NASA Technical Interchange Meeting on Active Optical Systems for Supporting Science, Exploration, and Aeronautics Measurements Needs

https://www.nasa.gov/nesc/tim-active-optical-systems

Meeting Agenda

Rev: 7/25/2018

Day 1 -- July 31

Start Time	8:30AM	8	30				
	Paper #	**Code**	**Min**	**Session Title**	**Session Chair Full Name**	**Speaker**	**Title**
8:30AM	P-0	I	30	Plenary	Upendra Singh	Upendra Singh	TIM Welcome
						Dr. Nick White, USRA's Senior VP for Science	USRA Welcome
						Stephen Horan	Logistics
9:00AM	P-1	I	30	Plenary	Upendra Singh	Stephen Jurczyk, NASA HQ	Agency Perspective
9:30AM	P-2	I	30	Plenary	Upendra Singh	Jack Kaye, SMD	Earth Science Overview
10:00AM	P-3	I	30	Plenary	Upendra Singh	Pamela Millar and Parminder Ghuman, NASA GSFC	ESTO's Investments in Lidar Technologies relative to the 2017 Earth Science Decadal Survey Lidar-based Measurements
10:30AM	COFFEE	CB	20				
10:50AM	S1-1	C	20	Clouds, Aerosols and Ocean	Jack Kaye/Chris Hostetler	Matthew McGill, NASA GSFC	Goddard Space Flight Center Earth Science Perspective on lasers and lidar development
11:10AM	S1-2	C	20	Clouds, Aerosols and Ocean	Jack Kaye/Chris Hostetler	Johnathan Hair, NASA LaRC	Aerosols, Clouds and Ocean Profiling High Spectral Resolution Lidar
11:30AM	S1-3	C	20	Clouds, Aerosols and Ocean	Jack Kaye/Chris Hostetler	Floyd Hovis, Fibertek	Laser Development for the Next Generation of Cloud, Aerosol, and Ocean Lidar Systems
11:50AM	S1-4	C	20	Clouds, Aerosols and Ocean	Jack Kaye/Chris Hostetler	Richard J. Hare and John A. Smith, NASA LaRC	Detectors for spaceborne aerosol-cloud-ocean lidar: Past, present and future directions
12:10PM	LUNCH	LB	60				
1:10PM	S1-Panel	C	20	Clouds, Aerosols and Ocean	Jack Kaye/Chris Hostetler	All Paper Presenters	
1:30PM	S2-1	C	20	Greenhouse and Trace Gases Measurements	Ken Jucks	Ken Jucks, NASA SMD	Overview
1:50PM	S2-2	C	20	Greenhouse and Trace Gases Measurements	Ken Jucks	James B. Abshire[1], Haris Riris[1], Graham R. Allan[2], Jianping Mao[3], William E. Hasselbrack[2], Kenji Numata[1], Jeffrey Chen[1], Randy Kawa[1], Xiaoli Sun[1] [1]NASA GSFC; [2]Sigma Space Inc.; [3]University of Maryland	The CO2 Sounder Lidar development for Airborne Science Campaigns and as a candidate for the ASCENDS Mission

2:10PM	S2-3	C	20	Greenhouse and Trace Gases Measurements	Ken Jucks	Mulugeta Petros[1], Upendra N. Singh[2], Tamer Refaat[1], Charles Antill[1], Ruben Remus[1], Jirong Yu[1], Teh-Hwa Wong[3], Doug Taylor[3], Jane Lee[3], Karl Reithmaier[3], Stephen Bowen[1], Angela Welters[1], Syed Ismail[3] and Kenneth Davis[4] [1]NASA LaRC; [2]NASA NESC; [3]Science System & Applications, Inc; [4]The Pennsylvania State University	Ground and airborne testing of an advanced 2-micron triple-pulse IPDA for atmospheric carbon dioxide and water vapor active optical remote sensing
2:30PM	S2-4	C	20	Greenhouse and Trace Gases Measurements	Ken Jucks	Haris Riris[1], Kenji Numata[1], Stewart Wu[1], Molly Fahey[1], Brayler Gonzalez[1], Jianping Mao[2], Michael Rodriguez[3], Stan Scott[1], and Xiaoli Sun[1] [1]NASA GSFC, [2]University of Maryland, [3]Sigma Space.	Measuring Methane from Space and Airborne Platforms
2:50PM	S2-5	C	20	Greenhouse and Trace Gases Measurements	Ken Jucks	Amin Nehir, NASA LaRC	Technology Development for Advanced Greenhouse Gas Lidar Systems
3:10PM	S2-Panel	C	20	Greenhouse and Trace Gases Measurements	Ken Jucks	All Paper Presenters	
3:30PM	COFFEE	C	20				
3:50PM	S3-1	C	20	Wind Measurements	Tsengdar Lee	Tsendgar Lee, NASA SMD	Overview
4:10PM	S3-2	C	20	Wind Measurements	Tsengdar Lee	Michael J. Kavaya and Jirong Yu, NASA LaRC Sammy W. Henderson, Beyond Photonics G. David Emmitt, Simpson Weather Associates	Global Wind Measurement with a Pulsed, Coherent-Detection, Lidar System: Technology Status, Development Needs, and Partnering Opportunities
4:30PM	S3-3	C	20	Wind Measurements	Tsengdar Lee	Sara Tucker, Ball Aerospace	Direct Detection Doppler Wind Lidar: Recent progress, technical needs, and future applications
4:50PM	S3-4	C	20	Wind Measurements	Tsengdar Lee	Dominique Fourguette[1], David Johnson[1], Mike Fleck[2], Matt Wiebold[2], Mike Fan[2] [1] Michigan Aerospace Corporation; [2]Honeywell International	High Altitude LIDAR Atmospheric Sensing

5:10PM	S3-5	C	20	Wind Measurements	Tsengdar Lee	Michael A. Krainak[a], Anthony W. Yu[a], Steven X. Li[a], Yingxin Bai[a], Kenji Numata[a], Jeffrey R. Chen[a], Molly E. Fahey[a], Frankie Micalizzi[a], Oleg A. Konoplev[b], Diego Janches[a], Chester S. Gardner[c], Graham R. Allan[d] [a]NASA Goddard Space Flight Center; [b]SSAI; [c]University of Illinois; [d]Sigma Space	Proposed space-based sodium lidar technology
5:30PM	S3-Panel	C	20	Wind Measurements	Tsengdar Lee		
5:50PM	END	E	0				

Day 2 -- August 1

Start Time	8:30AM	8	30				
	Paper #	**Code**	**Min**	**Session Title**	**Session Chair Full Name**	**Speaker**	**Title**
8:30AM	S4-1	C	20	Topography, Cryosphere and Biomass	Tom Wagner	Tom Wagner, NASA SMD	Overview
8:50AM	S4-2	C	20	Topography, Cryosphere and Biomass	Tom Wagner	Nicholas Sawruk, Patrick Burns, Ryan Edwards, Viatcheslav Litvinovitch, and Floyd Hovis, Fibertek	Flight Laser Transmitter Development for NASA's Ice Topography ICESat-2 Space Mission
9:10AM	S4-3	C	20	Topography, Cryosphere and Biomass	Tom Wagner	Paul R. Stysley, D. Barry Coyle, Furqan Chiragh, Erich Frese, NASA GSFC	The Global Ecosystems Dynamics Investigation (GEDI) Lidar Mission
9:30AM	S4-4	C	20	Topography, Cryosphere and Biomass	Tom Wagner	Xiaoli Sun, NASA GSFC	Advanced Single Photon Detectors for Active Remote Sensing from Space
9:50AM	S4-5	C	20	Topography, Cryosphere and Biomass	Tom Wagner	Roman Machan, Sigma Space LLC	Single Photon Lidar Measurement Technologies
10:10AM	S4-Panel	C	20	Topography, Cryosphere and Biomass	Tom Wagner	All Paper Presenters	
10:30AM	COFFEE	CB	20				
10:50AM	S5-1	C	20	Planetary Science	Jonathan Rall	Jonathan Rall	Overview
11:10AM	S5-2	C	20	Planetary Science	Jonathan Rall	James B. Abshire[1], Graham R. Allan[2], X. Sun[1], Daniel Cremons[3], Scott D. Guzewich[1], Anthony Yu[1], Floyd Hovis[4], Michael D. Smith[1], H. Riris[1], Bruce M. Gentry[1] [1]NASA GSFC; [2]Sigma Space Corporation; [3]Universities Space Research Association; [4]Fibertek Inc.	MARLI: MARs LIdar for global wind and aerosol profiles from orbit
11:30AM	S5-3	C	20	Planetary Science	Jonathan Rall	Anupam K. Misra, Tayro E. Acosta-Maeda, John N. Porter, Shiv K. Sharma, Macey Sandford, Miles Egan, University of Hawai'i	Standoff, active, non-contact, non-destructive "Search for Life" systems with fast detection.

11:50AM	S5-4	C	20	Planetary Science	Jonathan Rall	Barry Coyle, NASA GSFC	A mission-enabling UV laser for mass spectrometry (UVMS) with continuously selectable output for in situ planetary exploration
12:10PM	LUNCH	LB	60				
1:10PM	Special Commercial Applications	C	20	Automotive LiDAR: Challenges and Opportunities	Lute Maleki GM/Cruise Automation		
1:30PM	S5-Panel	C	20	Planetary Science	Jonathan Rall	All Paper Presenters	
1:50PM	S6-1	C	20	EDL Technologies	Michelle Munk	Michelle Munk, NASA LaRC	Overview
2:10PM	S6-2	C	20	EDL Technologies	Michelle Munk	Carolina Restrepo	SPLICE
2:30PM	S6-3	C	20	EDL Technologies	Michelle Munk	Farzin Amzajerdian[1], Glenn D. Hines[1], Diego F. Pierrottet[2], Bruce W. Barnes[1], Aram Gragossian[2], Mitchell J. Davis[1], Tak-kwong Ng[1], Alexander D. Scammell[1], Adam Ben Shabat[1], Larry B. Petway[1], Jacob J. Follman[1], and John M. Carson III[3] [1]NASA LaRC; [2]Coherent Applications, Inc.; [3]NASA JSC	Navigation Doppler Lidar for Autonomous Precision Landing
2:50PM	S6-4	C	20	EDL Technologies	Michelle Munk	Manoranjan Majji	Recent Advances in Relative Navigation of Aerospace Systems
3:10PM	COFFEE	CB	20				
3:30PM	S6-5	C	20	EDL Technologies	Michelle Munk	Andrew Johnson, NASA JPL	Terrain Relative Navigation: Mars 2020 and Future Systems
3:50PM	S6-6	C	20	EDL Technologies	Michelle Munk	A. Miguel San Martin, E. David Skulsky, Nikolas Trawny, and Anup Katake, NASA JPL	A Hazard Detection Sensor for Landing on Europa
4:10PM	S6-7	C	20	EDL Technologies	Michelle Munk	Brian Blair	Goddard's Work in Active Optical for EDL
4:30PM	S6-8	C	20	EDL Technologies	Michelle Munk	Dominique Fourguette[1] and Volkan Ötügen[2] [1]Michigan Aerospace Corporation; [2]Southern Methodist University	Speed Sensor for Planetary EDL: "SPRY"
4:50PM	S6-Panel	C	20	EDL Technologies	Michelle Munk	All Paper Presenters	
5:10PM	END	E	0				

Day 3 -- August 2

Start Time	8:30AM	8	30				
	Paper #	**Code**	**Min**	**Session Title**	**Session Chair Full Name**	***Speaker***	***Title***
8:30AM	S7-1	C	20	Exploration	Chris Moore	Chris Moore	Overview
8:50AM	S7-2	C	20	Exploration	Chris Moore	Don Cornwell, NASA SCaN	NASA's Optical Communications Program for 2018 and Beyond

9:10AM	S7-3	C	20	Exploration	Chris Moore	Antonios Seas[1], Bryan Robinson[2], Tina Shih[2], Farzana Khatri[2], and Mark Brumfield[1] [1]NASA GSFC; [2]MIT Lincoln Laboratory	Optical Communication Activities through the Laser-Enhanced Mission Communications Navigation and Operational Services (LEMNOS) Office
9:30AM	S7-4	C	20	Exploration	Chris Moore	Abhijit Biswas, NASA JPL	Deep Space Optical Communications (DSOC)
9:50AM	S7-5	C	20	Exploration	Chris Moore	Bo Naasz, NASA GSFC	Active Sensors for NASA Rendezvous and Capture Missions
10:10AM	S7-6	C	20	Exploration	Chris Moore	Farzin Amzajerdian, Paul F. Brewster, Vincent E. Roback, and Glenn Hines, NASA LaRC	3-D Imaging Flash Lidar for Autonomous Safe Landing and Spacecraft Proximity Operation
10:30AM	COFFEE	CB	20				
10:50AM	S7-Panel	I	30	Exploration	Chris Moore	All Paper Presenters	
11:20AM	S8-1	C	20	Aeronautics	Greg Adamovsky/Paul Danehy	Session Chairs	Overview
11:40AM	S8-2	C	20	Aeronautics	Greg Adamovsky/Paul Danehy	Hyun Jung Kim[1] and Thomas Jones[2] [1]National Institute of Aerospace; [2]NASA LaRC	Unique Capabilities within the Advanced Measurement and Data Systems Branch at NASA LaRC
12:00PM	LUNCH	LB	60				
1:00PM	S8-3	C	20	Aeronautics	Greg Adamovsky/Paul Danehy	Paul Danehy	Active Optical Sensing for Flow Quantification in Wind Tunnels in support of Aeronautics, Science and Exploration
1:20PM	S8-4	C	20	Aeronautics	Greg Adamovsky/Paul Danehy	Ivan Clark, NASA LaRC	Active Optical Systems for Aeronautics
1:40PM	S8-5	C	20	Aeronautics	Greg Adamovsky/Paul Danehy	Richard J. Schwartz[1], Carey F. Scott[1], Meaghan L. McCleary[2] [1]AMA Inc; [2]Iowa State University	SAMI, the SCIFLI Airborne Multispectral Imager: An Airborne Platform to Support Development and Testing of Active Optical Components and Sensors
2:00PM	S8-6	C	20	Aeronautics	Greg Adamovsky/Paul Danehy	Grady Koch, Ivan Clark, Fred Proctor, and Narasimha Prasad, NASA LaRC	Wind Lidar for Aviation Safety and Enhanced Efficiency
2:20PM	S8-7	C	20	Aeronautics	Greg Adamovsky/Paul Danehy	Mark R. Woike, NASA GRC	Advanced Optical Instrumentation for the NASA Glenn Research Center's Aeronautical Test Facilities
2:40PM	S8-Panel	I	30	Aeronautics	Greg Adamovsky/Paul Danehy	All Paper Presenters	
3:10PM	COFFEE	CB	20				
3:30PM	S9-1	C	20	Innovations	Mike Seablom/Denise Podolski	Nan Yu, NASA JPL	Laser and optical systems for atomic clocks, sensors, and quantum applications in space
3:50PM	S9-2	C	20	Innovations	Mike Seablom/Denise Podolski	Paul Suni, Lockheed Martin Space	Photonic integrated circuits for active optical sensing in space

4:10PM	S9-3	C	20	Innovations	Mike Seablom/Denise Podolski	Kenji Numata, Anthony Yu, Hua Jiao, Scott Merritt, Frankie Micalizzi, Molly Fahey, Jordan Camp, and Michael Krainak NASA GSFC	Laser System for the Laser Interferometer Space Antenna (LISA)
4:30PM	S9-4	C	20	Innovations	Mike Seablom/Denise Podolski	Abigail Licht, MIT Lincoln Laborarory	Geiger mode avalanche photodiode development at MIT Lincoln Laboratory
4:50PM	S9-5	C	20	Innovations	Mike Seablom/Denise Podolski	David D. Smith and Andrew Keys, NASA MSFC	Prospects for the Development of Fast-Light Inertial Sensors
5:10PM	S9-6	C	20	Innovations	Mike Seablom/Denise Podolski	Jennifer Inman, NASA LaRC and Ian Miller, N&R Engineering	Ocular Hazard Risk Management for Airborne and Spaceborne Active Optical Systems
5:30PM	S9-Panel	I	30	Innovations	Mike Seablom/Denise Podolski	All Presenters	
6:00PM	END	E	0				