

2020 AGU Fall Meeting

NASA Earth Science Technology Office (ESTO)

ESTO-Funded and ESTO-Affiliated Presentations, Posters, and Events



Thursday, December 3

Decadal Survey Surface Topography & Vegetation

Incubation Study Town Hall (07:00 - 08:00 PST) –
Andrea Donnellan and David J Harding

Monday, December 7

Poster A003-0019 (04:00 - 20:59 PST)
CHAPS: A Compact Hyperspectral Imager for Air Pollution Remote Sensing – William H Swartz

Poster C002-0010 (04:00 - 20:59 PST)
Which Family Trees of Snow Interception Modeling History have the Essentials for Success? – Jessica D Lundquist

eLightning IN003-08 (07:00 - 08:00 PST)
Harnessing Emerging High-Performance Computing, Cloud, and Data Analytics Capabilities: Preparing the Climate, Solid Earth, Space, and Geospatial Sciences for Exascale – Sudhir R Shrestha

Presentation A017-05 (07:36 - 07:44 PST)
The Observed Relationship Between GOES-16 Derived Overshooting Top Area and Midlevel Updraft Area – Maxwell Grover

Tuesday, 8 December 2020

eLightning IN009-06 (10:30 - 11:30 PST)
Solving Training Data Bottlenecks for Artificial Intelligence/ Machine Learning in Earth Science – Ved Chirayath

Wednesday, 9 December 2020

Poster A060-0011 (04:00 - 20:59 PST)
Using Machine Learning to Identify Planetary Boundary Layer Heights for Ceilometer-Based Aerosol Backscatter Retrievals – Jennifer Sleeman

Poster A068-0010 (04:00 - 20:59 PST)
Machine Learning for Emulating Physical Parameterization of Planetary Boundary Layer Height – Phuong Nguyen

Thursday, 10 December 2020

eLightning H082-11 (04:30 - 04:33 PST)
Development of a “nature run” for observation system simulation experiments (OSSE) for snow mission development – Melissa Wrzesien

eLightning H093-11 (06:00 - 06:03 PST)
Towards an Integrated Terrestrial Freshwater Remote Sensing System using the NASA Land Information System, Data Assimilation, and Synthetic Retrievals of Snow, Soil Moisture, and Vegetation over Western Colorado – Lizhao Wang

eLightning Session IN019 (10:30 - 11:30 PST)
New Observing Strategies for Earth Science
eLightning Session Conveners – David Green, Benjamin Smith, and Jacqueline LeMoigne

eLightning IN019-02 (10:33 - 10:36 PST)
What is the Optimal Mixture of Space-borne Sensors for Remote Sensing of Terrestrial Freshwater?: A Comparative Analysis of Passive Optical, Passive Microwave, Active Microwave, and LiDAR Retrievals – Bart Forman

eLightning Session IN019 (cont.)

Presentation IN019-03 (10:36 - 10:39 PST)
Optimal Sensing of Tropical Cyclones (TCs) by Constellation of Low Earth Orbiting Satellites, Guided by Numerical Weather Prediction Model Ensemble Track Forecasts and Assimilation of Observed/ Missed TC Center Position Measurements – Vinay Ravindra

eLightning IN019-05 (10:42 - 10:45 PST)
NACHOS: A High-Resolution Hyperspectral Imager for Atmospheric Trace Gas Monitoring in a CubeSat Configuration – Kirk Post

Presentation IN019-06 (10:45 - 10:48 PST)
Space Ground Sensor Webs for Volcano Monitoring – Steve Chien

eLightning IN019-07 (10:48 - 10:51 PST)
Co-Design and Co-Simulation Infrastructure for a New Observing Strategies Testbed – Jim Carr

eLightning IN019-08 (10:51 - 10:54 PST)
Evaluation of Remote-Sensing Architectures using the Virtual Constellation Engine – Marco Paoloeri

Presentation IN019-09 (10:54 - 10:57 PST)
Using The Simulation Toolset for Adaptive Remote Sensing (STARS) To Explore the Tradespace of New Observing Strategies – Jakob DeLong

Presentation IN019-11 (11:00 - 11:03 PST)
Distributed Spacecraft with Heuristic Intelligence to Enable Logistical Decisions (D-SHIELD) for Soil Moisture Monitoring – Sreeja Nag

Presentation IN019-12 (11:03 - 11:06 PST)
StereoBit: Onboard Intelligence for a Stereo Winds Constellation – James Carr

Presentation IN019-13 (11:06 - 11:09 PST)
Quantifying Uncertainty and Kinematics of Earth Systems (QUAKES) Analytic Center Framework and Imager – Andrea Donnellan

Friday, 11 December 2020

Poster B062-0002 (04:00 - 20:59 PST)
Airborne Sensor Combination for Calibration, Validation, and Research in Dynamic Aquatic Systems – Liane Guild

NASA Earth Science Division Town Hall
(10:30 - 11:30 PST) – Sandra Cauffman, Paula S Bontempi, Charles E Webb, Lawrence Friedl, Pamela Millar, and Kevin J Murphy

Presentation IN025-04 (10:39 - 10:42 PST)
Designing a Disruption Tolerant Network for Reactive Spacecraft Constellations – Sreeja Nag

Friday, 11 December 2020 (cont.)

Presentation A128-14 (11:09 - 11:12 PST)
Assessment of lidar XCH₄ measurements during ACT-America 2019 for boundary layer methane and emission model constraint – Rory Barton-Grimley

Presentation B073-08 (20:58 - 21:02 PST)
Dynamic responses of ground beetles to climate change and habitat characteristics – Tong Qiu

Monday, 14 December 2020

Poster A141-0012 (04:00 - 20:59 PST)
Comparison of Co-Incident MISR, Terra MODIS and ISS-CATS Cloud Top Heights – Arka Mitra

Presentation IN032-06 (10:30 - 10:35 PST)
Fusion and Visualization of Planetary Boundary Layer Height from Ceilometer and WRF-Chem – David Chapman

Presentation IN033-02 (11:35 - 11:40 PST)
Compressive Sensing and Deep Learning framework for Multiple Satellite Sensor Data Fusion – Rahul Gite

Presentation A171-05 (20:46 - 20:50 PST)
Simultaneous Lidar Profiling of Water Vapor, Aerosol, and Wind over the Eastern Pacific and Implications for Observational Challenges on Clouds, Circulation, and Climate Sensitivity – Brian J. Carroll

Tuesday, 15 December 2020

Poster A175-0014 (04:00 - 20:59 PST)
Open-path Dual-comb Spectroscopy in the 4.5 to 4.9 μm Region for Measurements of CO₂, N₂O, CO, and O₃ – Kevin Cossel

Poster A180-0002 (04:00 - 20:59 PST)
A Small Satellite Constellation of Compact, Multi-angle, Multi-Spectral Imagers for Global Observation of the Planetary Boundary Layer – Mike Kelly

Presentation A192-04 (05:42 - 05:46 PST)
Exploring Lateral Boundary Forcings on High Resolution Regional Sub-Seasonal Prediction Performance – Carlos Cruz

Presentation A197-09 (10:24 - 10:27 PST)
A Continuity Microwave Limb Sounder (MLS) instrument to augment the record from Aura MLS – Nathaniel Livesey

eLightning A197-10 (10:27 - 10:30 PST)
The Configurable Scanning Submillimeter-wave Instrument/Radiometer (CoSSIR): Modernizing Submillimeter Radiometry for Future Cloud Investigations – Ian Adams

Panel A198 (11:30 - 12:30 PST)
Achieving Breakthrough Science with Small Satellites: A Pathway to Knowledge and Mission Success I – Pamela Millar, J Daniel Moses, Michael Garcia, and William Horne

Presentation A206-06 (21:05 - 21:12 PST)
Measurement of Trace Gases from an Unconventional Oil and Gas Development Site Using Mid-Infrared Dual Comb Spectroscopy – Eleanor Waxman

Wednesday, 16 December 2020

Poster A215-0003 (04:00 - 20:59 PST)
Assimilation of the ceilometer observed planetary boundary layer height into WRF-Chem/DART – Zhifeng Yang

Presentation IN041-01 (04:00 - 04:03 PST)
NASA's Advanced Information Systems Technology (AIST) Program: Technology Enabling Earth Science Understanding – Laura Rogers

Presentation IN041-03 (04:06 - 04:09 PST)
SISTER: SBG Space-based Imaging Spectroscopy and Thermal Pathfinder – Philip Townsend

Presentation IN041-05 (04:12 - 04:15 PST)
Imaging Spectroscopy Processing Environment on the Cloud (ImgSPEC) – E. Natasha Stavros

Presentation IN041-06 (04:15 - 04:18 PST)
Statistical Inference for Spatiotemporal Trends in Remote-Sensing Data – Anthony Ives

Presentation IN041-07 (04:18 - 04:21 PST)
Integrating Point-Source Methane Emissions from Imaging Spectroscopy Data into the Multi-scale Methane Analytic Framework (M2AF) Information System – E. Natasha Stavros

Presentation IN041-09 (04:24 - 04:27 PST)
Distributed Machine Learning and Data Fusion for Flood Detection and Monitoring – Thomas Huang

Presentation IN041-14 (04:39 - 04:42 PST)
Multi-agent multi-scale observations of soil moisture via SPCTOR: Sensing Policy Controller and Optimizer – Mahta Moghaddam

eLightning A235-08 (07:22 - 07:25 PST)
Melt extent and melt volume attributed to distinct causal mechanisms – Wenshan Wang

Presentation H206-03 (10:08 - 10:12 PST)
Cloud-based Analytical Framework for Precipitation Research (CAPRi) – John Beck

Presentation H212-11 (18:00 - 18:03 PST)
Understanding Heterogeneity to Improve Snow-albedo Feedbacks in a Simplified Regional Climate Mode – Ethan Gutmann

Thursday, 17 December 2020

Presentation C068-01 (04:03 - 04:07 PST)
Multi-scale Snow-Atmosphere Interactions Over Mountain Snowpack for Climate Applications – Ethan Gutmann

Presentation A249-02 (04:04 - 04:08 PST)
Airborne differential absorption radar measurements with the 167-174.8 GHz Vapor In-cloud Profiling Radar (VIPR) – Richard Roy

Presentation A252-05 (05:46 - 05:50 PST)
The Future of CubeSat Constellations of Microwave Atmospheric Sounders: Temporal Experiment for Storms and Tropical Systems (TEMPEST) Mission – Steven C Reising

For more on NASA ESTO and its technology investments, visit esto.nasa.gov