON-DEMAND: Presentations from the Space Situational Awareness/Space Domain Awareness, Astrodynamics, and Poster sessions are now viewable.

TECHNICAL SHORT COURSES: Separate registration fee required for each course. Technical short courses are “live” with the ability to interact with the instructor and attendees in real-time. Registrants will receive webinar access details the week prior to the event. [Learn more.](#)

06:00^{HST} 10:00^{HST} **TECHNICAL SHORT COURSE 1** | Space Law & The Space Law Games: Legal Liability and Mapping the Future in Orbit

~~**TECHNICAL SHORT COURSE 2** | The Basics of Domain Awareness in Cislunar Space~~ **CXLD**

TECHNICAL SHORT COURSE 3 | Collision Avoidance Risk Assessment

TECHNICAL SHORT COURSE 4 | Demystifying Machine and Deep Learning

TECHNICAL SHORT COURSE 5 | Observing and Characterizing Space Debris

10:00 11:00 **BREAK** | Explore the AMOS Virtual Venue, visit the Poster Gallery, and view presentations on-demand.

11:00 03:00 **TECHNICAL SHORT COURSE 6** | Space CAMP Intro to DevSecOps

TECHNICAL SHORT COURSE 7 | Telescopes and Optics for Ground-Based Optical SSA

TECHNICAL SHORT COURSE 8 | Using CelesTrak for SSA

TECHNICAL SHORT COURSE 9 | Deep Learning Methods for Space Situational Awareness

ALL-VIRTUAL PROGRAM

Wednesday 16 September

AVAILABLE ON-DEMAND: Presentations from the Machine Learning of SSA Applications, Adaptive Optics & Imaging, Non-Resolved Object Characterization, Atmospherics/Space Weather, and Poster sessions are now viewable.

05:00^{HST} 06:00^{HST} **POSTER AND EXHIBIT SESSION A** | *Poster Gallery and Exhibit Hall*
Select poster presenters will be available via live chat to answer questions. Explore the Exhibit Hall and interact with vendors. Schedule 1:1 virtual meetings, view demos, resources, and more.

06:00 06:15 **CONFERENCE OPENING**
Leslie Wilkins, President & CEO, Maui Economic Development Board

CULTURAL INVOCATION

WELCOME & INTRODUCTIONS

06:15 06:45 **OPENING KEYNOTE ADDRESS**
Introduction by Dr. Kelly Hammett, Director, Directed Energy Directorate, Air Force Research Laboratory



Major General Stephen N. Whiting
Commander, Space Operations Command
United States Space Force

06:45 07:00 **KEYNOTE Q&A**

07:00 08:00 **SSA POLICY FORUM | Extending SSA and Space Activities to Cislunar Space**
Traditional space situational awareness activities (SSA) as conducted by the U.S. Department of Defense have been limited to Earth-orbiting objects. The growing interest and plans to expand international and commercial space activities into cislunar space suggests SSA should be expanded to include cislunar space as well. This panel will discuss the impetus for this evolution of SSA, current efforts under way, and future areas for collaboration and development.

Moderated by:

Brian Weeden, Director of Program Planning, Secure World Foundation

Panelists:

Brien Flewelling, Chief Space Situational Awareness Architect,
ExoAnalytic Solutions

ALL-VIRTUAL PROGRAM

Dan Hendrickson, Vice President of Business Development,
Astrobotic Technology, Inc.

Jerry Krassner, Space Development Agency, Emerging Capabilities Mission Area

Jessy Kate Schingler, Director, Policy and Governance, Open Lunar Foundation

08:00 08:15 EXHIBITS AND NETWORKING BREAK | *Exhibit Hall*

08:15 09:15 **LIVE Q&A: Space Situational Awareness/Space Domain Awareness**

Sponsored by  **L3HARRIS**

Co-chaired by **Moriba Jah**, University of Texas at Austin and **Danielle Wood**,
Massachusetts Institute of Technology

Join the SSA/SDA technical presenters for a live question & answer session,
hosted by the Session Co-Chairs. The following presentations can be viewed at
leisure starting Tuesday 15 Sep:

Space Command and Control Program - Kobayashi Maru
Jennifer Krolkowski, SMC/SY

*Update on ESA's Space Safety Programme and its Cornerstone on
Collision Avoidance*
Tim Flohrer, ESA/ESOC Space Debris Office

Earthfence, a GEO Capable Deep Space Radar
Brendan Quine, Thoth Technology, Inc.

*Establishing an Independent Data Quality Analysis Framework for UDL
Published Datasets*
Jeffrey Won, The Aerospace Corporation

*Developing a Comprehensive Application for Satellite Anomaly Analysis and
Attribution*
Janet Green, Space Hazards Applications, LLC

*Commercial Sprint Advanced Concept Training (SACT): A Renaissance in
Collaborative International Space Operations*
Joseph Gerber, Centauri

*Real-time Multi-target Detection & Tracking of Space Objects using
FiSSt Methods*
Shez Virani, University of Colorado Boulder

*PHANTOM ECHOES: A Five-Eyes SDA Experiment to Examine GEO Rendezvous
and Proximity*
Simon George, Defence Science and Technology Laboratory

ALL-VIRTUAL PROGRAM

The Contributions of Commercial Best Practices to the Global Space Governance Continuum
Daniel Oltrogge, Analytical Graphics, Inc.

Dempster-Schafer Inspired Association Framework and Tracking Metric for Space Objects
Timothy Murphy, L3Harris

Australia's Emerging Space Policy - Defense Burden Sharing in Orbit and Space Situational Awareness
Malcolm Davis, The Australian Strategic Policy Institute

Key Issues and Perspectives on International Space Governance and the Weaponization of Space
Todd Harrison, Center for Strategic and International Studies

Telescope Tasking for Maneuver Detection and Custody Maintenance using Evidential Reasoning and Reachability Theory
Daniel Aguilar Marsillach, University of Colorado Boulder

WRC-19: New Space Law Enabling the Use and Sustainability of LEO
Audrey Allison, The Boeing Company

09:15 09:45 **INVITED TALK | Kevin O'Connell**
Director of the Office of Space Commerce, U.S. Department of Commerce
Introduction by Eric Stallmer, President, Commercial Spaceflight Federation

09:45 10:15 **LIVE Q&A: Astrodynamics**
Co-chaired by **T.S. Kelso**, ComSpOC Corp and **Marek Ziebart**, University College London

Join the Astrodynamics technical presenters for a live question & answer session, hosted by the Session Co-Chairs. The following presentations can be viewed at leisure starting Tuesday 15 Sep:

Robust Initial Orbit Determination Using Streaks and Admissible Regions
Sam Wishnek, CU Boulder

Tracking Maneuvering Targets with Multi-Fidelity Interacting Multiple Model Filters
Enrico Zucchelli, University of Texas at Austin

Evaluation of Performance Metrics for Fourier Drag Models in Orbit Determination and Prediction
Vishal Ray, CU Boulder

ALL-VIRTUAL PROGRAM

Satellite Maneuver Detection with Optical Survey Observations
Alejandro Pastor, GMV

Passive RF in Support of Closely Spaced Objects Scenarios in GEO
Kameron Simon, Kratos

Scaling Orbit Propagation Analysis Capabilities with Cloud Computing, Data Analytics and the Unified Data Library
Ann Chervenak, The Aerospace Corporation

Cislunar Periodic Orbit Families and Expected Observational Features
Channing Chow, Pacific Defense Solutions/ A Centauri Company

10:15 11:15 **POSTER AND EXHIBIT SESSION B** | *Poster Gallery and Exhibit Hall*
Select poster presenters will be available via live chat to answer questions.

11:15 11:45 **ALOHA RECEPTION**
Please join us for Hawaiian music and Tahitian dancing as we transport you to paradise in anticipation of your return to Maui in 2021.

05:00 ^{HST} **RE-BROADCAST OF DAY 1**
Keynote, SSA Policy Forum, and sessions available for viewing

Thursday 17 September

AVAILABLE ON-DEMAND: Presentations from the Optical Systems & Instrumentation, Orbital Debris, Space-Based Assets, Cislunar SSA, and Poster sessions are now viewable.

05:00 ^{HST} 06:00 ^{HST} **POSTER AND EXHIBIT SESSION A** | *Poster Gallery and Exhibit Hall*
Select poster presenters will be available via live chat to answer questions. Explore the Exhibit Hall and interact with vendors. Schedule 1:1 virtual meetings, view demos, and engage with fellow attendees.

06:00 06:30 **OPENING REMARKS | Quentin Verspiere**
Researcher, Science, Technology, and Innovation Governance Program, Graduate School of Public Policy, The University of Tokyo

06:30 07:30 **SSA POLICY FORUM | Challenges and Opportunities in Developing Norms of Behavior**
Developing norms of behavior for space activities is widely viewed as an important step towards increasing the safety, stability, and security of space activities. But there have been challenges in translating the desire for norms in space into concrete proposals and actual changes in behavior. This panel will discuss the value of norms of behavior for national security, civil, and commercial space activities and steps that can be taken, both in the United States and internationally, to create and enforce future norms.

AMOS Conference 2020



ALL-VIRTUAL PROGRAM

Moderated by:

Victoria Samson, Washington Office Director, Secure World Foundation

Panelists:

David Edmondson, Policy Head, Space Security and Advanced Threats, UK
Foreign and Commonwealth Office

Bruce McClintock, Lead, Space Enterprise Initiative, RAND

Jessica West, Senior Researcher, Project Ploughshares

Brigadier General Richard L. Zellmann, Deputy Director, Strategy, Plans, and
Policy Directorate, U.S. Space Command

07:30	07:45	EXHIBITS AND NETWORKING BREAK <i>Exhibit Hall</i>
07:45	08:00	FEATURED PRESENTATION EMER-GEN® Briefing
08:00	08:30	LIVE Q&A: Machine Learning Applications of SSA Co-chaired by Justin Fletcher , Air Force and Nathan Toner , Centauri

Join the Machine Learning technical presenters for a live question & answer session, hosted by the Session Co-Chairs. The following presentations can be viewed at leisure starting Wednesday 16 Sep:

Exploiting Spatial Information in Raw Spectroscopic Imagery using Convolutional Neural Networks

Jonathan Gazak, Air Force Research Laboratory

Machine Learning Implementation for In-orbit RSO Orbit Estimation using Star Tracker Cameras

Siddharth Dave, York University

On-board, Autonomous, Hybrid Spacecraft Subsystem Fault and Anomaly Detection, Diagnosis, and Recovery

Richard Stottler, Stottler Henke Associates, Inc.

Star-Galaxy Separation via Gaussian Processes with Model Reduction

Imene Goumiri, Lawrence Livermore National Laboratory

Game Theoretic Synthetic Data Generation for Machine Learning Based Satellite Behavior Detection

Dan Shen, Intelligent Fusion Technology, Inc

Satellite Characterization via Restoration-Free Imaging: A Novel Machine Learning Paradigm for SSA

Ryan Walden, Georgia State University

ALL-VIRTUAL PROGRAM

08:30 09:00

LIVE Q&A: Adaptive Optics & Imaging

Co-chaired by **Geoff Andersen**, Air Force Office of Scientific Research and **Michael Hart**, University of Arizona; HartSci LLC

Join the Adaptive Optics & Imaging technical presenters for a live question & answer session, hosted by the Session Co-Chairs. The following presentations can be viewed at leisure starting Wednesday 16 Sep:

Real Time Deconvolution of Adaptive Optics Ground Based Telescope Imagery
Toby Sanders, Lickenbrock Technologies, Inc.

Spatially Separable Blind Deconvolution of Long Exposure Astronomical Imagery
Justin Lee, Air Force Institute of Technology

Ultra Broadband High-contrast, High-resolution Speckle Imaging
Ryan Hall, Georgia State University

LEO Satellite Imaging with Adaptive Optics and Marginalized Blind Deconvolution
Cyril Petit, ONERA

Quality-Weighted Iterative Deconvolution (QWID)
Michael Werth, The Boeing Company

09:00 09:30

LIVE Q&A: Non-Resolved Object Characterization | Sponsored by **KRATOS**

Co-chaired by **Emily Lambert**, L3 Harris and **Tamara Payne**, Applied Optimization, Inc.

Join the NROC technical presenters for a live question & answer session, hosted by the Session Co-Chairs. The following presentations can be viewed at leisure starting Wednesday 16 Sep:

Characterization of Resident Space Object States Using Functional Data Analysis
Tom Kelecj, L3Harris

Radar and Optical Study of Defunct GEO Satellites
Conor Benson, University of Colorado Boulder

Multicolor and Spectral Characterization of Space Objects in the Near-IR
Harrison Krantz, University of Arizona Steward Observatory

Hyperspectral Unmixing for Remote Sensing of Unresolved Objects
Miguel Velez-Reyes, The University of Texas at El Paso

Calculating Photometric Uncertainty
Philip Castro, Applied Optimization Inc.

ALL-VIRTUAL PROGRAM

Light Curve Analysis using Kalman Filtering and Small Telescope Capabilities
Kent Rush, California Polytechnic at San Luis Obispo

09:30 09:45 EXHIBITS & NETWORKING BREAK | *Exhibit Hall*

9:45 10:15 **LIVE Q&A: Atmospheric/Space Weather**
Co-chaired by **Thomas Berger**, University of Colorado at Boulder and **Marcus Holzinger**, University of Colorado at Boulder

Join the Atmospheric/Space Weather technical presenters for a live question & answer session, hosted by the Session Co-Chairs. The following presentations can be viewed at leisure starting Wednesday 16 Sep:

Impact of Aerosols on Skylight Radiances
Jeannette van den Bosch, Air Force Research Laboratory

Improved Physics-Based Simulation of the LEO Space Environment
Eric Sutton, University of Colorado / SWx TREC

Satellite Impacts of Solar Energetic Particles and Galactic Cosmic Rays
Christina Cohen, Caltech

Earth's Radiation Belts: The Hazards to Satellites and What Can Be Done to Mitigate Risks
Geoffrey Reeves, Los Alamos National Laboratory

Why You Should Care About the Thermosphere and Space Weather
Aaron Ridley, University of Michigan

Earth's Ionosphere and its Impact on Global Navigation Satellite Systems
Susan Skone, University of Calgary

10:15 11:15 **POSTER AND EXHIBIT SESSION B** | *Poster Gallery and Exhibit Hall*
Select poster presenters will be available via live chat to answer questions.

05:00_{HST} **RE-BROADCAST OF DAY 2**
Keynote, SSA Policy Forum, and sessions available for viewing

Friday 18 September

AVAILABLE ON-DEMAND: All Oral and Poster Presentations.

06:00_{HST} 06:30_{HST} **OPENING REMARKS | Mark Dankberg**
Chief Executive Officer, Viasat

06:30 07:30 **SSA POLICY FORUM | Evolution of Industry Best Practices for Space Sustainability**

ALL-VIRTUAL PROGRAM

There are multiple efforts underway within the private sector to develop best practices that will enhance space sustainability. This panel brings together experts leading several of these efforts to discuss what is being developed and how they can be shaped in a complementary fashion.

Moderated by:

Ian Christensen, Director of Private Sector Programs, Secure World Foundation

Panelists:

Chris Blackerby, Chief Operating Officer, Astroscale

Therese Jones, Senior Director of Policy, Satellite Industry Association

Dan Oltrogge, Director, CSSI, Analytical Graphics, Inc.

Danielle Wood, Assistant Professor of Media Arts & Sciences and Aeronautics & Astronautics, MIT Media Lab

07:30 07:45 EXHIBITS AND BREAK | *Exhibit Hall*

07:45 08:15 **LIVE Q&A: Optical Systems & Instrumentation**
Co-chaired by **Sue Lederer**, NASA Johnson Space Center and **Darren McKnight**, Centauri

Join the Optical Systems & Instrumentation technical presenters for a live question & answer session, hosted by the Session Co-Chairs. The following presentations can be viewed at leisure starting Thursday 17 Sep:

Developments in High Spatial Resolution Imaging of Faint, Complex Objects at Lowell Observatory

Gerard van Belle, Lowell Observatory

Quantifying Speckle Noise in Shack-Hartmann Wavefront Sensing

Gregory Allan, MIT

An Automated Indications and Warning System for Enhanced Space Domain Awareness

Navraj Singh, Numerica Corporation

Quick Radar / Optical Super Observation for Deep Space

Josh Minneti, MITRE

Optimizing Daylight Performance of Small Visible-NIR Optical Systems

Peter Zimmer, J.T. McGraw and Associates

Kiwi Space Radar: Measurement Precision and Orbit Tracking Performance

Matthew Stevenson, LeoLabs

ALL-VIRTUAL PROGRAM

08:15

08:45

LIVE Q&A: Orbital Debris

Co-chaired by **James Blake**, University of Warwick and **Heather Cowardin**, NASA Johnson Space Center

Join the Orbital Debris technical presenters for a live question & answer session, hosted by the Session Co-Chairs. The following presentations can be viewed at leisure starting Thursday 17 Sep:

Optical Characterization of DebrisSat Fragments in Support of Orbital Debris Environmental Models

Heather Cowardin, NASA

Large Constellations of LEO Satellites and Astronomy

Patrick Seitzer, University of Michigan, Dept of Astronomy

Contribution from SSA data to the definition of a Space Sustainability Rating

Danielle Wood, Space Enabled Research Group, MIT Media Lab

The US Air Force compliance with the Orbital Debris Mitigation Standard Practices

Quentin Verspieren, The University of Tokyo

Can International Law Provide a Basis for Actively Removing Space Debris?

Scott Steele, The Open University

08:45

09:15

LIVE Q&A: Space-Based Assets | Sponsored by Peraton

Co-chaired by **Brandon Cesul**, Centauri and **Elizabeth Cunningham**, Air Force

Join the Space-Based Assets technical presenters for a live question & answer session, hosted by the Session Co-Chairs. The following presentations can be viewed at leisure starting Thursday 17 Sep:

MicroSat Laser Communication Terminals and IR Imaging Payloads for Space-based Applications

David Robie, General Atomics

Space Object Identification Satellite Mission

Houman Hakima, Space Strategies Consulting Ltd

SmallSat Solutions for Far Side Domain Awareness in Cislunar Space


Thomas Marshall Eubanks, Space Initiatives Inc ~~CXLD~~

Smallsat Innovative Satellite Technology Enabling Research: Synthetic Aperture Radar Dual Inter-Satellite Network Exchange

Andrew Burjek, University of Alabama ~~CXLD~~

ALL-VIRTUAL PROGRAM

SSA Experiments for the Australian M2 Formation Flying CubeSat Mission
Melrose Brown, UNSW Canberra

09:15	09:30	EXHIBITS AND NETWORKING BREAK <i>Exhibit Hall</i>
09:30	10:00	FEATURED PRESENTATION <i>The Space S&T Challenges from LEO to Cislunar</i> Col Eric Felt , Director, Space Vehicles Directorate, Air Force Research Laboratory Col Joseph Roth , Director, Innovation & Prototyping, Air Force Space & Missile Systems Center
10:00	10:30	LIVE Q&A: Cislunar SSA <i>Sponsored by</i>  Co-chaired by James Frith , Air Force Research Laboratory and Jaime Stearns , Air Force Research Laboratory
<p>Join the Cislunar SSA technical presenters for a live question & answer session, hosted by the Session Co-Chairs. The following presentations can be viewed at leisure starting Thursday 17 Sep:</p> <p><i>An Evaluation of Observing Constellation Orbit Stability, Low Signal-to-Noise, and the Too-Short-Arc Challenges in the Cislunar Domain</i> Mark Bolden, Trusted Space, Inc.</p> <p><i>Maneuver Detection for Cislunar Vehicles using Optical Measurements</i> Jesse Greaves, University of Colorado Boulder</p> <p><i>Simulated Photometry of Objects in Cislunar Orbits</i> Phan Dao, AFRL</p> <p><i>Payload and Constellation Design for a Solar Exclusion-Avoiding Cislunar SSA Fleet</i> Phillip Cunio, ExoAnalytic Solutions</p> <p><i>Cislunar Night Sky Brightness and Ground-Based Telescopes</i> Eric Pearce, University of Arizona Steward Observatory CXLD</p>		
10:30	10:50	CONFERENCE CLOSING & AWARDS CEREMONY In collaboration with the Space Surveillance Technical Committee of the American Astronautical Society (AAS), the AMOS Conference recognizes outstanding efforts in the field of Space Situational Awareness/Space Domain Awareness by presenting the third annual AMOS Conference Best Paper and Student Awards.
05:00 ^{HST}		RE-BROADCAST OF DAY 3 Keynote, SSA Policy Forum, and sessions available for viewing

Digital Poster Presentations

Please visit the [Poster Gallery](#) to access Poster presentations on-demand. Select presenters will be available during the designated poster sessions to answer questions via chat.

POSTER SESSION A PRESENTATIONS

Wed Sep 16 05:00-06:00 a.m. HST | Thu Sep 17 05:00-06:00 a.m. HST

Experimental Investigation of Surface Modification of Typical Space Materials Induced by Low Energetic Particle Irradiation

Denise Beisecker

Enhancing a Survey of Faint Geosynchronous Debris with Commercial-off-the-shelf Equipment

James Blake, University of Warwick

Evaluating CONOPS for GEO Spacecraft Identification and Custody from Non-SSA Architectures in LEO

Kevin Brannick, Raytheon

Optimality and Application of Tree Search Methods for POMDP-based Sensor Tasking

Samuel Fedeler, University of Colorado at Boulder

A Constellation of Sensors Optimized for Maneuver Tracking

Holly Flinchbaugh, Lockheed Martin

An Exploration of Space Situational Awareness (SSA) Needs for Active Debris Removal (ADR) Operators

Jason Forshaw, Astroscale

Artificial Intelligence and Autonomy in Space: Balancing Risks and Benefits for Deterrence and Escalation Control

Nancy Hayden, Sandia National Laboratories

Cis-Lunar Autonomous and SSA Navigation via Implementation of Optical Asteroid Angle-Only Measurements

Mark Hinga, AFRL/RDST

Progress on the ELROI Satellite License Plate

Rebecca Holmes, Los Alamos National Laboratory

Benefits of Using a Space Based Spooky Radar at the Earth-Moon Lagrange Points for Orbit Determination

Darin Koblick, Raytheon Space and Airborne Systems

Ukrainian Optical Sensors for Space Surveillance

Oleksandr Kozhukhov, National Space Facilities Control and Test Center of State Space Agency of Ukraine

AMOS Conference 2020



ALL-VIRTUAL PROGRAM

International Collaboration Framework for Space Domain Awareness

Sarah Law, Raytheon

Laser ranging to space debris in Poland: tracking and orbit determination

Pawel Lejba, Space Research Center of the Polish Academy of Sciences

European Space Agency Space Weather System

Juha-Pekka Luntama, European Space Agency

Understanding the Oscillating Pattern in the Rotational Period Evolution of Several GLONASS Satellites

Thomas Schildknecht, Astronomisches Institut Universität Bern

Onboard Artificial Intelligence for Space Situational Awareness with Low Power GPUs

Jelena Sirovljevic, MDA

Angles-Only Orbit Determination Accuracies with Limited Observational Arc and Feasibility Analysis on Small Telescope Capabilities

Kyle Stoker, Cal Poly San Luis Obispo

~~*A Comparison of Candidate Machine Learning Approaches Toward a Near Real-time Auto-maneuver Detection and Classification Capability for Deployment at the Edge*~~

~~**Triet Tran**, Cornerstone Consulting LLC **CXLD**~~

POSTER SESSION B PRESENTATIONS

Wed Sep 16 10:15-11:15 a.m. HST | Thu Sep 17 10:15-11:15 a.m. HST

Convolutional Neural Networks for Inference of Space Object Attitude Status

Gregory Badura, GTRI

A Sensor-Rich Solution for Lunar/Cislunar Space Domain Awareness

Brian Banks, Leidos

Utility of Modular Attitude Determination and Control Subsystems for Small Satellites

Robert Bettinger, Air Force Institute of Technology

Performance of Parameterization Algorithms for RSO Shape and Optical Property Estimates

Ryan Clark, York University

The Sensor Management Prisoner's Dilemma: A Deep Reinforcement Learning Approach

Weston Faber, L3Harris

~~*SatNet: A Benchmark Dataset for Deep Space Object Detection and Low Signal-to-Noise Domain Transfer*~~

~~**Justin Fletcher**, SMC/DirSP-G **CXLD**~~

AMOS Conference 2020



ALL-VIRTUAL PROGRAM

SILO-G: A Machine Learning Data Generator for Synthetic Ground-Based Observations of LEO Satellites
Nicole Gagnier, The Boeing Company

COOP2: A Webserver for Conjunction Management based on Dynamic Voronoi Diagram
Deok-Soo Kim, Hanyang University

Towards Real-time Image Reconstruction using Deep Neural Networks
Trent Kyono, The Boeing Company

NASA's Orbital Debris Optical Program: MCAT Reaches Full Operational Capability (FOC)
Sue Lederer, NASA Johnson Space Center Orbital Debris Program Office

Estimating Satellite Orientation through Turbulence with Deep Learning
Jacob Lucas, The Boeing Company

Cislunar periodic orbit family classification from astrometric and photometric observations using machine-learning
Greg Martin, Pacific Defense Solutions - a Centauri Company

Derelict Space Situational Awareness (SSA) Data for Free
Darren McKnight, Centauri

Calibration and Sensitivity Analysis for a New Polarimeter Instrument at the United States Air Force Academy
Marco Pirozzoli

Blockchain Enabled Space Traffic Awareness (BESTA): Automated Space Domain Awareness Information Sharing, Comparison to Agreements, and Discovery of Anomalous Behavior
Harvey Reed, MITRE

Orbit Accuracy Analysis of CDM for KOMPSAT Series Satellites
Jaedong Seong, KARI

Astrometric and Photometric Measurements of GEO Satellites in Proximity Operations over the Pacific
Jovan Skuljan, Defence Technology Agency

Towards Optimally Incorporating Non-Traditional Sensors into the Space Domain Awareness Architecture
Albert Vasso, Air Force Institute of Technology (AFIT)

Characterization of Unresolved Satellite Imagery Using Near-Simultaneous Polarimetry and Spectroscopy Data
Lucy Zimmerman, US Air Force Academy