**American Geophysical Union Fall Meeting**
December 9 – 13, 2024, Washington D.C.
The University of Oklahoma

**Monday, December 9, 2024**

Geophysical Characterization of Sulfur Deposits: Investigating a Terrestrial Analog for Martian Environments in Oklahoma

Dani Storms[1], Itunu Apalara[1], Megan Elwood Madden[2], Caitlin Anne Hodges[3], Andrew Stephen Elwood Madden[4] and Sina Saneiyan[3], (1)University of Oklahoma, School of Geosciences, Norman, United States, (2)University of Oklahoma, Norman, United States, (3)University of Oklahoma, School of Geosciences, Norman, OK, United States, (4)University of Oklahoma, Norman, OK, United States
*Abstract*

- *Monday, 9 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

Documenting Early-Stage Woody Plant Encroachment Impact to Soil C and N Dynamics Within a Central Oklahoma Degraded Prairie Ecosystem

Taylor Frentz[1], Martha Jimenez-Castaneda[2], Greg Newman[3], Antonio Florentino, Dr.[4], Janine Sparks[5], Bailey Williams[6] and Timothy R Filley[4], (1)University of Oklahoma, Department of Geography and Environmental Sustainability, Norman, United States, (2)University of Oklahoma, Norman, United States, (3)University of Oklahoma Norman Campus, School of Biological Sciences, Norman, United States, (4)The University of Oklahoma, Department of Geography and Environmental Sustainability, Norman, United States, (5)The University of Oklahoma, Norman, United States, (6)University of Oklahoma Norman Campus, Norman, United States
*Abstract*

- *Monday, 9 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

A11K

Advances of Remote Sensing Inversion I Poster

Oleg Dubovik, University of Lille 1, Villeneuve d'Ascq, France, Feng Xu, University of Oklahoma, School of Meteorology, Norman, OK, United States, Reed Espinosa, NASA Goddard Space Flight Center, Greenbelt, United States and Jean-Claude Roger, University of Maryland College Park, Department of Geographical Sciences, College Park, MD, United States
*Session Proposal*

- *Monday, 9 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

GH12B

Human Health and Safety in the Face of Climate-Charged Weather Disasters: Resilience Planning for Those Systems That Societies Rely Upon eLightning

Gabriel Michael Filippelli, Indiana University Indianapolis, Department of Earth and Environmental Sciences, Indianapolis, United States, Geoffrey S Plumlee, USGS Chief Scientist, Reston, United States, Claire J. Horwell, Durham University, Department of Earth Sciences, Durham, United Kingdom and Michael C Wimberly, University of Oklahoma, Department of Geography and Environmental Sustainability, Norman, United States
*Session Proposal*

- *Monday, 9 December 2024*
- *10:20 – 11:50*

- *eLightning Theater 1 (Convention Center)*

## AE 14A
## Advances in Instrumentation and Signal and Data Processing Methods for Atmospheric Electricity Applications II Oral

Michael Stock, University of Oklahoma Norman Campus, Norman, United States, Elizabeth DiGangi, Earth Networks Inc., Research and Development, Germantown, United States and Yunjiao Pu, Duke University, Department of Electrical and Computer Engineering, Durham, NC, United States

*Session Proposal*
- *Monday, 9 December 2024*
- *16:00 – 17:30*
- *University of DC & Catholic (Marriott Marquis)*

## H11B
## Advances in Machine Learning for Earth Science: Observation, Modeling, and Applications I Oral

Guoqiang Tang, NSF National Center for Atmospheric Research, Boulder, United States, Mengye Chen, The University of Oklahoma, Center for Analysis and Prediction of Storms, Norman, United States, Yixin Wen, University of Florida, Department of Geography, Gainesville, United States and Phu Nguyen, University of California, Irvine, Department of Civil and Environmental Engineering, Irvine, United States

*Session Proposal*
- *Monday, 9 December 2024*
- *08:30 – 10:00*
- *144 A-C (Convention Center)*

## The GeoCarb Mission: Persistent Greenhouse Gas Column Observations from Geostationary Orbit over the Americas

Sean Crowell, LumenUs Scientific, Oklahoma City, United States and Berrien Moore III, University of Oklahoma, School of Meteorology, Norman, OK, United States

*Abstract*
- *Monday 9, December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

## ORANGE: An Algorithm Package for Atmospheric Remote Sensing

Feng Xu[1], Wenzhi Zhang[2], Taozhong Huang[3], Benting Chen[4], Lan Gao[5], Jens Redemann[5], Anthony B Davis[6], David J Diner[6], Marcin L Witek[6], Olga V. Kalashnikova[6], Michael A Bull[7], Michael J Garay[8], James McDuffie[7], Oleg Dubovik[9], Reed Espinosa[10] and Alexei Lyapustin[11], (1)University of Oklahoma Norman Campus, School of Meteorology, Norman, OK, United States, (2)University of Oklahoma Norman Campus, Norman, United States, (3)The University of Oklahoma, School of Meteorology, Norman, OK, United States, (4)University of Oklahoma, Norman, United States, (5)University of Oklahoma, School of Meteorology, Norman, United States, (6)Jet Propulsion Laboratory, California Institute of Technology, Pasadena, United States, (7)NASA Jet Propulsion Laboratory, Pasadena, CA, United States, (8)Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, United States, (9)University of Lille, Lille, France, (10)University of Maryland Baltimore County, Physics, Baltimore, United States, (11)NASA Goddard Space Flight Center, Greenbelt, United States

*Abstract*
- *Monday, 9 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

## AE11A
### Advances in Instrumentation and Signal and Data Processing Methods for Atmospheric Electricity Applications I Poster

Michael Stock, University of Oklahoma Norman Campus, Norman, United States, Elizabeth DiGangi, AEM, Research & Development, Germantown, United States and Yunjiao Pu, Duke University, Department of Electrical and Computer Engineering, Durham, NC, United States
*Session Proposal*

- *Monday, 9 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

## H13B
### Advances in Machine Learning for Earth Science: Observation, Modeling, and Applications III Poster

Guoqiang Tang, NSF National Center for Atmospheric Research, Boulder, United States, Mengye Chen, The University of Oklahoma, Center for Analysis and Prediction of Storms, Norman, United States, Yixin Wen, University of Florida, Department of Geography, Gainesville, United States and Phu Nguyen, University of California, Irvine, Department of Civil and Environmental Engineering, Irvine, United States
*Session Proposal*

- *Monday, 9 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

## NH13A
### Costal Hazards and Resilience Poster

Mohamed Ahmed, Texas A&M University Corpus Christi, Physical and Environmental Sciences, Corpus Christi, TX, United States, Sina Saneiyan, University of Oklahoma, School of Geosciences, Norman, OK, United States, Esayas Gebremichael, Texas Christian University, Geological Sciences, Fort Worth, TX, United States and Ramadan Abdelrehim, Texas A&M University - Corpus Christi, Department of Physical and Environmental Sciences, Corpus Christi, United States
*Session Proposal*

- *Monday, 9 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

## A13H
### Advances of Remote Sensing Inversion II Oral

Oleg Dubovik, University of Lille 1, Villeneuve d'Ascq, France, Feng Xu, University of Oklahoma, School of Meteorology, Norman, OK, United States, Reed Espinosa, NASA Goddard Space Flight Center, Greenbelt, United States and Jean-Claude Roger, University of Maryland College Park, Department of Geographical Sciences, College Park, MD, United States
*Session Proposal*

- *Monday, 9 December 2024*
- *14:10 – 15:40*
- *152 A (Convention Center)*

## H12B
### Advances in Machine Learning for Earth Science: Observation, Modeling, and Applications II Oral

Guoqiang Tang, NSF National Center for Atmospheric Research, Boulder, United States, Mengye Chen, The University of Oklahoma, Center for Analysis and Prediction of Storms, Norman, United States, Yixin Wen, University of Florida, Department of Geography, Gainesville, United States and Phu

Nguyen, University of California, Irvine, Department of Civil and Environmental Engineering, Irvine, United States
*Session Proposal*

- *Monday, 9 December 2024*
- *10:20 – 11:50*
- *144 A-C (Convention Center)*

## Health Implications of Urban Heat Islands in Tropical Cities: Differences Between Indoor and Outdoor Microenvironments

Yusuf Jamal[1], Rajendra Baharia[2], Desai Vikas[3], Vijay Kohli[4], Ajit Mohanti[5], Courtney C Murdock[6], Mercedes Pascual[7], Rajesh Sharma[4], Sachin Sharma[8], Keshav Vaishnav[9] and Michael C Wimberly[1], (1)University of Oklahoma, Department of Geography and Environmental Sustainability, Norman, United States, (2)National Institute of Malaria Research, Nadiad, India, (3)Vesu Urban Health Centre, Surat, India, (4)Ahmedabad Municipal Corporation Health Department, Ahmedabad, India, (5)National Institute of Malaria Research, Panaji, India, (6)Cornell University, Department of Entomology, Ithaca, United States, (7)New York University, New York, United States, (8)Indian Council of Medical Research-National Institute of Malaria Research, New Delhi, India, (9)Surat Municipal Corporation, Surat, India
*Abstract*

- *Monday, 9 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

## Optimizing Laboratory Measurements for Below-Ground Soil $CO_2$ Isotopes

Martha Jimenez-Castaneda[1], Janine Sparks[1], Jordan Jones[1] and Timothy R Filley[2], (1)The University of Oklahoma, Norman, United States, (2)The University of Oklahoma, Department of Geography and Environmental Sustainability, Norman, United States
*Abstract*

- *Monday, 9 December 2024*
- *08:00 – 17:30*
- *iPoster Gallery (Online)*

## Exponential or unimodal relationships between nighttime ecosystem respiration and temperature at the eddy covariance flux tower sites

Cheng Meng[1], Xiangming Xiao[2], Pradeep Wagle[3], Chenchen Zhang[4], Li Pan[5], Baihong Pan[4], Yuanwei Qin[6] and Greg Newman[1], (1)University of Oklahoma Norman Campus, School of Biological Sciences, Norman, United States, (2)University of Oklahoma Norman Campus, School of Biological Sciences, Center for Earth Observation and Modeling, Norman, United States, (3)Oklahoma and Central Plains Agricultural Research Center, USDA Agricultural Research Service, El Reno, United States, (4)School of Biological Sciences, Center for Earth Observation and Modeling, University of Oklahoma, Norman, United States, (5)University of Oklahoma, School of Biological Sciences, Norman, United States, (6)Department of Microbiology and Plant Biology, Center for Earth Observation and Modeling, University of Oklahoma, Norman, United States
*Abstract*

- *Monday, 9 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

[Investigating the Effects of Common Forward Model Errors in Aerosol Retrievals of Synergistic Lidar and Polarimeter Observations](#)

Reed Espinosa[1], Anin Puthukkudy[2,3], Greema Regmi[2], Nirandi Jayasinghe[2], Oleg Dubovik[4], Anton Lopatin[5], Pavel Lytvynov[5], Daniel J Miller[1], Adeleke Ademakinwa[2], Zhibo Zhang[6], Jose Vanderlei Martins[2,3], Kirk D Knobelspiesse[7], Feng Xu[8] and Jeffrey S. Reid[9], (1)NASA Goddard Space Flight Center, Greenbelt, United States, (2)University of Maryland Baltimore County, Department of Physics, Baltimore, United States, (3)Earth and Space Institute, Baltimore, United States, (4)Laboratoire d'Optique Atmosphérique, Villeneuve d'Ascq, France, (5)GRASP SAS, Remote Sensing Developments, Lille, France, (6)University of Maryland Baltimore County, Department of Physics, Baltimore, MD, United States, (7)NASA Goddard Space Flight Center, Greenbelt, MD, United States, (8)University of Oklahoma, School of Meteorology, Norman, OK, United States, (9)Naval Research Laboratory, Marine Meteorology Division, Monterey, United States

*Abstract*

- *Monday, 9 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

[A13H-08](#)

[MAIA Aerosol Retrieval: Algorithm Tests and Improvements](#)

Wenzhi Zhang[1], Feng Xu[2], Benting Chen[1], Taozhong Huang[3], Ethan Stroberg[1], David J Diner[4], Michael A Bull[5], James McDuffie[5], Marcin L Witek[4], Michael J Garay[6], Olga V. Kalashnikova[4] and Alexei Lyapustin[7], (1)University of Oklahoma, Norman, United States, (2)University of Oklahoma, School of Meteorology, Norman, OK, United States, (3)The University of Oklahoma, School of Meteorology, Norman, OK, United States, (4)Jet Propulsion Laboratory, California Institute of Technology, Pasadena, United States, (5)NASA Jet Propulsion Laboratory, Pasadena, CA, United States, (6)Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, United States, (7)NASA Goddard Space Flight Center, Greenbelt, United States

*Abstract*

- *Monday, 9 December 2024*
- *15:22 – 15:31*
- *152 A (Convention Center)*

[A14G-03](#)

[Synoptic Modulation on Mesoscale Convective Systems and Diurnal Cycle of Rainfall over Western Coastal West Africa](#)

Shun-Nan Wu, University of Oklahoma, Oklahoma, United States, Naoko Sakaeda, University of Oklahoma Norman Campus, School of Meteorology, Norman, United States, Elinor R Martin, University of Oklahoma, School of Meteorology, Norman, United States and Rosimar Rios-Berrios, National Center for Atmospheric Research, Boulder, CO, United States

*Abstract*

- *Monday, 9 December 2024*
- *16:06 – 16:09*
- *eLightning Theater 1 (Convention Center)*

[AE14A-03](#)

[Remote Measurements of Continuing Current Using ELF/VLF Magnetic Sensor](#)

Yanan Zhu[1], Michael Stock[2,3], Jeff Lapierre[4], Elizabeth DiGangi[5] and Jacquelyn Ringhausen[4], (1)Earth Networks Inc., Germantown, MD, United States, (2)University of Oklahoma Norman Campus, Norman, United States, (3)Cooperative Institute for Severe and High-Impact Weather Research and Operations, Norman, United States, (4)AEM, Research & Development, Germantown, United States, (5)Earth Networks Inc., Research and Development, Germantown, United States

*Abstract*

## B11C-09
### Quantifying advective flux contributions to energy budget closure at CHEESEHEAD19 study sites

Emily Mather, University of Wisconsin Madison, Madison, WI, United States, Ankur R Desai, University of Wisconsin Madison, Atmospheric and Oceanic Sciences, Madison, WI, United States, Stefan Metzger, Battelle, National Ecological Observatory Network, Boulder, United States, Sreenath Paleri, Cooperative Institute for Severe and High-Impact Weather Research and Operations, University of Oklahoma and NOAA Air Resources Laboratory, Boulder, United States and Brian Butterworth, NOAA Boulder, Boulder, United States

*Abstract*

- *Monday, 9 December 2024*
- *09:50 – 10:00*
- *150 B (Convention Center)*

## H14D-08
### Evapotranspiration in Rainfed and Irrigated Alfalfa in the U.S. Southern Great Plains

Pradeep Wagle[1], Afshin Shayeghi[2], Nishan Bhattarai[2], Brian K Northup[3], Corey Moffet[4], Stacey Gunter[5] and Rudra Baral[6], (1)USDA, USDA-ARS, El Reno, OK, United States, (2)University of Oklahoma, Department of Geography and Environmental Sustainability, Norman, United States, (3)USDA-ARS, El Reno, OK, United States, (4)USDA-ARS, Southern Plains Range Research Station, Woodward, OK, United States, (5)USDA-ARS, Woodward, OK, United States, (6)University of Missouri Columbia, Columbia, United States

*Abstract*

- *Monday, 9 December 2024*
- *17:10 – 17:20*
- *143 A-C (Convention Center)*

## V11A-03
### Recurrence Rates of Explosive Volcanism in Paleo-equatorial Pangaea and the Effects of Volcanic Ash Loading on Biogeochemical Cycling Near the Peak of the Late Paleozoic Icehouse

Lily Pfeifer, Rowan University, Glassboro, NJ, United States, Qingting Wu, Montclair State University, Department of Earth and Environmental Science, Montclair, United States, Ying Cui, Montclair State University, Department of Earth and Environmental Studies, Montclair, NJ, United States, Jahandar Ramezani, MIT-EAPS, Cambridge, MA, United States, Michael J Soreghan, University of Oklahoma Norman Campus, School of Geosciences, Norman, United States, Jean Van Den Driessche, Géosciences Rennes, Rennes Cedex, France, Stephane Pochat, Laboratoire de Planétologie et Géodynamique, Nantes, France and Gerilyn S Soreghan, Univ of Oklahoma, Norman, United States

Abstract

- Monday, 9 December 2024
- 08:50 – 09:00
- 207 A (Convention Center)

## PANGEA: A Pan-Tropical Airborne and Field Campaign for a Resilient World

Isaac Aguilar[1,2], Elsa Ordway[2], Ane Alencar[3], Adia Bey[4], Anabelle Cardoso[5], Dana Chadwick[6], Antonio Ferraz[7], Yanlei Feng[8], Jose D Fuentes[9], Tamilola Fatoyinbo[4], Liane S Guild[10], Matthew S Johnson[10], Michael Keller[7,11], Lydie Stella Koutika[12], Yue Li[13], Junjie Liu[7], Marcos Longo[14], Ian Mccubbin[7], Félicien Meunier[15], Charles E Miller[7], Helene C Muller-Landau[16], Patrick Namulisa[17], Robinson I Negron Juarez[18], Teodyl Nkuintchua[19], Matheus Nunes[20], Zoe Pierrat[7], Le Bienfaiteur Sagang Takougoum[13], Maria J Santos[21], Fabian D Schneider[7], Bonaventure Sonké[22], Hannah Stouter[13], César Terrer[8], Marius

von Essen[13], Sarah R Worden[13], Michelle Wong[23] and Xiangming Xiao[24], (1)California Institute of Technology, Pasadena, United States, (2)University of California Los Angeles, Los Angeles, CA, United States, (3)IPAM Amazon Environmental Research Institute, Brasilia, Brazil, (4)NASA Goddard Space Flight Center, Greenbelt, United States, (5)University at Buffalo, Geography, Buffalo, United States, (6)Jet Propulsion Laboratory, California Institute of Technology, Pasadena, United States, (7)JPL/NASA/Caltech, Pasadena, United States, (8)Massachusetts Institute of Technology, Cambridge, United States, (9)Penn State University, University Park, United States, (10)NASA Ames Research Center, Moffett Field, United States, (11)USDA Forest Service, Rio Piedras, United States, (12)CRDPI, Pointe-Noire, People's Republic Of Congo, (13)University of California Los Angeles, Los Angeles, United States, (14)Lawrence Berkeley National Laboratory, Berkeley, United States, (15)Ghent University, Gent, Belgium, (16)Smithsonian Tropical Research Institute, Balboa, Panama, (17)Columbia University of New York, Palisades, United States, (18)Lawrence Berkeley National Laboratory, Berkeley, CA, United States, (19)World Resources Institute, Kinshasa, Congo, (20)University of Maryland College Park, College Park, United States, (21)University of Zurich, Zurich, Switzerland, (22)University of Yaoundé, Yaoundé, Cameroon, (23)Yale University, New Haven, United States, (24)University of Oklahoma, Norman, OK, United States
*Abstract*

- *Monday, 9 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

TASZERS Findings Energize ARM Cloud Retrievals
Connor J. Flynn, University of Oklahoma Norman Campus, Norman, United States, Stephen H Jones, Aerodyne Research Inc., Billerica, MA, United States, Zachary Payne, Aerodyne Research, Inc., Billerica, United States and Timothy Bruce Onasch, Aerodyne Research, Inc., Billerica, MA, United States
Abstract

- Monday, 9 December 2024
- 08:00 – 17:30
- iPoster Gallery (Online)

Object-based Field Level Mapping of Irrigated Land across the US
Yashar Makhtoumi, University of Wisconsin Madison, Madison, WI, United States, Tyler J Lark, University of Wisconsin - Madison, Center for Sustainability and the Global Environment (SAGE), Nelson Institute for Environmental Studies, Madison, WI, United States and Yanhua Xie, University of Oklahoma, Geography and Environmental Sustainability, Norman, United States
*Abstract*

- *Monday, 9 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

Strengthening the Connection of Reference Standards and Ground-based Atmospheric Total Column Validation Networks
Annmarie Eldering[1], Elizabeth Spicer[2], Debra Wunch[3], Geoffrey C Toon[4], Joshua Laughner[5], Frank Hase[6], Darko Dubravica[6] and Mahesh Kumar Sha[7], (1)National Institute of Standards and Technology Gaithersburg, Gaithersburg, MD, United States, (2)University of Oklahoma, School of Meteorology, Norman, United States, (3)University of Toronto, Department of Physics, Toronto, ON, Canada, (4)NASA Jet Propulsion Laboratory, Pasadena, CA, United States, (5)NASA Jet Propulsion Laboratory, Pasadena, United States, (6)Karlsruhe Institute of Technology, Institute of Meteorology and Climate Research (IMK-ASF), Karlsruhe, Germany, (7)Belgisch Instituut voor Ruimte-Aeronomie, Brussel, Belgium
*Abstract*

- *Monday, 9 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

A14C
Advances of Remote Sensing Inversion III Oral

Oleg Dubovik, University of Lille 1, Villeneuve d'Ascq, France, Feng Xu, University of Oklahoma, School of Meteorology, Norman, OK, United States, Reed Espinosa, NASA Goddard Space Flight Center, Greenbelt, United States and Jean-Claude Roger, University of Maryland College Park, Department of Geographical Sciences, College Park, MD, United States
*Session Proposal*
- *Monday, 9 December 2024*
- *16:00 – 17:30*
- *152 A (Convention Center)*

Assessing the Global Variability in Wildfire Aerosol and Black Carbon Using AERONET and MERRA-2

Abdulamid Fakoya[1], Logan T Mitchell[1], Jeffrey Lee[1], Lan Gao[1], Ian Chang[2], Connor J. Flynn[1], Marcela Loría-Salazar[1] and Jens Redemann[1], (1)University of Oklahoma, School of Meteorology, Norman, United States, (2)University of North Carolina at Charlotte, Earth, Environmental, and Geographical Sciences, Charlotte, NC, United States
*Abstract*
- *Monday, 9 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

Closure of Aerosol Radiative Properties from ORACLES 4STAR and In Situ Measurements – Implications for AERONET QC Requirements

Logan T Mitchell[1], Connor J. Flynn[1], Jens Redemann[1], Kristina Pistone[2,3] and Samuel LeBlanc[2,3], (1)University of Oklahoma, School of Meteorology, Norman, United States, (2)NASA Ames Research Center, Moffett Field, United States, (3)Bay Area Environmental Research Institute, Moffett Field, United States
*Abstract*
- *Monday, 9 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

Seasonality and Diurnality in Carbon Fluxes Across Climate Gradients Inferred from Eddy Covariance Flux Tower Networks and Geostationary Satellite Observations

Taejin Park[1], Hirofumi Hashimoto[1], Weile Wang[2], Xiangming Xiao[3], Rodrigo Vargas[4] and Ian G Brosnan[5], (1)NASA Ames Research Center, Moffett Field, CA, United States, (2)NASA/AMES Research Center, Moffett Field, United States, (3)University of Oklahoma Norman Campus, School of Biological Sciences, Center for Earth Observation and Modeling, Norman, United States, (4)University of Delaware, Plant and Soil Sciences, Newark, DE, United States, (5)NASA Ames Research Center, Earth Science Division, Moffett Field, CA, United States
*Abstract*
- *Monday, 9 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

[Machine Learning for Earthquake Detection and Analysis: Improving the Accuracy and Completeness of the Hispaniola Seismic Catalog](#)

Luis F Muñoz Santos[1,2], Jacob I Walter[3], Jay Pulliam[2], Jottin Leonel[4] and Eugenio Polanco[4], (1)University of Oklahoma, School of Geoscience, Norman, United States, (2)Baylor University, Department of Geosciences, Waco, United States, (3)University of Oklahoma, Oklahoma Geological Survey, Norman, United States, (4)Universidad Autónoma de Santo Domingo, National Center for Seismology, Santo Domingo, Dominican Republic
*Abstract*

- *Monday, 9 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

[Investigation of Smoke Aerosol Optical Properties from Long-range Transport Sources to the Southern Great Plains United States (2012-2023)](#)

Hayden Webb, Kyle Eskew, Connor J. Flynn and Marcela Loría-Salazar, University of Oklahoma, School of Meteorology, Norman, United States
*Abstract*

- *Monday, 9 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

[A Novel Classification for Slow Antenna Waveforms](#)

Cooper Gray[1], Eric C Bruning[1], Dr. Kelcy N Brunner[1], David Singewald[2], Shravani Koli[2], Vanna Chmielewski[3] and Michael Stock[4], (1)Texas Tech University, Lubbock, TX, United States, (2)Texas Tech University, Lubbock, United States, (3)NOAA / OAR / National Severe Storms Laboratory, Norman, United States, (4)Cooperative Institute for Severe and High-Impact Weather Research and Operations, Norman, United States
*Abstract*

- *Monday, 9 December 2024*
- *08:30 -12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

[A14G-03](#)
[Synoptic Modulation on Mesoscale Convective Systems and Diurnal Cycle of Rainfall over Western Coastal West Africa](#)

Shun-Nan Wu, University of Oklahoma, Oklahoma, United States, Naoko Sakaeda, University of Oklahoma Norman Campus, School of Meteorology, Norman, United States, Elinor R Martin, University of Oklahoma, School of Meteorology, Norman, United States and Rosimar Rios-Berrios, National Center for Atmospheric Research, Boulder, CO, United States
*Abstract*

- *Monday, 9 December 2024*
- *16:06 – 16:09*
- *eLightning Theater 1 (Convention Center)*

[AE 14A-03](#)
[Remote Measurements of Continuing Current Using ELF/VLF Magnetic Sensor](#)

Yanan Zhu[1], Michael Stock[2,3], Jeff Lapierre[4], Elizabeth DiGangi[5] and Jacquelyn Ringhausen[4], (1)Earth Networks Inc., Germantown, MD, United States, (2)University of Oklahoma Norman Campus, Norman, United States, (3)Cooperative Institute for Severe and High-Impact Weather Research and Operations, Norman, United States, (4)AEM, Research & Development, Germantown, United States, (5)Earth Networks Inc., Research and Development, Germantown, United States
*Abstract*

- *Monday, 9 December 2024*
- *16:20 – 16:30*
- *University of DC & Catholic (Marriot Marquis)*

## H14D-08
## Evapotranspiration in Rainfed and Irrigated Alfalfa in the U.S. Southern Great Plains

Pradeep Wagle[1], Afshin Shayeghi[2], Nishan Bhattarai[2], Brian K Northup[3], Corey Moffet[4], Stacey Gunter[5] and Rudra Baral[6], (1)USDA, USDA-ARS, El Reno, OK, United States, (2)University of Oklahoma, Department of Geography and Environmental Sustainability, Norman, United States, (3)USDA-ARS, El Reno, OK, United States, (4)USDA-ARS, Southern Plains Range Research Station, Woodward, OK, United States, (5)USDA-ARS, Woodward, OK, United States, (6)University of Missouri Columbia, Columbia, United States
*Abstract*

- *Monday, 9 December 2024*
- *17:10 – 17:20*
- *143 A-C (Convention Center)*

## A13H-08
## MAIA Aerosol Retrieval: Algorithm Tests and Improvements

Wenzhi Zhang[1], Feng Xu[2], Benting Chen[1], Taozhong Huang[3], Ethan Stroberg[1], David J Diner[4], Michael A Bull[5], James McDuffie[5], Marcin L Witek[4], Michael J Garay[6], Olga V. Kalashnikova[4] and Alexei Lyapustin[7], (1)University of Oklahoma, Norman, United States, (2)University of Oklahoma, School of Meteorology, Norman, OK, United States, (3)The University of Oklahoma, School of Meteorology, Norman, OK, United States, (4)Jet Propulsion Laboratory, California Institute of Technology, Pasadena, United States, (5)NASA Jet Propulsion Laboratory, Pasadena, CA, United States, (6)Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, United States, (7)NASA Goddard Space Flight Center, Greenbelt, United States
*Abstract*

- *Monday, 9 December 2024*
- *15:22 – 15:31*
- *152 A (Convention Center)*

## The Observed Effects of Cold Pools on Convection Triggering and Organization During DYNAMO/AMIE

Naoko Sakaeda, University of Oklahoma Norman Campus, Norman, OK, United States and Giuseppe Torri, University of Hawaiʻi at Mānoa, Atmospheric Sciences, Honolulu, United States
*Abstract*

- *Monday, 9 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

## Investigating the Effects of Common Forward Model Errors in Aerosol Retrievals of Synergistic Lidar and Polarimeter Observations

Reed Espinosa[1], Anin Puthukkudy[2,3], Greema Regmi[2], Nirandi Jayasinghe[2], Oleg Dubovik[4], Anton Lopatin[5], Pavel Lytvynov[5], Daniel J Miller[1], Adeleke Ademakinwa[2], Zhibo Zhang[6], Jose Vanderlei Martins[2,3], Kirk D Knobelspiesse[7], Feng Xu[8] and Jeffrey S. Reid[9], (1)NASA Goddard Space Flight Center, Greenbelt, United States, (2)University of Maryland Baltimore County, Department of Physics, Baltimore, United States, (3)Earth and Space Institute, Baltimore, United States, (4)Laboratoire d'Optique Atmosphérique, Villeneuve d'Ascq, France, (5)GRASP SAS, Remote Sensing Developments, Lille, France, (6)University of Maryland Baltimore County, Department of Physics, Baltimore, MD, United States, (7)NASA Goddard Space Flight Center, Greenbelt, MD, United States, (8)University of Oklahoma, School of Meteorology, Norman, OK, United States, (9)Naval Research Laboratory, Marine Meteorology Division, Monterey, United States

*Abstract*
- *Monday, 9 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

Leveraging Computer Vision Algorithms for Enhanced Data Quality Control at the Atmospheric Radiation Measurement (ARM) User Facility

Mia Li, University of Oklahoma, Norman, Oklahoma, UNITED STATES

*Abstract*
- *Monday, 9 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

The impact of Anthropause During COVID-19 on the Activity of Avian Influenza Host Birds

Qiang Zhang[1,2], Jinwei Dong[1] and Xiangming Xiao[3], (1)Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, Beijing, China, (2)University of Chinese Academy of Sciences, Beijing, China, (3)University of Oklahoma Norman Campus, School of Biological Sciences, Center for Earth Observation and Modeling, Norman, United States

*Abstract*
- *Monday, 9 December 2024*
- *08:00 – 17:30*
- *iPoster Gallery (Online)*

B12C-05

An improved stable boundary layer filtering protocol for eddy covariance towers based on wind speed and net radiation.

Greg Newman, University of Oklahoma Norman Campus, School of Biological Sciences, Norman, United States, Xiangming Xiao, University of Oklahoma Norman Campus, School of Biological Sciences, Center for Earth Observation and Modeling, Norman, United States and Otavio Acevedo, University of Oklahoma Norman Campus, School of Meteorology, Norman, United States

*Abstract*
- *Monday, 9 December 2024*
- *11:00 – 11:10*
- *150 B (Convention Center)*

H14F-08

Integrating headwater stream network expansion-contraction dynamics into hydro-biogeochemical predictions

Alex Webster[1], Manuela Londono[2], Jazzmyn Luna[3], William Mejía[3], Joanna Blaszczak[4], Dre Presswood[4], Mengye Chen[5], Yang Hong[6], Arial J. Shogren[7], Andrew Ali[7], Shannon Speir[8], Kathleen Cutting[8], Alana Strauss[8], Adam S Wymore[9] and Juan Pesantez[9], (1)University of New Mexico, Department of Biology, Albuquerque, United States, (2)University of New Mexico Main Campus, Biology, Albuquerque, United States, (3)University of New Mexico Main Campus, Albuquerque, United States, (4)University of Nevada Reno, Department of Natural Resources & Environmental Science, Reno, United States, (5)The University of Oklahoma, Center for Analysis and Prediction of Storms, Norman, United States, (6)University of Oklahoma, School of Civil Engineering and Environmental Science, Norman, United States, (7)University of Alabama, Department of Biological Sciences, Tuscaloosa, United States, (8)University of Arkansas, Fayetteville, United States, (9)University of New Hampshire, Department of Natural Resources and the Environment, Durham, United States

*Abstract*
- *Monday, 9 December 2024*

- *17:15 – 17:25*
- *103 A-B (Convention Center)*

## Decoding global cooling signal in primary productivity records in the western Arabian Sea

Guangsheng Zhuang[1], Xiao-Lei Liu[2], Junpeng Fu[2] and Dailun Wang[1], (1)Louisiana State University, Department of Geology & Geophysics, Baton Rouge, LA, United States, (2)University of Oklahoma, School of Geosciences, Norman, United States

*Abstract*

- *Monday, 9 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

## Time-Frequency Analysis of GPS Displacements for Monitoring Changes in Aquifers and Geothermal Fields in California

Jacqueline SIlva[1], Jose Viteri Lopez[2] and Junle Jiang[2], (1)University of Texas at El Paso, El Paso, TX, United States, (2)University of Oklahoma Norman Campus, School of Geosciences, Norman, United States

*Abstract*

- *Monday, 9 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

## H14H-01
## A Diagnosis of IMERG-GMI Oceanic Precipitation

Daniel Watters[1], George John Huffman[2], Patrick N Gatlin[3], Pierre-Emmanuel Kirstetter[4,5], David T Bolvin[6,7], Robert Joyce[6,7], Eric Nelkin[6,7], Jackson Tan[2,8] and David B Wolff[9], (1)University of Oklahoma Norman Campus, Advanced Radar Research Center, Norman, United States, (2)NASA Goddard Space Flight Center, Greenbelt, MD, United States, (3)NASA Marshall Space Flight Center, Huntsville, AL, United States, (4)University of Oklahoma, School of Meteorology and School of Civil Engineering and Environmental Science, Norman, United States, (5)NOAA/National Severe Storms Laboratory, Norman, United States, (6)Science Systems and Applications, Inc., Lanham, United States, (7)NASA Goddard Space Flight Center, Greenbelt, United States, (8)University of Maryland Baltimore County, Baltimore, United States, (9)NASA GSFC/WFF Code 610.W, Wallops Island, United States

*Abstract*

- *Monday, 9 December 2024*
- *16:00 – 16:10*
- *147 A (Convention Center)*

## SY12B-02
## Enhancing Severe Weather Risk Communications with Artificial Intelligence

Adam Clark[1], David Harrison[2], Thea Sandmael[2], Kristin M Calhoun[3], Eric Loken[2], Michael Hosek[4], Aaron Hill[5], Kimbertly A. Hoogewind[6], Montgomery Flora[7], Corey Potvin[8] and Israel L Jirak[9], (1)NOAA/OAR/National Severe Storms Laboratory, Norman, OK, Norman, OK, United States, (2)Cooperative Institute for Severe and High Impact Weather Research and Operations, Norman, United States, (3)University of Oklahoma Norman Campus, Cooperative Institute for Mesoscale Meteorological Studies, Norman, United States, (4)School of Meteorology, University of Oklahoma, Norman, United States, (5)Texas Tech University, Lubbock, United States, (6)OU CIWRO and NSSL, Norman, United States, (7)University of Oklahoma, School of Meteorology, Norman, OK, United States, (8)NOAA / OAR / National Severe Storms Laboratory, Norman, OK, United States, (9)NOAA/NWS/Storm Prediction Center, Norman, OK, United States

*Abstract*

- *Monday, 9 December 2024*

## Tuesday, December 10, 2024

[Examination of Meteorological Factors and Emissions Sources Leading to the Large Methane (CH4) Enhancements at the ARM Site in Oklahoma](#)

Qingyu Wang[1], Xiao-Ming Hu[2], Petra Maria Klein[3], Binbin Weng[4], Ming Xue[5], Wesley Honeycutt[4], Sean Crowell[6] and Chenghao Wang[7], (1)University of Oklahoma Norman Campus, Norman, OK, United States, (2)University of Oklahoma Norman Campus, Center for Analysis and Prediction of Storms, Norman, OK, United States, (3)University of Oklahoma, School of Meteorology, Norman, United States, (4)Univ. Oklahoma, Norman, United States, (5)University of Oklahoma, Center for Analysis and Prediction of Storms, Norman, United States, (6)LumenUs Scientific, Oklahoma City, United States, (7)University of Oklahoma, School of Meteorology; Department of Geography and Environmental Sustainability, Norman, OK, United States
*Abstract*

- *Tuesday, 10 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

[AE23A](#)
[Advancements in Lightning Meteorology, Climatology, and Remote Sensing I Poster](#)

Dr. Kelcy N Brunner[1], Sarah D Bang[2], Timothy J Lang[2] and Sarah M. Stough[3], (1)Texas Tech University, Lubbock, TX, United States(2)NASA Marshall Space Flight Center, Huntsville, United States(3)University of Oklahoma, Cooperative Institute for Severe and High-Impact Weather Research and Operations, Norman, United States
*Session Proposal*

- *Tuesday, 10 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

[H21P](#)
[Evapotranspiration Partitioning to Enhance Understanding of Ecosystem Functioning and Climate Change Impacts I Poster](#)

Nishan Bhattarai[1], Pradeep Wagle[2] and Afshin Shayeghi[1], (1)University of Oklahoma, Department of Geography and Environmental Sustainability, Norman, United States(2)Oklahoma and Central Plains Agricultural Research Center, USDA Agricultural Research Service, EI Reno, United States
*Session Proposal*

- *Tuesday, 10 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

[Advancing International Research Partnerships in Peru – Leveraging Research Networks and Innovative Funding Models to Promote in-Country Research Capacity](#)

Timothy R Filley, The University of Oklahoma, Department of Geography and Environmental Sustainability, Norman, United States, Victor Maqque, University of Oklahoma Norman Campus, Institute for Resilient Environmental and Energy Systems, Norman, United States, Henry Gustavo Polanco Cornejo, Universidad Nacional de San Agustín, Arequipa, Peru, Paul M Santi, Colorado School of Mines, Geology and Geological Engineering, Golden, CO, United States, Daniel Salas, Purdue University, School of Engineering Technology, West Lafayette, United States and Lori Hoagland, Purdue University, Horticulture, West Lafayette, United States
*Abstract*

- *Tuesday, 10 December 2024*

- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

## Moisture Transport Dynamics within the Convective Boundary Layer: Insights from the Southern Great Plains ARM Site

Leia M. Otterstatter, Brian R Greene and Scott Salesky, University of Oklahoma, School of Meteorology, Norman, United States
*Abstract*

- *Tuesday, 10 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

## S23F-04
## Benchmarking Transfer Learning for Enhanced Detection and Monitoring of Induced Earthquakes from Regional and Microseismic Arrays

Hongyu Xiao, University of Oklahoma, Norman,OK, United States, Jacob I Walter, University of Oklahoma, Oklahoma Geological Survey, Norman, United States and Paul Ogwari, University of Oklahoma, Oklahoma Geological Survey, Norman, OK, United States
*Abstract*

- *Tuesday, 10 December 2024*
- *14:19 – 14:22*
- *eLightning Theater 5 (Convention Center)*

## Mapping Evapotranspiration to Assess the Effectiveness of Sustainable Land Management Practices in the South Central US

Nishan Bhattarai[1], Afshin Shayeghi[1], Pradeep Wagle[2], Sean Alexander Woznicki[3], Jayash Paudel[4], Sumit Sharma[5] and Xiangming Xiao[6], (1)University of Oklahoma, Department of Geography and Environmental Sustainability, Norman, United States, (2)USDA-ARS, Grazinglands Research Laboratory, El Reno, United States, (3)Grand Valley State University, Annis Water Resources Institute, Allendale, United States, (4)University of Oklahoma Norman Campus, Norman, United States, (5)Oklahoma State University, Stillwater, United States, (6)University of Oklahoma Norman Campus, School of Biological Sciences, Center for Earth Observation and Modeling, Norman, United States
*Abstract*

- *Tuesday, 10 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

## Implementation of a Soil Health Assessment Program in the Peruvian Amazon

Carmen Roman Perez, The University of Oklahoma, Norman, United States, Washington, DC, United States, Martha Jimenez-Castaneda, The University of Oklahoma, Norman, United States, Yuri Arevalo Aranda, Instituto Nacional de Innovación Agraria, Tarapoto, Peru, Julio Alegre, Universidad Nacional Agraria La Molina, Lima, Peru, Victor Maqque, The University of Oklahoma, Norman, United States Brad Illston, University of Oklahoma, Oklahoma Mesonet, Norman, United States and Timothy R Filley, The University of Oklahoma, Department of Geography and Environmental Sustainability, Norman, United States
*Abstract*

- *Tuesday, 10 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

## Influence of forest residue management on soil health indicators in *Eucalyptus* plantations

Antonio Florentino, Dr.[1,2], Pedro Chudzik[2,3], Jose Leonado de Moraes Gonçalves[4], Timothy R Filley[2] and José Lavres[1], (1)University of São Paulo, Center for Nuclear Energy in Agriculture, Piracicaba, Brazil, (2)The University of Oklahoma, Department of Geography and Environmental Sustainability, Norman, United States, (3)University of São Paulo, Department of Soil Science, College of Agriculture "Luiz de Queiroz", Piracicaba, Brazil, (4)University of São Paulo, Department of Forest Sciences, College of Agriculture "Luiz de Queiroz", Piracicaba, Brazil
*Abstract*

- *Tuesday, 10 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

## Agricultural Land Use Impacts On Soil Porewater Geochemistry And Connectivity In The Midwestern U.S.

Ashlee Laura Denton Dere[1], Brian Saccardi[2], Jennifer L Druhan[3], Jinyu WANG[4], Neal Edward Blair[5], Lisa R Welp[6], Kelly M. Deuerling[7], Timothy R Filley[8], Martha Jimenez-Castaneda[9], Sean M Schaeffer[10], Isaac Noel[11], Andrew Stumpf[12], Erin Bauer[13], James Haken[13], Allison Eva Goodwell[2], Alison M Anders[14] and Praveen Kumar[15], (1)University of Nebraska at Omaha, Geography/Geology, Omaha, NE, United States, (2)Prairie Research Institute at University of Illinois at Urbana-Champaign, Champaign, United States, (3)University of Illinois, Urbana Champaign, United States, (4)University of Illinois at Urbana-Champaign, Urbana, United States, (5)Northwestern University, Evanston, United States, (6)Purdue University, Department of Earth, Atmospheric, and Planetary Sciences, West Lafayette, IN, United States, (7)University of Nebraska at Omaha, Omaha, United States, (8)The University of Oklahoma, Department of Geography and Environmental Sustainability, Norman, United States, (9)University of Oklahoma, Norman, United States, (10)University of Tennessee, Biosystems Engineering and Soil Science, Knoxville, TN, United States, (11)University of Nebraska at Omaha, Biology, Omaha, United States, (12)Illinois State Geological Survey, Champaign, IL, United States, (13)Illinois State Water Survey, Champaign, United States, (14)University of Illinois at Urbana Champaign, Geology, Urbana, IL, United States, (15)University of Illinois at Urbana-Champaign, Department of Civil and Environmental Engineering, Urbana, United States
*Abstract*

- *Tuesday, 10 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

## $CO_2$ Flux Biases and Error Estimation Across Sampling Frequency at Daily, Seasonal, and Annual Scales.

Brian Saccardi[1], Ashlee Laura Denton Dere[2], Allison Eva Goodwell[1], Jennifer L Druhan[3], Erin Bauer[4], Jinyu WANG[5], James Haken[4], Andrew Stumpf[6], Steve Sargent[7], Timothy R Filley[8], Lisa R Welp[9], Martha Jimenez-Castaneda[10], Neal Edward Blair[11], Bruce L Rhoads[12] and Praveen Kumar[13], (1)Prairie Research Institute at University of Illinois at Urbana-Champaign, Champaign, United States, (2)University of Nebraska at Omaha, Geography/Geology, Omaha, NE, United States, (3)University of Illinois, Urbana Champaign, United States, (4)Illinois State Water Survey, Champaign, United States, (5)University of Illinois at Urbana-Champaign, Urbana, United States, (6)Illinois State Geological Survey, Champaign, IL, United States, (7)Illinois State Geological Survey, Champaign, United States, (8)The University of Oklahoma, Department of Geography and Environmental Sustainability, Norman, United States, (9)Purdue University, Department of Earth, Atmospheric, and Planetary Sciences, West Lafayette, IN, United States, (10)University of Oklahoma, Norman, United States, (11)Northwestern University, Evanston, United States, (12)University of Illinois Urbana-Champaign, Department of Geography & Geographic Information Science, Urbana, United States, (13)University of Illinois at Urbana-Champaign, Department of Civil and Environmental Engineering, Urbana, United States
*Abstract*

- *Tuesday, 10 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

GC22B-08

Increasing Frequency and Precipitation Intensity of Convective Storms in the Peruvian Central Andes: Projections from Convection Permitting Regional Climate Simulations

Dr. Yongjie Huang, PhD[1], Ming Xue[2], Xiao-Ming Hu[3], Elinor R Martin[4], Hector Novoa[5], Renee A McPherson[6], Changhai Liu[7], Mengye Chen[8], Yang Hong[9], Andres Vitaliano Perez Pachari[5], Isaac Yanqui Morales[5], José Luis Ticona[10] and Auria Julieta Flores Luna[5], (1)University of Oklahoma Norman Campus, Center for Analysis and Prediction of Storms (CAPS), Norman, United States, (2)University of Oklahoma, Center for Analysis and Prediction of Storms, Norman, United States, (3)University of Oklahoma Norman Campus, Center for Analysis and Prediction of Storms, Norman, OK, United States, (4)University of Oklahoma, School of Meteorology, Norman, United States, (5)Universidad Nacional de San Agustín de Arequipa, Arequipa, Peru, (6)University of Oklahoma, South Central Climate Adaption Science Center, Norman, United States, (7)National Center for Atmospheric Research, Boulder, United States, (8)The University of Oklahoma, Center for Analysis and Prediction of Storms, Norman, United States, (9)University of Oklahoma, School of Civil Engineering and Environmental Science, Norman, United States, (10)Servicio Nacional de Meteorología e Hidrología del Perú, Arequipa, Peru

*Abstract*

- *Tuesday, 10 December 2024*
- *11:30 – 11:40*
- *Salon C (Convention Center)*

GC24G-08

Recent dust trends and extremes associated with land use management and jet stream dynamics over Northern Eurasia

Xin Xi, Michigan Technological University, Houghton, MI, United States, Xinzhu Li, Michigan Technological University, Houghton, United States, Daniel Steinfeld, GVZ Gebäudeversicherung Kanton Zürich, Zürich, Switzerland, Steven M Cavallo, University of Oklahoma Norman Campus, Norman, OK, United States, Jun Wang, the University of Iowa, Iowa City, United States, Jiquan Chen, Michigan State University, Geography, Environment and Spatial Sciences, East Lansing, United States, Kanat Zulpykharov, Al-Farabi Kazakh National University, Almaty, Kazakhstan and Geoffrey M Henebry, Michigan State University, Department of Geography, Environment, and Spatial Sciences & Center for Global Change and Earth Observations, East Lansing, United States

*Abstract*

- *Tuesday, 10 December 2024*
- *17:10 – 17:20*
- *140 A-B (Convention Center)*

Observation and Simulation of Methane ($CH_4$) Plumes during the Morning Boundary Layer Transition

Xiao-Ming Hu[1], Wesley Honeycutt[2], Chenghao Wang[2], Binbin Weng[2] and Ming Xue[3], (1)University of Oklahoma Norman Campus, Center for Analysis and Prediction of Storms, Norman, OK, United States, (2)Univ. Oklahoma, Norman, United States, (3)University of Oklahoma, Center for Analysis and Prediction of Storms, Norman, United States

*Abstract*

- *Tuesday, 10 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

EP24B-06

[Force-Chain Dynamics Imaged in an Experimental Granular Pile, with Implications for Landslide and Creep Processes](#)

Nicholas W Hayman, University of Oklahoma, Oklahoma Geological Survey, Norman, United States and Benjamin Allen, University of Oklahoma Norman Campus, Oklahoma Geological Survey, Norman, United States
*Abstract*

- *Tuesday, 10 December 2024*
- *16:50 – 16:58*
- *146 C (Convention Center)*

[GC24I-07](#)
[Using Logistic Regression-Cellular Automata to Project Future Sites for Commercial Wind Energy Development](#)

Joshua Wimhurst and John Scott Greene, University of Oklahoma Norman Campus, Department of Geography and Environmental Sustainability, Norman, United States
*Abstract*

- *Tuesday, 10 December 2024*
- *17:05 – 17:15*
- *143 A-C (Convention Center)*

[PP23E-05](#)
[High-resolution μ-XRF records of Common Era environmental and limnological change from central Lake Tanganyika, eastern Africa](#)

Leandro Domingos Luz, University of Minnesota Twin Cities, Continental Scientific Drilling Facility, Minneapolis, United States, Michael M McGlue, University of Kentucky, Earth and Environmental Sciences, Lexington, United States and Michael J Soreghan, University of Oklahoma Norman Campus, School of Geosciences, Norman, United States
*Abstract*

- *Tuesday, 10 December 2024*
- *15:10 – 15:25*
- *101 (Convention Center)*

[Mountain-facilitated downward transport of volcano plumes exacerbates air pollution over Arequipa, Peru](#)

Xiao-Ming Hu, Univ. Oklahoma, Norman, United States, Ming Xue, University of Oklahoma, Center for Analysis and Prediction of Storms, Norman, United States, Tingting Qian, CAMS Chinese Academy of Meteorological Sciences, Beijing, China, Hector Novoa, Universidad Nacional de San Agustín de Arequipa, Arequipa, Peru, Jose Ticona, Servicio Nacional de Meteorología e Hidrología del Perú, Arequipa, Peru, Lan Gao, University of Oklahoma, School of Meteorology, Norman, United States, Xingliang Li, Earth System Modeling and Prediction Center, China Meteorological Administration, Beijing, China and Adriana Larrea Valdivia, Universidad Nacional San Agustin de Arequipa, Chemistry, Arequipa, Peru
*Abstract*

- *Tuesday, 10 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

[Progressive Fracture Propagation and Seismic Response in Laboratory Hydraulic Fracturing Experiments](#)

Zhi Ye, South Dakota School of Mines and Technology, Rapid City, SD, United States and Ahmad Ghassemi, University of Oklahoma Norman Campus, Mewbourne College of Petroleum and Geological Engineering, Norman, OK, United States

*Abstract*
- *Tuesday, 10 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

[SWIPe: A Surface-Water Index of Performance and Its Relation to Atmospheric Water Supply and Demand in the Upper Missouri River Basin (1989-2021)](#)

Patrick M. Wurster, U.S. Geological Survey, Wyoming-Montana Water Science Center, Missoula, United States, Roy R Sando, USGS Wyoming-Montana Water Science Center, Helena, United States, John W. Jones, U.S. Geological Survey, Kearneysville, WV, United States, Anteneh Sarbanes, Hydrologic Remote Sensing Branch, Baltimore, MD, United States, Lindsay Thurman, USGS Northwest Climate Adaptation Science, Amherst, United States, Kyle I. McLean, USGS Northern Prairie Wildlife Research Center, Jamestown, ND, United States, Laura G Labriola, University of Oklahoma Norman Campus, Civil Engineering and Environmental Science, Norman, OK, United States, Toby Welborn, U.S. Geological Survey, Carson City, United States and Ryan McShane, USGS Wyoming-Montana Water Science Center, Cheyenne, WY, United States

*Abstract*
- *Tuesday, 10 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

[Practical Insights Derived from the 2023 Mw6.6 Earthquake in Puna Island, Ecuador](#)

Stephen Hernandez[1], Jose Viteri Lopez[2], Juan Gabriel Barros Lopez[3] and Michel Toro[1], (1)Geophysics Institute National Polytechnic School Ecuador, Quito, Ecuador, (2)University of Oklahoma Norman Campus, School of Geosciences, Norman, United States, (3)Universidad Internacional Del Ecuador, Quito, Ecuador

*Abstract*
- *Tuesday, 10 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

[Optimizing Laboratory Measurements for Below-Ground Soil $CO_2$ Isotopes](#)

Martha Jimenez-Castaneda[1], Janine Sparks[1], Jordan Jones[1] and Timothy R Filley[2], (1)The University of Oklahoma, Norman, United States, (2)The University of Oklahoma, Department of Geography and Environmental Sustainability, Norman, United States

*Abstract*
- *Tuesday, 10 December 2024*
- *08:00 – 17:30*
- *iPoster Gallery (Online)*

[Near Surface Flow Behavior in Katabatic Winds Over Steep Slopes](#)

Pawan Chandiramani[1], Manuel F Schmid[2], Scott Salesky[3] and Marco Giovanni Giometto[2], (1)Columbia University of New York, Palisades, NY, United States, (2)Columbia University, Department of Civil Engineering and Engineering Mechanics, New York, United States, (3)University of Oklahoma, School of Meteorology, Norman, United States

Abstract
- Tuesday, 10 December 2024
- 08:30 – 12:20
- Hall B-C (Poster Hall) (Convention Center)

[Investigating Compound Heat Wave and Fine Particulate Matter Pollution Events in Urban Areas](#)

Jessica Leffel, University of Oklahoma, School of Meteorology, Norman, United States and Chenghao Wang, University of Oklahoma, School of Meteorology; Department of Geography and Environmental Sustainability, Norman, OK, United States
*Abstract*

- *Tuesday, 10 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

[The Impact of Anthropause During COVID-19 on the Activity of Avian Influenza Host Birds](#)

Qiang Zhang[1,2], Jinwei Dong[1] and Xiangming Xiao[3], (1)Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, Beijing, China, (2)University of Chinese Academy of Sciences, Beijing, China, (3)University of Oklahoma Norman Campus, School of Biological Sciences, Center for Earth Observation and Modeling, Norman, United States
Abstract

- Tuesday, 10 December 2024
- 08:00 – 17:30
- iPoster Gallery (Online)

[A24G-08](#)
[Creating a 4D Dataset of Atmospheric Boundary-Layer Properties using Field Campaign Data Collected in the Southeast Texas](#)

Katia Lamer[1], Zackary Mages[2], Bernat Puigdomenech[3], Paul J. Walter[4], Zeen Zhu[5], Anita D Rapp[6], Christopher John Nowotarski[6], Sarah D Brooks[7], Alexandra Ulinski[8], Milind Sharma[9], Petra Maria Klein[10], Michelle R. Spencer[11], Travis Griggs[8] and Katherine McKeown[12], (1)Brookhaven National Laboratory, Environmental and Climate Sciences Department, Upton, United States, (2)Stony Brook University, Stony Brook, NY, United States, (3)McGill University, Montreal, QC, Canada, (4)St. Edward's University, Austin, United States, (5)Brookhaven National Laboratory, Upton, United States, (6)Texas A&M University, Atmospheric Sciences, College Station, United States, (7)Texas A & M Univ, College Station, United States, (8)University of Houston, Houston, United States, (9)Texas A&M University College Station, Atmospheric Sciences, College Station, United States, (10)University of Oklahoma, School of Meteorology, Norman, United States, (11)University of Oklahoma, Cooperative Institute for Severe and High-Impact Weather Research and Operations, Norman, United States, (12)Pennsylvania State University Main Campus, Meteorology and Atmospheric Science, State College, United States
*Abstract*

- *Tuesday, 10 December 2024*
- *17:20 – 17:30*
- *202 B (Convention Center)*

[A23L-06](#)
[Update on the NASA-ASI Multi-Angle Imager for Aersolos (MAIA) Pre-Launch Mission Status](#)

David J Diner[1], Lori O. Bator[1], Stacey W Boland[1], Kevin Burke[1], Larry Di Girolamo[2], Scott Gluck[3], Sina Hasheminassab[1], Amber Jenkins[4], Veljko M Jovanovic[3], Yang Liu[5], Saagar Patel[1], Robert Rosenberg[1], Giovanni Rum[6], Sara Susca[1], Jun Wang[7], Ross Weidman[1], Feng Xu[8], Huanxin Zhang[9] and The MAIA Team, (1)Jet Propulsion Laboratory, California Institute of Technology, Pasadena, United States, (2)University of Illinois at Urbana-Champaign, Urbana, United States, (3)Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, United States, (4)NASA Jet Propulsion Laboratory, Pasadena, United States, (5)Emory University, Gangarosa Department of Environmental Health, Atlanta, GA, United States, (6)Italian Space Agency, Rome, Italy, (7)University of Iowa, Iowa City, IA, United States, (8)University of Oklahoma, School of Meteorology, Norman, OK, United States,

(9)University of Iowa, Department of Chemical and Biochemical Engineering, Iowa City, IA, United States

*Abstract*

- *Tuesday, 10 December 2024*
- *15:05 – 15:15*
- *202 A (Convention Center)*

IN23E-05

Making Geospatial Data Easier to Access: NASA Earthdata's Application for Extracting and Exploring Analysis Ready Samples (AppEEARS)

Cole Krehbiel, USGS Earth Resources Observation and Science (EROS) Center Sioux Falls, Sioux Falls, SD, United States, Aaron M Friesz, Organization Not Listed, Washington, United States, Mahsa Jami, University of Oklahoma Norman Campus, Geography and Environmental Sustainability, Norman, United States and Erik Bolch, USGS Earth Resources Observation and Science (EROS) Center Sioux Falls, Sioux Falls, United States

*Abstract*

- *Tuesday, 10 December 2024*
- *14:22 – 14:25*
- *eLightning Theater 4 (Convention Center)*

Investigating the relationship between wildfires and lightning

Michael Stock, University of Oklahoma Norman Campus, Norman, United States, Joseph Berry, Cooperative Institute for Severe and High-Impact Weather Research and Operations, Norman, United States, Julia Tilles, Sandia National Laboratories, Albuquerque, United States and Vanna Chmielewski, NOAA / OAR / National Severe Storms Laboratory, Norman, United States

*Abstract*

- *Tuesday, 10 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

Reanalysis of Fly's Eye GLM Simulator (FEGS) optical pulse detections from the 2017 GOES-R Post Launch Test (GOES-R PLT) field campaign

Thomas D Walker, University of Alabama in Huntsville, Huntsville, AL, United States, Sarah M. Stough, University of Oklahoma, Cooperative Institute for Severe and High-Impact Weather Research and Operations, Norman, United States, Mason Quick, NASA Marshall Space Flight Center, Huntsville, United States and Kaitlyn Wheeler, University of Alabama in Huntsville, Huntsville, United States

*Abstract*

- *Tuesday, 10 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

**Wednesday, December 11, 2024**

Mapping Historical Land-Use and Land-Cover Change in Central Oklahoma: Integrating Historical Geospatial Data and Modern Aerial Imagery, 1871-2023

Adam Anwar[1], Timothy R Filley[2] and Bruce Hoagland[1], (1)University of Oklahoma, Department of Geography and Environmental Sustainability, Norman, United States, (2)The University of Oklahoma, Department of Geography and Environmental Sustainability, Norman, United States

Abstract

- *Wednesday, 11 December 2024*
- *08:30 – 12:20*

- *Hall B-C (Poster Hall) (Convention Center)*

## A34A
## Advanced AI/ML for High-Impact Weather Prediction and Observation II Oral
Jiaxi Hu, Cooperative Institute for Severe and High-Impact Weather Research and Operations, University of Oklahoma, and NOAA/OAR National Severe Storms Laboratory, Norman, Oklahoma, Norman, United States, Yixin Wen, University of Florida, Department of Geography, Gainesville, United States, Xiaoming Shi, The Hong Kong University of Science and Technology, Hong Kong, China and Hui Su, The Hong Kong University of Science and Technology, Clear Water Bay, Hong Kong
*Session Proposal*
- Wednesday, 11 December 2024
- 16:00 – 17:30
- 151 B (Convention Center)

## NS31B
## Geophysical Characterization and Monitoring of Natural Hazards I Poster
Sebastian Uhlemann, Lawrence Berkeley National Laboratory, Berkeley, United States, Sina Saneiyan, University of Oklahoma, School of Geosciences, Norman, OK, United States, Angela Perrone, CNR Institute of Methodologies for Environmental Analysis, Potenza, Italy and Xavier Comas, Florida Atlantic University, Geosciences, Boca Raton, FL, United States
*Session Proposal*
- Wednesday, 11 December 2024
- 08:30 – 12:20
- Hall B-C (Poster Hall) (Convention Center)

## GC33I
## Earth System Predictability Across Timescales for Climate Security: Grand Challenges and Recent Advancements II Poster
Jadwiga Richter, U. S. National Science Foundation National Center for Atmospheric Research, Boulder, United States, Zhaoxia Pu, University of Utah, Salt Lake City, UT, United States, Kathleen Pegion, George Mason University, Fairfax, VA, United States, Kate A Brauman, University of Alabama, Global Water Security Center, Tuscaloosa, AL, United States and Gabrielle Brown, University of Oklahoma, School of Meteorology, Norman, United States
*Session Proposal*
- Wednesday, 11 December 2024
- 13:40 – 17:30
- Hall B-C (Poster Hall) (Convention Center)

## H31H
## Precipitation and Hydrometeorological Processes Through the Eyes of Machine Learning and Advanced Statistics II eLightning
Dr. Veljko Petković, University of Maryland, College Park, ESSIC/CISESS, College Park, United States, Pierre Kirstetter, NOAA/National Severe Storms Laboratory, Norman, United States; University of Oklahoma Norman Campus, School of Meteorology and School of Civil Engineering and Environmental Science, Norman, United States, Dr. Shruti Ashok Upadhyaya, Ph.D., Indian Institute of Technology Hyderabad, Department of Civil Engineering, Hydearbad, India and Ardeshir Ebtehaj, Georgia Institute of Technology Main Campus, Atlanta, United States
*Session Proposal*
- Wednesday, 11 December 2024
- 08:30 – 10:00
- eLightning Theater 2 (Convention Center)

## H34H
### Precipitation and Hydrometeorological Processes Through the Eyes of Machine Learning and Advanced Statistics III Oral

Dr. Veljko Petković, University of Maryland, College Park, ESSIC/CISESS, College Park, United States, Dr. Shruti Ashok Upadhyaya, Ph.D., Indian Institute of Technology Hyderabad, Department of Civil Engineering, Hydearbad, India, Pierre Kirstetter, NOAA/National Severe Storms Laboratory, Norman, United States; University of Oklahoma Norman Campus, School of Meteorology and School of Civil Engineering and Environmental Science, Norman, United States and Ardeshir Ebtehaj, Georgia Institute of Technology Main Campus, Atlanta, United States

Session Proposal

- *Wednesday, 11 December 2024*
- *16:00 – 17:30*
- *103 A-B (Convention Center)*

## A31B
### Advances in Cloud and Preciptitation Processes: Integrating Observations, Modeling, and Theory I Poster

Dr. Yongjie Huang, PhD, University of Oklahoma Norman Campus, Center for Analysis and Prediction of Storms (CAPS), Norman, United States, Chunsong Lu, Nanjing Univerisity of Information Science and Technology (NUIST), Nanjing, China, Peng Wu, Pacific Northwest National Laboratory, Richland, WA, United States, Xiaojian Zheng, Argonne National Laboratory, Argonne, United States, Yi Huang, The University of Melbourne, School of Geography, Earth and Atmospheric Sciences and ARC Centre of Excellence for Climate Extremes, Melbourne, Australia, Yangang Liu, Brookhaven National Laboratory, Upton, NY, United States, Timothy Logan, Texas A&M University, College Station, United States, Greg M McFarquhar, Cooperative Institute for Severe and High-Impact Weather Research and Operations, University of Oklahoma, Norman, United States, Jianhao Zhang, National Oceanic and Atmospheric Administration (NOAA), Chemical Sciences Laboratory, Boulder, United States, Chuanfeng Zhao, Peking University, Department of Atmospheric and Oceanic Sciences, Beijing, China and Jingjing Tian, Pacific Northwest National Laboratory, Atmospheric Rsch & Measurments, Richland WA, United States

*Session Proposal*

- *Wednesday, 11 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

## B31B
### Characterizing the Environmental Impacts of Active, Abandoned, and Orphaned Oil and Gas Wells, Locating Undocumented Orphaned Wells, and Prioritizing Plugging I Oral

Margaret Coleman, Environmental Defense Fund, New York, United States, Andrew Govert, U.S. Department of Energy, Office of Fossil Energy and Carbon Management, Washington DC, United States, Greg Lackey, National Energy Technology Laboratory Pittsburgh, Pittsburgh, PA, United States, Nicholas J. Gianoutsos, U.S. Geological Survey, Central Energy Resources Science Center, Denver, United States and Sina Saneiyan, University of Oklahoma, School of Geosciences, Norman, OK, United States

*Session Proposal*

- *Wednesday, 11 December 2024*
- *08:30 – 10:00*
- *152 A (Convention Center)*

## Influence of the Pacific and Atlantic Oceans on precipitation variability over the southeastern United States

Priyanshi Singhai[1], Kathleen Pegion[1], Akintomide A Akinsanola[2], Bohar Singh[3] and Thierry Taguela Ndetatsin[4], (1)University of Oklahoma Norman Campus, School of Meteorology, Norman, United States, (2)University of Illinois at Chicago, Earth and Environmental Science, Chicago, IL, United States, (3)Climate Prediction Center College Park, College Park, United States, (4)University of Chicago, Chicago, United States

*Abstract*

- *Wednesday, 11 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

## Sources of Predictability for Subseasonal Precipitation in South America

Kathleen Pegion, University of Oklahoma Norman Campus, School of Meteorology, Norman, United States, Emily J Becker, University of Miami, Coral Gables, United States and Ben P Kirtman, University of Miami, Rosenstiel School of Marine and Atmospheric Science, Department of Atmospheric Sciences, Miami, United States

*Abstract*

- *Wednesday, 11 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

## Microclimate Variation, Mosquito Distributions, and Urban Transmission of Dengue and Malaria in Two Indian Cities

Michael C Wimberly[1], Yusuf Jamal[1], Eric Bump[1], Ryan Penic[1], Rajendra Baharia[2], Vikas Desai[3], Vijay Kohli[4], Ajeet Mohanti[5], Mercedes Pascual[6], Rajesh Sharma[4], Sachin Sharma[7], Keshav Vaishnav[8] and Courtney C Murdock[9], (1)University of Oklahoma, Department of Geography and Environmental Sustainability, Norman, United States, (2)National Institute of Malaria Research, Nadiad, India, (3)Vesu Urban Health Centre, Surat, India, (4)Ahmedabad Municipal Corporation Health Department, Ahmedabad, India, (5)National Institute of Malaria Research, Panaji, India, (6)New York University, New York, United States, (7)National Institute of Malaria Research, Dwarka, India, (8)Surat Municipal Corporation Vector Borne Diseases Control Department, Surat, India, (9)Cornell University, Department of Entomology, Ithaca, United States

*Abstract*

- *Wednesday, 11 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

IN32A-03

## Creating ethical and trustworthy AI for weather and Earth systems

Amy McGovern, University of Oklahoma, Computer Science; School of Meteorology, Norman, United States

*Abstract*

- *Wednesday, 11 December 2024*
- *10:45 – 10:55*
- *Marquis 3-4 (Marriot Marquis)*

## Projecting Future Malaria Transmission in South Asia: The Role of Humidity in Climate Change-Driven Disease Models

Eric Bump[1], Courtney C Murdock[2], Vimal Mishra[3] and Michael C Wimberly[1], (1)University of Oklahoma, Department of Geography and Environmental Sustainability, Norman, United States,

(2)Cornell University, Department of Entomology, Ithaca, United States, (3)Indian Institute of Technology Gandhinagar, Department of Civil Engineering, Gandhinagar, India
*Abstract*
- *Wednesday, 11 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

MODFLOW Modeling Analysis of Groundwater Management Measures Considering Future Climate Impacts: A Case Study of the Edwards Balcones Fault Zone Aquifer

Changbing Yang[1], Logan Schmidt[1], F. Paul Bertetti[1], Hakan Basagaoglu[1] and Adrienne Wootten[2], (1)Edwards Aquifer Authority, San Antonio, TX, United States, (2)South Central Climate Adaptation Science Center, University of Oklahoma, Norman, OK, United States
*Abstract*
- *Wednesday, 11 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

Quantifying Multi-decadal Land Cover Change and Projecting Agricultural Suitability in San Martin, Peru

Zachary Scott Brecheisen[1], Julio Alegre[2], Darrell G Schulze[3], Timothy R Filley[4], Camilo Barrios Barrios Pérez[5], David S Ebert[6], Wolfgang Jentner[6] and Jennifer Koch[7], (1)The University of Oklahoma, Norman, United States, (2)Universidad Nacional Agraria La Molina, Lima, Peru, (3)Purdue University, West Lafayette, United States, (4)The University of Oklahoma, Department of Geography and Environmental Sustainability, Norman, United States, (5)Alliance Biodiversity - CIAT, Bogotá, Colombia, (6)University of Oklahoma Norman Campus, Norman, United States, (7)University of Oklahoma, Department of Geography and Environmental Sustainability, Norman, OK, United States
*Abstract*
- *Wednesday 11, December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

Observed relationships between aerosol, meteorological, dynamical and cloud microphysical properties during ESCAPE

Greg M McFarquhar[1], Saurabh Patil[1], Yongjie Huang[2], Mengistu Wolde[3], Cuong Nguyen[4], Keyvan Ranjbar[4], Leonid Nichman[5], Natalia Bliankinshtein[6], Kenny Bala[5], Gregory C Roberts[7], Pavlos Kollias[8] and Zackary Mages[8], (1)Cooperative Institute for Severe and High-Impact Weather Research and Operations, University of Oklahoma, Norman, United States, (2)School of Meteorology, University of Oklahoma, Norman, OK, United States, (3)National Research Council Canada, Flight Research Laboratory, Ottawa, ON, Canada, (4)National Research Council Canada, Ottawa, ON, Canada, (5)National Research Council Canada, Ottawa, Canada, (6)McGill University, Montreal, QC, Canada, (7)Scripps Institution of Oceanography, La Jolla, CA, United States, (8)Stony Brook University, Stony Brook, NY, United States
*Abstract*
- *Wednesday, 11 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

A34I-03

Analysis of Conditions Suitable for Chlorine Activation in the Midlatitude UTLS during DCOTSS and the Possible Risk Imposed by Future Geoengineering

Laila Howar[1], Ross J Salawitch[2], David M Wilmouth[3], Eric J Hintsa[4], Elliot L Atlas[5], Jennifer S Hare[3], Marco Rivero[3], Sue Schauffler[6], Norton Allen[7], Kate Smith[5], Stephen Donnelly[5], Leslie Pope[8], Brad

David Hall[9], Geoffrey S Dutton[10], Fred L Moore[4], James W Elkins[11], Jessica B Smith[12], John Dykema[13], Yaowei Li[7], Thomas F Hanisco[14], Jason M St Clair[15], Erin Delaria[16], Thaopaul V Bui[17], Jonathan M Dean-Day[18], Jon David Nance[10], Apoorva Pandey[3], David S Sayres[7], Frank N Keutsch[3], Cameron R Homeyer[19], Kenneth Paul Bowman[20] and The DCOTSS Science Team, (1)University of Maryland College Park, College Park, MD, United States, (2)University of Maryland, AOSC and Chemistry, College Park, United States, (3)Harvard University, Cambridge, United States, (4)Cooperative Institute for Research in Environmental Sciences (CIRES), Boulder, United States, (5)University of Miami, Miami, United States, (6)Natl Ctr Atmospheric Research, Boulder, United States, (7)Harvard University, Cambridge, MA, United States, (8)University of Miami, Miami, FL, United States, (9)NOAA, Global Monitoring Laboratory, Boulder, United States, (10)Cooperative Institute for Research in Environmental Sciences (CIRES), NOAA/GML, Boulder, United States, (11)University of Colorado at Boulder, CIRES, Boulder, United States, (12)Harvard Univ/Anderson Group, Cambridge, United States, (13)Harvard University, School of Engineering and Applied Sciences, Cambridge, United States, (14)NASA Goddard Space Flight Center, Greenbelt, United States, (15)University of Maryland Baltimore County, Baltimore, United States, (16)NASA Goddard Space Flight Center, Atmospheric Chemistry and Dynamics Laboratory, Greenbelt, United States, (17)NASA Ames Research Center, Moffett Field, CA, United States, (18)Bay Area Environmental Research Institute, Moffett Field, United States, (19)University of Oklahoma, School of Meteorology, Norman, OK, United States, (20)Texas A&M University, Atmospheric Sciences, College Station, United States

*Abstract*

- *Wednesday, 11 December 2024*
- *16:06 – 16:09*
- *eLightning Theater 1 (Convention Center)*

B33K-04

"From Fertilizer to Atmosphere: Mapping Wetland Denitrification Dynamics in the Mississippi Basin"

Columba Martínez Espinosa, Institut de recherche de la Tour Du Valat, Arles, France, Charles J Vorosmarty, Advanced Science Research Center at the Graduate Center, CUNY, Environmental Sciences Initiative, New York, United States, Peter Groffman, CUNY Advanced Science Research Center and Brooklyn College Department of Earth and Environmental Sciences, New York, United States, Nicolas Maxfield, CUNY Advanced Science Research Center at The Graduate Center, Environmental Sciences Initiative, New York, United States, Jonathan E Hickman, NASA Goddard Institute for Space Studies, New York, NY, United States, Kyle C. McDonald Dr., CUNY City College of New York. NY, USA, Department of Earth and Atmospheric Sciences, New York, United States, Maria Tzortziou, Columbia University of New York, New York, United States, Nick Steiner, City College of New York, New York. NY, USA, Department of Earth and Atmospheric Sciences, New York, United States, Dianne Greenfield, CUNY, Advanced Science Research Center, New York, United States, Anthony D Cak, Advanced Science Research Center at The Graduate Center, CUNY, Environmental Sciences Initiative, New York, United States, Fabio Corsi, CUNY City College of New York, New York, United States, Yang Hong, University of Oklahoma, School of Civil Engineering and Environmental Science, Norman, United States, Atul K Jain, University of Illinois at Urbana Champaign, Urbana, United States and C-FrAMES

*Abstract*

- *Wednesday, 11 December 2024*
- *14:46 – 14:56*
- *151 B (Convention Center)*

GC34A-02

NASA's Surface Biology and Geology as an Earth Science to Action mission

Christine M Lee[1], Africa Ixmucane Flores Anderson[2], Dana Chadwick[3], Christiana Ade[4], Madeleine Pascolini-Campbell[3], Jeffrey C Luvall[5], Stephanie Schollaert Uz[6], Kelly Luis[7], Ayia Lindquist[8], Clayton Elder[3], Mahsa Jami[9], Erik Bolch[10], Aaron M Friesz[11], Robert O Green[12], Simon J Hook[13], David R

Thompson[12], Kerry Cawse-Nicholson[3], Michelle M Gierach[14], David Schimel[3] and John T Reager II[15], (1)NASA Jet Propulsion Laboratory, Water and Ecosystems, Pasadena, CA, United States, (2)University of Alabama in Huntsville, Earth System Science Center, Huntsville, United States, (3)Jet Propulsion Laboratory, California Institute of Technology, Pasadena, United States, (4)North Carolina State University Raleigh, Raleigh, United States, (5)NASA/NSSTC, Huntsville, United States, (6)NASA Goddard Space Flight Center, Earth Sciences Division, Greenbelt, MD, United States, (7)University of Massachusetts Boston, Dorchester, United States, (8)Science Systems and Applications, Inc., Lanham, MD, United States, (9)University of Oklahoma Norman Campus, Geography and Environmental Sustainability, Norman, United States, (10)USGS Earth Resources Observation and Science (EROS) Center Sioux Falls, Sioux Falls, United States, (11)Organization Not Listed, Washington, United States, (12)NASA Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, United States, (13)NASA Jet Propulsion Laboratory, California Institute of Technology, Pasadena, United States, (14)NASA Jet Propulsion Laboratory, Pasadena, United States, (15)NASA Jet Propulsion Laboratory, Pasadena, CA, United States
*Abstract*

- *Wednesday, 11 December 2024*
- *16:10 – 16:20*
- *Salon C (Convention Center)*

## H31C-07
## Evaluating the Skill of Subseasonal-to-Seasonal Streamflow Forecasts with a case study of 24 Snow-dominated and Non-snow-dominated watersheds across CONUS

Aayush Adhikari, Lujun Zhang and Tiantian Yang, University of Oklahoma Norman Campus, School of Civil Engineering and Environmental Science, Norman, United States
*Abstract*

- *Wednesday, 11 December 2024*
- *09:35 – 09:45*
- *144 A-C (Convention Center)*

## Identifying Multiscale Basin Management Challenges and Current Research Priorities based on Topic Modeling of the Mississippi River Basin

Joshua Wimhurst, University of Oklahoma, South Central Climate Adaptation Science Center, Norman, United States, Jennifer Koch, University of Oklahoma, Department of Geography and Environmental Sustainability, Norman, OK, United States and Renee A McPherson, University of Oklahoma, South Central Climate Adaption Science Center, Norman, United States
*Abstract*

- *Wednesday, 11 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

## TASZERS Findings Energize ARM Cloud Retrievals

Connor J. Flynn, University of Oklahoma Norman Campus, Norman, United States, Stephen H Jones, Aerodyne Research Inc., Billerica, MA, United States, Zachary Payne, Aerodyne Research, Inc., Billerica, United States and Timothy Bruce Onasch, Aerodyne Research, Inc., Billerica, MA, United States
*Abstract*

- *Wednesday, 11 December 2024*
- *08:00 – 17:30*
- *iPoster Gallery (Online)*

## GP34A-01

### Paleogeography and Low oxygen may have boosted global iron deposition after the Great Oxidation Event

Athena Eyster, Tufts University, Medford, United States, Latisha Ashley Brengman, University of Minnesota Duluth, Earth and Environmental Sciences, Duluth, MN, United States, Kristin Bergmann, Massachusetts Institute of Technology, Earth, Atmospheric, and Planetary Sciences, Cambridge, MA, United States, Jahandar Ramezani, MIT-EAPS, Cambridge, MA, United States and Sarah George, University of Oklahoma Norman Campus, Geosciences, Norman, United States

*Abstract*

- Wednesday, 11 December 2024
- 16:00 – 16:12
- 202 B (Convention Center)

### H32A-01
### PFAS in Global Waters: Occurrence, Environmental Burden and the Known Unknowns

Denis M O'Carroll[1], Diana Ackerman Grunfeld[2], Matthew Lee[1], Daniel Gilbert[2] and Tohren C G Kibbey[3], (1)School of Civil and Environmental Engineering, UNSW Sydney, Australia, Sydney, Australia, (2)University of New South Wales, Sydney, Australia, (3)University of Oklahoma Norman Campus, Norman, OK, United States

*Abstract*

- Wednesday, 11 December 2024
- 10:20 – 10:30
- 145 A (Convention Center)

### Exploring the Mechanisms and Potential of UNet 3+ in Spatiotemporal Gap-Filling of NASA Satellite-Derived-AOD in North America

Jeffrey Lee, University of Oklahoma, School of Meteorology, Norman, United States and Sandra Marcela Loria Salazar, University of Oklahoma Norman Campus, School of Meteorology, Norman, OK, United States

*Abstract*

- *Wednesday, 11 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

### Optimizing Laboratory Measurements for Below-Ground Soil $CO_2$ Isotopes

Martha Jimenez-Castaneda[1], Janine Sparks[1], Jordan Jones[1] and Timothy R Filley[2], (1)The University of Oklahoma, Norman, United States, (2)The University of Oklahoma, Department of Geography and Environmental Sustainability, Norman, United States

*Abstract*

- *Wednesday, 11 December 2024*
- *08:00 – 17:30*
- *iPoster Gallery (Online)*

### Empowering Climate Communicators: The Climate Consensus's Role in Supporting Climate Engagement and Outreach

Gabrielle Brown, University of Oklahoma, School of Meteorology, Norman, United States, Austin Reed, George Mason University, Fairfax, United States, Allison LaFleur, RoVolus, LLC, Massachusetts, United States, Andrew Westgate, Vermont State University, Lyndonville, United States, Gerard Falco, The Climate Consensus, Inc., St. Johnsbury, United States, Janel Hanrahan, RTI International, Research Triangle Park, United States, Amelia Roosevelt, Bedford 2030, Katonah, United States and Carlisle Wishard, Evansville Museum of Arts, History, and Science, Evansville, United States

*Abstract*

- *Wednesday, 11 December 2024*

- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

## A framework for creating a next generation probabilistic gridded precipitation dataset for CONUS

Guoqiang Tang[1], Andy Wood[1], Andrew James Newman[1] and Pierre-Emmanuel Kirstetter[2], (1)NSF National Center for Atmospheric Research, Boulder, United States, (2)University of Oklahoma, School of Meteorology and School of Civil Engineering and Environmental Science, Norman, United States
*Abstract*

- *Wednesday, 11 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

## Comparison of leaf phenology of a large cottonwood tree estimated by surface reflectance bands and vegetation indices from time series PlanetScope and Sentinel-2 images

Baihong Pan[1], Xiangming Xiao[2], Li Pan[3], Yuan Yao[4], Cheng Meng[5], Yanhua Xie[6], Chenchen Zhang[1] and Yuanwei Qin[4], (1)School of Biological Sciences, Center for Earth Observation and Modeling, University of Oklahoma, Norman, United States, (2)University of Oklahoma Norman Campus, School of Biological Sciences, Center for Earth Observation and Modeling, Norman, United States, (3)University of Oklahoma, School of Biological Sciences, Norman, United States, (4)Department of Microbiology and Plant Biology, Center for Earth Observation and Modeling, University of Oklahoma, Norman, United States, (5)University of Oklahoma Norman Campus, School of Biological Sciences, Norman, United States, (6)University of Oklahoma, Geography and Environmental Sustainability, Norman, United States
*Abstract*

- Wednesday, 11 December 2024
- 08:30 – 12:20
- Hall B-C (Poster Hall) (Convention Center)

## The Impact of Anthropause During COVID-19 on the Activity of Avian Influenza Host Birds

Qiang Zhang[1,2], Jinwei Dong[1] and Xiangming Xiao[3], (1)Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, Beijing, China, (2)University of Chinese Academy of Sciences, Beijing, China, (3)University of Oklahoma Norman Campus, School of Biological Sciences, Center for Earth Observation and Modeling, Norman, United States
*Abstract*

- Wednesday, 11 December 2024
- 08:00 – 17:30
- iPoster Gallery (Online)

## AE32A-03
## Geostationary Lightning Mapper Validation of Thunderstorm 'First-Flashes'

Kevin Thiel[1,2], Kristin M Calhoun[3], Michael Stock[4,5], Jacquelyn Ringhausen[6], Sarah M. Stough[7] and Vanna Chmielewski[5], (1)University of Oklahoma, Cooperative Institute For Severe and High-Impact Weather Research and Operations, Norman, United States, (2)National Weather Service Storm Prediction Center, Norman, United States, (3)National Severe Storms Lab Norman, Norman, OK, United States, (4)Cooperative Institute for Severe and High-Impact Weather Research and Operations, Norman, United States, (5)NOAA / OAR / National Severe Storms Laboratory, Norman, United States, (6)AEM, Research & Development, Germantown, United States, (7)University of Oklahoma, Cooperative Institute for Severe and High-Impact Weather Research and Operations, Norman, United States
*Abstract*

- *Wednesday, 11 December 2024*

- *10:40 – 10:50*
- *University of DC & Catholic (Marriott Marquis)*

PANGEA – an update on a scoping study for a  NASA tropical forest terrestrial ecology campaign

Elsa Ordway[1], Isaac Aguilar[2], Anabelle Cardoso[3], Dana Chadwick[4], Temilola Fatoyinbo[5], Antonio Ferraz[6], Yanlei Feng[7], Adia Bey[8], Ane Alencar[9], Jose D Fuentes[10], Liane S Guild[11], Matthew S Johnson[12], Michael Keller[13], Lydie Stella Koutika[14], Yue Li[15], Junjie Liu[4], Marcos Longo[16], Ian Mccubbin[6], Félicien Meunier[17], Charles E Miller[18], Helene C Muller-Landau[19], Patrick Namulisa[20], Robinson I Negron Juarez[21], Teodyl Nkuintchua[22], Matheus Nunes[23], Zoe Pierrat[6], Le Bienfaiteur Sagang Takougoum[24], Maria J. Santos[25], Fabian D Schneider[6], Bonaventure Sonké[26], Hannah Stouter[15], César Terrer[27], Marius von Essen[15], Michelle Wong[28], Sarah R Worden[15] and Xiangming Xiao[29], (1)University of California Los Angeles, Los Angeles, CA, United States, (2)University of California Los Angeles, Department of Ecology and Evolutionary Biology, Los Angeles, United States, (3)University at Buffalo, Buffalo, United States, (4)Jet Propulsion Laboratory, California Institute of Technology, Pasadena, United States, (5)NASA GSFC, Biospheric Science, Greenbelt, United States, (6)JPL/NASA/Caltech, Pasadena, United States, (7)University of California Berkeley, Berkeley, United States, (8)NASA Goddard Space Flight Center, Greenbelt, United States, (9)IPAM Amazon Environmental Research Institute, Brasilia, Brazil, (10)Penn State University, University Park, United States, (11)NASA Ames Res Ctr, Moffett Field, United States, (12)Earth Science Division, NASA Ames Research Center, Moffett Field, CA, United States, (13)USDA Forest Service, Rio Piedras, United States, (14)CRDPI, Pointe-Noire, People's Republic Of Congo, (15)University of California Los Angeles, Los Angeles, United States, (16)Lawrence Berkeley National Laboratory, Berkeley, United States, (17)Université Catholique de Louvain, Louvain-La-Neuve, Belgium, (18)California Institute of Technology, Jet Propulsion Laboratory, Pasadena, United States, (19)Smithsonian Tropical Research Institute, Balboa, Panama, (20)Columbia University of New York, Palisades, United States, (21)Lawrence Berkeley Natl Lab, Berkeley, United States, (22)World Resources Institute, Kinshasa, Congo, (23)University of Maryland College Park, College Park, United States, (24)University of California, Los Angeles, United States, (25)University of Zurich, Department of Geography, Zurich, Switzerland, (26)University of Yaoundé, Yaoundé, Cameroon, (27)Massachusetts Institute of Technology, Cambridge, United States, (28)Yale University, New Haven, United States, (29)University of Oklahoma Norman Campus, School of Biological Sciences, Center for Earth Observation and Modeling, Norman, United States
*Abstract*
- Wednesday, 11 December 2024
- 17:20 – 17:30
- 150 B (Convention Center)

Developing a Framework for Evaluating Sources of Predictability for Extreme Events on Subseasonal Timescales in Southeast Asia & Latin America

Gabrielle Brown, University of Oklahoma, School of Meteorology, Norman, United States and Kathleen Pegion, University of Oklahoma Norman Campus, School of Meteorology, Norman, United States
Abstract
- Wednesday, 11 December 2024
- 09:20 – 09:30
- Salon G (Convention Center)

Fingerprinting the Signatures of Multi-Layered Precipitation Systems in Satellite Observations

Malarvizhi Arulraj, University of Maryland College Park, Cooperative Insititute for Satellite Earth System Studies, College Park, MD, United States, Dr. Veljko Petković, University of Maryland, College Park, ESSIC/CISESS, College Park, United States, Dr. Shruti Ashok Upadhyaya, Ph.D., Indian Institute of Technology Hyderabad, Department of Civil Engineering, Hydearbad, India; University of Oklahoma, Advanced Radar Research Center (ARRC), Norman, United States, Huan Meng, Natl Oceanic & Atmospheric Adm, College Park, United States and Ralph Ferraro, University of Maryland College Park, College Park, United States
Abstract

- Wednesday, 11 December 2024
- 08:51 – 08:54
- eLightning Theater 2 (Convention Center)

## Exploring the Mechanisms and Potential of UNet 3+ in Spatiotemporal Gap-Filling of NASA Satellite-Derived-AOD in North America

Jeffrey Lee, University of Oklahoma, School of Meteorology, Norman, United States and Sandra Marcela Loria Salazar, University of Oklahoma Norman Campus, School of Meteorology, Norman, OK, United States

*Abstract*

- Wednesday, 11 December 2024
- 08:30 – 12:20
- Hall B-C (Poster Hall) (Convention Center)

## B34D-08
## Understanding the vulnerability of the tropical carbon sink requires unraveling heterogeneous tropical forest responses to change

Elsa Ordway[1], Isaac Aguilar[2], Anabelle Cardoso[3], K. Dana Chadwick[4], Temilola Fatoyinbo[5], Antonio Ferraz[6], Yanlei Feng[7], Adia Bey[8], Ane Alencar[9], Jose D Fuentes[10], Liane S Guild[11], Matthew S Johnson[12], Michael Keller[13], Lydie Stella Koutika[14], Yue Li[15], Junjie Liu[16], Marcos Longo[17], Ian Mccubbin[6], Félicien Meunier[18], Charles E Miller[19], Helene C Muller-Landau[20], Patrick Namulisa[21], Robinson I Negron Juarez[22], Teodyl Nkuintchua[23], Matheus Nunes[24], Zoe Pierrat[6], Le Bienfaiteur Sagang Takougoum[25], Maria J. Santos[26], Fabian D Schneider[6], Bonaventure Sonké[27], Hannah Stouter[15], César Terrer[28], Marius von Essen[15], Michelle Wong[29], Sarah R Worden[15] and Xiangming Xiao[30], (1)University of California Los Angeles, Los Angeles, CA, United States, (2)University of California Los Angeles, Department of Ecology and Evolutionary Biology, Los Angeles, United States, (3)University at Buffalo, Buffalo, United States, (4)NASA Jet Propulsion Laboratory, California Institute of Technology, Pasadena, United States, (5)NASA GSFC, Biospheric Science, Greenbelt, United States, (6)JPL/NASA/Caltech, Pasadena, United States, (7)University of California Berkeley, Berkeley, United States, (8)NASA Goddard Space Flight Center, Greenbelt, United States, (9)IPAM Amazon Environmental Research Institute, Brasilia, Brazil, (10)Penn State University, University Park, United States, (11)NASA Ames Res Ctr, Moffett Field, United States, (12)Earth Science Division, NASA Ames Research Center, Moffett Field, CA, United States, (13)USDA Forest Service, Rio Piedras, United States, (14)CRDPI, Pointe-Noire, People's Republic Of Congo, (15)University of California Los Angeles, Los Angeles, United States, (16)Jet Propulsion Laboratory, California Institute of Technology, Pasadena, United States, (17)Lawrence Berkeley National Laboratory, Berkeley, United States, (18)Université Catholique de Louvain, Louvain-La-Neuve, Belgium, (19)California Institute of Technology, Jet Propulsion Laboratory, Pasadena, United States, (20)Smithsonian Tropical Research Institute, Balboa, Panama, (21)Columbia University of New York, Palisades, United States, (22)Lawrence Berkeley Natl Lab, Berkeley, United States, (23)World Resources Institute, Kinshasa, Congo, (24)University of Maryland College Park, College Park, United States, (25)University of California, Los Angeles, United States, (26)University of Zurich, Department of Geography, Zurich, Switzerland, (27)University of Yaoundé, Yaoundé, Cameroon, (28)Massachusetts Institute of Technology, Cambridge, United States, (29)Yale University, New Haven, United States, (30)University

of Oklahoma Norman Campus, School of Biological Sciences, Center for Earth Observation and Modeling, Norman, United States

*Abstract*

- Wednesday, 11 December 2024
- 17:10 – 17:20
- 150 B (Convention Center)

## GC31L-07
## Persistent and enhanced carbon sequestration capacity of alpine grasslands on the Earth's Third Pole

Prof. Yuyang Wang, PhD, CAU China Agricultural University, Beijing, China, Jingfeng Xiao, University of New Hampshire, Institute for the Study of Earth, Oceans, and Space, Earth Systems Research Center, Durham, United States, Yaoming Ma, Chinese Academy of Sciences, Institute of Tibetan Plateau Research, Beijing, China, Xuelong Chen, Institute of Tibetan Plateau Research, Chinese Academy of Sciences, Land-Atmosphere Interaction and its Climatic Effects Group, State Key Laboratory of Tibetan Plateau Earth System, Environment and Resources (TPESER), Beijing, China and Yiqi Luo, University of Oklahoma Norman Campus, Department of Microbiology and Plant Biology, Norman, United States

*Abstract*

- Wednesday, 11 December 2024
- 08:48 – 08:51
- eLightning Theater 1 (Convention Center)

## H34D-05
## Long-term Projections of Meteorological and Groundwater Droughts Using Explainable Artificial Intelligence and Statistically Downscaled Climate Data

Hakan Basagaoglu[1], F. Paul Bertetti[1], Adrienne Wootten[2], Debaditya Chakraborty[3], Chetan Sharma[3], Logan Schmidt[1], Icen Yoosefdoost[3], Changbing Yang[1], Maryam Samimi[1] and Ali Mirchi[4], (1)Edwards Aquifer Authority, San Antonio, TX, United States, (2)South Central Climate Adaptation Science Center, University of Oklahoma, Norman, OK, United States, (3)University of Texas at San Antonio, School of Civil and Environmental Engineering, and Construction Management, San Antonio, TX, United States, (4)Oklahoma State University, Biosystems and Agricultural Engineering, Stillwater, OK, United States

*Abstract*

- Wednesday, 11 December 2024
- 17:00 – 17:15
- 144 A-C (Convention Center)

## H34H-06
## A Benchmark Dataset for Satellite Precipitation Retrievals

Simon Pfreundschuh, Colorado State University, Fort Collins, United States, Tomoo Ushio, Osaka University, Division of Electrical, Electronic, and Infocommunications Engineering, Osaka, Japan, Jackson Tan, NASA Goddard Space Flight Center, Greenbelt, MD, United States, Dr. Veljko Petković, Colorado State University, Dept. of Atmospheric Science, Fort Collins, United States, Malarvizhi Arulraj, University of Maryland, Earth System Science Interdisciplinary Center (ESSIC) / CISESS, College Park, MD, United States, Pierre-Emmanuel Kirstetter, University of Oklahoma, School of Meteorology and School of Civil Engineering and Environmental Science, Norman, United States, Ali Behrangi, University of Arizona, Department of Hydrology and Atmospheric Sciences, Tucson, United States and Machine Learning Working Group of the International Precipitation Working Group

*Abstract*

- Wednesday, 11 December 2024
- 17:15 – 17:30

- 103 A-B (Convention Center)

**Thursday, December 12, 2024**

[Dust in the Southern Great Plains Ecoregion of Oklahoma: Characterization and Spatiotemporal Relationships](#)

Mackenzie Flynn, University of Oklahoma Norman Campus, Geology, Norman, United States, Michael J Soreghan, University of Oklahoma Norman Campus, School of Geosciences, Norman, United States, Caitlin Anne Hodges, University of Georgia, Athens, GA, United States and Gerilyn S Soreghan, Univ of Oklahoma, Norman, United States

*Abstract*
- *Thursday, 12 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

[Microseismic Evolution, Fault Reactivation, and Stress Heterogeneity of Crustal Faults at Pawnee, Oklahoma](#)

Segun Bodunde[1], Junle Jiang[1], Jose Viteri Lopez[1], Jacob I Walter[2] and Brett Carpenter[1], (1)University of Oklahoma Norman Campus, School of Geosciences, Norman, United States, (2)University of Oklahoma, Oklahoma Geological Survey, Norman, United States

*Abstract*
- *Thursday, 12 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

[NH41C](#)
[Hybrid Modeling and Digital Twin Systems for Flood Hazard Prediction and Risk Assessment at Different Spatial Scales Poster](#)

David F Muñoz, Virginia Polytechnic Institute and State University, Civil & Environmental Engineering, Blacksburg, United States, Jun-Whan Lee, University of Texas at Austin, Department of Civil Architectural and Environmental Engineering, Austin, TX, United States, Felix Luis Santiago-Collazo, University of Georgia, School of Environmental, Civil, Agriculture, and Mechanical Engineering, Athens, United States, Aikaterini Kyprioti, University of Oklahoma Norman Campus, School of Civil Engineering and Environmental Science, Norman, United States and James Doss-Gollin, Rice University, Department of Civil and Environmental Engineering, Houston, TX, United States

*Session Proposal*
- *Thursday, 12 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

[A42A-08](#)
[Evaluating entrainment-mixing characteristics through direct comparisons of drop size distributions using in situ observations from ACE-ENA](#)

Dr. John D'Alessandro[1], Robert Wood[2] and Peter N Blossey[2], (1)University of Oklahoma Norman Campus, Norman, United States, (2)University of Washington, Department of Atmospheric and Climate Science, Seattle, United States

*Abstract*
- *Thursday, 12 December 2024*
- *11:30 – 11:40*
- *201 (Convention Center)*

[A42D](#)
[Atmospheric Research Supported by Uncrewed Aerial Systems Poster](#)

Fan Mei, PhD, Pacific Northwest National Laboratory, Richland, WA, United States, Gijs de Boer, NOAA, Physical Sciences Laboratory, Boulder, United States and Greg M McFarquhar, Cooperative Institute for Severe and High-Impact Weather Research and Operations, University of Oklahoma, Norman, United States

*Session Proposal*
- *Thursday, 12 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

A44A
Advances in Cloud and Precipitation Processes: Integrating Observations, Modeling, and Theory IV Oral
Dr. Yongjie Huang, PhD[1], Chunsong Lu[2], Peng Wu[3], Xiaojian Zheng[4], Yi Huang[5], Yangang Liu[6], Timothy Logan[7], Greg M McFarquhar[8], Jianhao Zhang[9], Chuanfeng Zhao[10], Jingjing Tian[11] and Peter Brechner[8], (1)University of Oklahoma Norman Campus, Center for Analysis and Prediction of Storms (CAPS), Norman, United States(2)Nanjing Univerisity of Information Science and Technology (NUIST), Nanjing, China(3)Pacific Northwest National Laboratory, Richland, WA, United States(4)Argonne National Laboratory, Argonne, United States(5)The University of Melbourne, School of Geography, Earth and Atmospheric Sciences and ARC Centre of Excellence for Climate Extremes, Melbourne, Australia(6)Brookhaven National Laboratory, Upton, NY, United States(7)Texas A&M University, College Station, United States(8)Cooperative Institute for Severe and High-Impact Weather Research and Operations, University of Oklahoma, Norman, United States(9)National Oceanic and Atmospheric Administration (NOAA), Chemical Sciences Laboratory, Boulder, United States(10)Peking University, Department of Atmospheric and Oceanic Sciences, Beijing, China(11)Pacific Northwest National Laboratory, Atmospheric Rsch & Measurments, Richland WA, United States

*Session Proposal*
- *Thursday, 12 December 2024*
- *16:00 – 17:30*
- *201 (Convention Center)*

B41G
Advances in Modeling of Terrestrial Ecosystem Carbon and Water Fluxes I Poster
Li Pan, University of Oklahoma, School of Biological Sciences, Norman, United States, Xiangming Xiao, University of Oklahoma Norman Campus, School of Biological Sciences, Center for Earth Observation and Modeling, Norman, United States, Jorge Andres Celis, University of Oklahoma Norman Campus, Norman, OK, United States, Baihong Pan, School of Biological Sciences, Center for Earth Observation and Modeling, University of Oklahoma, Norman, United States and Cheng Meng, University of Oklahoma Norman Campus, School of Biological Sciences, Norman, United States

*Session Proposal*
- *Thursday, 12 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

B43H
Advances in Modeling of Terrestrial Ecosystem Carbon and Water Fluxes II Oral
Li Pan, University of Oklahoma, School of Biological Sciences, Norman, United States, Xiangming Xiao, University of Oklahoma Norman Campus, School of Biological Sciences, Center for Earth Observation and Modeling, Norman, United States, Jorge Andres Celis, University of Oklahoma Norman Campus, Norman, OK, United States, Baihong Pan, School of Biological Sciences, Center for Earth Observation and Modeling, University of Oklahoma, Norman, United States and Cheng

Meng, University of Oklahoma Norman Campus, School of Biological Sciences, Norman, United States
*Session Proposal*
- *Thursday, 12 December 2024*
- *14:10 – 15:40*
- *150 A (Convention Center)*

GC41I
Advancing Representation of Urban Processes and Dynamics in Models Across Scales I Poster
Lei Zhao, University of Illinois at Urbana Champaign, Civil and Environmental Engineering, Urbana, IL, United States, TC Chakraborty, Pacific Northwest National Laboratory, Richland, WA, United States, Scott E. Krayenhoff, University of Guelph, Guelph, ON, Canada, Chenghao Wang, University of Oklahoma, School of Meteorology; Department of Geography and Environmental Sustainability, Norman, OK, United States and Keer Zhang, Yale University, School of the Environment, New Haven, CT, United States
*Session Proposal*
- *Thursday, 12 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

GC44A
Advancing Representation of Urban Processes and Dynamics in Models Across Scales II Oral
Lei Zhao, University of Illinois at Urbana Champaign, Civil and Environmental Engineering, Urbana, IL, United States, TC Chakraborty, Pacific Northwest National Laboratory, Richland, WA, United States, Scott E. Krayenhoff, University of Guelph, Guelph, ON, Canada, Chenghao Wang, University of Oklahoma, School of Meteorology; Department of Geography and Environmental Sustainability, Norman, OK, United States and Keer Zhang, Yale University, School of the Environment, New Haven, CT, United States
*Session Proposal*
- *Thursday, 12 December 2024*
- *16:00 – 17:30*
- *Salon A (Convention Center)*

A42A
Advances in Cloud and Precipitation Processes: Integrating Observations, Modeling, and Theory II Oral
Dr. Yongjie Huang, PhD, University of Oklahoma Norman Campus, Center for Analysis and Prediction of Storms (CAPS), Norman, United States, Chunsong Lu, Nanjing Univerisity of Information Science and Technology (NUIST), Nanjing, China, Peng Wu, Pacific Northwest National Laboratory, Richland, WA, United States, Xiaojian Zheng, Argonne National Laboratory, Argonne, United States, Yi Huang, The University of Melbourne, School of Geography, Earth and Atmospheric Sciences and ARC Centre of Excellence for Climate Extremes, Melbourne, Australia, Yangang Liu, Brookhaven National Laboratory, Upton, NY, United States, Timothy Logan, Texas A&M University, College Station, United States, Greg M McFarquhar, Cooperative Institute for Severe and High-Impact Weather Research and Operations, University of Oklahoma, Norman, United States, Jianhao Zhang, National Oceanic and Atmospheric Administration (NOAA), Chemical Sciences Laboratory, Boulder, United States; University of Colorado, Cooperative Institute for Research in Environmental Sciences (CIRES), Boulder, United States, Chuanfeng Zhao, Peking University, Department of Atmospheric and Oceanic Sciences, Beijing, China, Jingjing Tian, Pacific Northwest National Laboratory, Atmospheric Rsch & Measurments, Richland WA, United States and Jonathan H. Jiang, NASA Jet Propulsion Laboratory, Pasadena, CA, United States
*Session Proposal*

- *Thursday, 12 December 2024*
- *10:20 – 11:50*
- *201 (Convention Center)*

A43O
Advances in Cloud and Precipitation Processes: Integrating Observations, Modeling, and Theory III
Oral

Dr. Yongjie Huang, PhD, University of Oklahoma Norman Campus, Center for Analysis and Prediction of Storms (CAPS), Norman, United States, Chunsong Lu, Nanjing Univerisity of Information Science and Technology (NUIST), Nanjing, China, Peng Wu, Pacific Northwest National Laboratory, Richland, WA, United States, Xiaojian Zheng, Argonne National Laboratory, Argonne, United States, Yi Huang, The University of Melbourne, School of Geography, Earth and Atmospheric Sciences and ARC Centre of Excellence for Climate Extremes, Melbourne, Australia, Yangang Liu, Brookhaven National Laboratory, Upton, NY, United States, Timothy Logan, Texas A&M University, College Station, United States, Greg M McFarquhar, Cooperative Institute for Severe and High-Impact Weather Research and Operations, University of Oklahoma, Norman, United States, Jianhao Zhang, National Oceanic and Atmospheric Administration (NOAA), Chemical Sciences Laboratory, Boulder, United States, Chuanfeng Zhao, Peking University, Department of Atmospheric and Oceanic Sciences, Beijing, China, Jingjing Tian, Pacific Northwest National Laboratory, Atmospheric Rsch & Measurments, Richland WA, United States and Kuan-Man Xu, NASA Langley Research Center, Hampton, VA, United States
*Session Proposal*
- *Thursday, 12 December 2024*
- *14:10 – 15:40*
- *201 (Convention Center)*

GC44B-01
Annual forest cover changes and drivers in the Southwestern United States during 2015-2022 from Analysis of PALSAR, Landsat, and LiDAR dataset

Yuan Yao[1], Xiangming Xiao[2], Yuanwei Qin[1], Jie Wang[3] and Chenchen Zhang[4], (1)Department of Microbiology and Plant Biology, Center for Earth Observation and Modeling, University of Oklahoma, Norman, United States, (2)University of Oklahoma Norman Campus, School of Biological Sciences, Center for Earth Observation and Modeling, Norman, United States, (3)College of Grassland Science and Technology,China Agricultural University, Beijing, China, (4)School of Biological Sciences, Center for Earth Observation and Modeling, University of Oklahoma, Norman, United States
*Abstract*
- *Thursday, 12 December 2024*
- *16:05 – 16:15*
- *Salon H (Convention Center)*

Quantifying urban heat risks through the lens of metrics and indices

Fengwei Hung[1], Jiaorui Zhang[2,3], Danielle Wood[1] and Mohamed Aboelnour[4], (1)University of Notre Dame, Environmental Change Initiative, Notre Dame, United States, (2)University of Notre Dame, Notre Dame, United States, (3)University of Oklahoma, Norman, United States, (4)University of Notre Dame, Department of Civil and Environmental Engineering and Earth Sciences, Notre Dame, IN, United States
*Abstract*
- Thursday, 12 December 2024
- 13:40 – 17:30
- Hall B-C (Poster Hall) (Convention Center)

[Posterior Exploration and Predictive Analysis of Bayesian Finite-Fault Earthquake Models](#)

Jose Viteri Lopez and Junle Jiang, University of Oklahoma Norman Campus, School of Geosciences, Norman, United States
*Abstract*

- *Thursday, 12 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

[Enhancing Subseasonal Precipitation Forecasts through a Hybrid Deep Learning and Statistical Approach](#)

Lujun Zhang, Tiantian Yang, Kendra M Dresback, Christine Szpilka and Randall Lee Kolar, University of Oklahoma Norman Campus, School of Civil Engineering and Environmental Science, Norman, United States
*Abstract*

- Thursday, 12 December 2024
- 08:30 – 12:20
- Hall B-C (Poster Hall) (Convention Center)

[Satellite-Based Gross Primary Production Modeling for Enhanced Sugarcane Yield Estimation](#)

Jorge Andres Celis, University of Oklahoma Norman Campus, Norman, OK, United States, Xiangming Xiao, University of Oklahoma Norman Campus, School of Biological Sciences, Center for Earth Observation and Modeling, Norman, United States, Pradeep Wagle, USDA-ARS, Grazinglands Research Laboratory, El Reno, United States, Paul White, USDA ARS, Houma, LA, United States, Nishan Bhattarai, University of Oklahoma, Department of Geography and Environmental Sustainability, Norman, United States and Brenda Tubana, Louisiana State University, Baton Rogue, United States
*Abstract*

- *Thursday, 12 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

[Innovative Process-Oriented Vertical Profiling for Improved QPE in Flash-Flooding Storms](#)

Jiaxi Hu, Cooperative Institute for Severe and High-Impact Weather Research and Operations, University of Oklahoma, and NOAA/OAR National Severe Storms Laboratory, Norman, Oklahoma, Norman, United States, Pengfei Zhang, Cooperative Institute for Mesoscale Meteorological Studies, University of Oklahoma, Norman, OK, United States and Alexander Ryzhkov, Cooperative Institute for Severe and High-Impact Weather Research and Operations, Norman, United States
*Abstract*

- *Thursday, 12 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

[TASZERS Findings Energize ARM Cloud Retrievals](#)

Connor J. Flynn, University of Oklahoma Norman Campus, Norman, United States, Stephen H Jones, Aerodyne Research Inc., Billerica, MA, United States, Zachary Payne, Aerodyne Research, Inc., Billerica, United States and Timothy Bruce Onasch, Aerodyne Research, Inc., Billerica, MA, United States
*Abstract*

- *Thursday, 12 December 2024*
- *08:00 – 17:30*
- *iPoster Gallery (Online)*

## Enhancing the Representation of Hydrological Processes in an Urban Canopy Model: A Multi-parameterization Approach

Yuqi Huang, University of Oklahoma, School of Meteorology, Norman, OK, United States and Chenghao Wang, University of Oklahoma, School of Meteorology; Department of Geography and Environmental Sustainability, Norman, OK, United States

*Abstract*

- *Thursday, 12 December 2024*
- *16:25 – 16:35*
- *Salon A (Convention Center)*

## Field-scale irrigation technology maps for the U.S., 2000-2020

Yanhua Xie, University of Oklahoma, Geography and Environmental Sustainability, Norman, United States, Tyler J Lark, University of Wisconsin - Madison, Center for Sustainability and the Global Environment (SAGE), Nelson Institute for Environmental Studies, Madison, WI, United States, Lu Liang, University of California Berkeley, Department of Landscape Architecture & Environmental Planning, Berkeley, United States, Xiaohui Yuan, University of North Texas, Computer Science and Engineering, Denton, United States, Richard G Niswonger, USGS Water Resources Mission Area, Menlo Park, United States and Jonathan Haynes, U.S. Geological Survey, Oregon Water Science Center, Portland, OR, United States

*Abstract*

- *Thursday, 12 December 2024*
- *14:50 – 14:58*
- *Salon B (Convention Center)*

## ClimSim-Online: A Large Multi-scale Dataset and Framework for Hybrid ML-physics Climate Emulation

Akshay Subramaniam[1], Sungduk Yu[2], Zeyuan Hu[1,3], Walter M Hannah[4], Liran Peng[2], Jerry Lin[5], Mohamed Aziz Bhouri[6], Ritwik Gupta[7], Björn Lütjens[8], Justus Will[9], Gunnar Behrens[10], Julius Johannes Marian Busecke[11], Nora Loose[12], Charles Stern[13], Tom Beucler[14], Bryce E Harrop[15], Helge Heuer[10], Benjamin R Hillman[16], Andrea M Jenney[17], Nana Liu Ciwro[18], Alistair White[19,20], Tian Zheng[21], Kuang Zhiming[22], Fiaz Ahmed[23], Elizabeth A Barnes[24], Noah Brenowitz[25], Christopher Stephen Bretherton[26], Veronika Eyring[10], Savannah Lee Ferretti[27], Nicholas Lutsko[28], Pierre Gentine[29], Stephan Mandt[30], J David Neelin[31], Rose Yu[32], Laure Zanna[33], Nathan M Urban[34], Janni Yuval[35], Ryan Abernathey[36], Pierre Baldi[37], Wayne Chuang[38], Yu Huang[6], Fernando Iglesias-Suarez[10], Sanket Jantre[39], Po-Lun Ma[40], Sara Shamekh[41], Guang Jun Zhang[42] and Michael Pritchard[25,43], (1)NVIDIA, Santa Clara, United States, (2)University of California Irvine, Earth System Science, Irvine, CA, United States, (3)Harvard University, Department of Earth and Planetary Sciences, Cambridge, MA, United States, (4)Lawrence Livermore National Laboratory, Livermore, CA, United States, (5)University of California, Irvine, Earth System Science, Irvine, United States, (6)Columbia University, Earth and Environmental Engineering, New York, United States, (7)University of California Berkeley, Berkeley, United States, (8)Massachusetts Institute of Technology, Cambridge, MA, United States, (9)University of California Irvine, Irvine, United States, (10)German Aerospace Center DLR Oberpfaffenhofen, Institute of Atmospheric Physics, Oberpfaffenhofen, Germany, (11)LDEO/Columbia University, NYC, United States, (12)Princeton University, Princeton, United States, (13)Lamont Doherty Earth Observatory, Columbia University, Palisades, United States, (14)University of Lausanne, Institute of Earth Surface Dynamics, Lausanne, Switzerland, (15)Pacific Northwest National Laboratory, Atmospheric, Climate, and Earth Sciences Division, Richland, United States, (16)Sandia National Laboratories, Albuquerque, NM, United States, (17)Oregon State University, Corvallis, United States, (18)University of Oklahoma, The Cooperative Institute for Severe and High-Impact Weather Research and

Operations (CIWRO), Norman, United States, (19)Potsdam Institute for Climate Impact Research, Potsdam, Germany, (20)Technical University of Munich, Munich, Germany, (21)Columbia University of New York, Palisades, United States, (22)Harvard University, Cambridge, United States, (23)University of California Los Angeles, Atmospheric and Oceanic Sciences, Los Angeles, United States, (24)Colorado State University, Department of Atmospheric Science, Fort Collins, United States, (25)NVIDIA Corporation, HPC*AI, Santa Clara, United States, (26)Allen Institute for AI, Seattle, United States, (27)University of California Irvine, Earth System Sciences, Irvine, United States, (28)UCSD, Scripps Institution of Oceanography, La Jolla, United States, (29)Columbia University, Department of Earth and Environmental Engineering, New York, NY, United States, (30)University of California Irvine, Computer Science, Irvine, United States, (31)University of California, Los Angeles, Dept. of Atmospheric and Oceanic Sciences, Los Angeles, United States, (32)University of California San Diego, La Jolla, CA, United States, (33)New York University, New York, NY, United States, (34)Brookhaven National Laboratory, Upton, United States, (35)Google, Mountain View, United States, (36)Lamont-Doherty Earth Observatory, Palisades, United States, (37)University of California Irvine, Information and Computer Sciences, Irvine, United States, (38)Columbia University, New York City, United States, (39)Brookhaven National Laboratory, Computational Science Initiative, Upton, NY, United States, (40)Pacific Northwest National Laboratory, Richland, WA, United States, (41)New York University, CAOS, Courant Institute of Mathematical Sciences, New York, NY, United States, (42)Scripps Institution of Oceanography, La Jolla, United States, (43)University of California Irvine, Earth System Science, Irvine, United States

*Abstract*

- *Thursday, 12 December 2024*
- *08:41 – 08:52*
- *Marquis 12-13 (Marriott Marquis)*

PP44B-01

Hydroclimate Trends Since the Little Ice Age in the Tropical-Subtropical Atlantic from Coral Oxygen Isotope Ratios

Dr. Kristine L DeLong, Ph.D.[1,2], Amy J Wagner[3], Kylie Palmer[1], Nina Susich[4], Alexander Ryan[5], Alethia Kielbasa[6], Elinor R Martin[6] and Niall C. Slowey[7], (1)Louisiana State University, Department of Geography and Anthropology, Baton Rouge, LA, United States, (2)Louisiana State University, Coastal Studies Institute, Baton Rouge, LA, United States, (3)California State University Sacramento, Department of Geology, Sacramento, United States, (4)Louisiana State University, Department of Geography and Anthropology, Baton Rouge, United States, (5)California State University Sacramento, Sacramento, United States, (6)University of Oklahoma, School of Meteorology, Norman, United States, (7)Texas A&M University, Oceanography, College Station, United States

*Abstract*

- *Thursday, 12 December 2024*
- *16:00 – 16:10*
- *101 (Convention Center)*

A43Z-02

Dry Environmental Air Accelerates Tropical Cyclogenesis through Radiative Feedbacks

Shun-Nan Wu, University of Oklahoma Norman Campus, Norman, United States and Brian Soden, University of Miami, Miami, FL, United States

*Abstract*

- *Thursday, 12 December 2024*
- *14:23 – 14:34*
- *202 A (Convention Center)*

B42A-03

Tracking Desert Locust Swarms Using Doppler Weather Radars (DWR)

Anjita N a[1], J. Indu[1,2], Thiruvengadam Padmanabhan[3], Vishal Dixit[2], Arpita Rastogi[4] and Bagavath Singh Arul Malar Kannan[4], (1)Indian Institute of Technology Bombay, Civil Engineering, Mumbai, India, (2)Indian Institute of Technology Bombay, Centre for Climate Studies, Mumbai, India, (3)University of Oklahoma, School of Meteorology, Norman, Oklahoma, United States, (4)Indian Meteorological Department, New Delhi, India
*Abstract*

- *Thursday, 12 December 2024*
- *10:50 – 11:00*
- *151 A (Convention Center)*

## MR43B-03
## Energy Evolution During Stick-Slip Events on Rough Experimental Faults

Doron Morad, University of California Santa Cruz, Earth and Planetary Sciences, Santa Cruz, United States, Ze'ev Reches, University of Oklahoma, School of Geosciences, Norman, OK, United States, Amir Sagy, Geological Survey of Israel, Jerusalem, Israel and Yossef H Hatzor, Ben-Gurion University of the Negev, Department of Earth and Environmental Sciences, Beer Sheva, Israel
*Abstract*

- *Thursday, 12 December 2024*
- *14:30 – 14:40*
- *Marquis 1-2 (Marriott Marquis)*

## MR44A-05
## Foreshocks and heterogeneous fault deformation in lab-quakes investigated with slow-motion videos and acoustic emissions

Nicola Tisato, University of Texas at Austin, Austin, TX, United States, Benoit Cordonnier, ESRF European Synchrotron Radiation Facility, Grenoble, France, Isabelle Lambert, The University of Texas at Austin, Austin, United States, Brett Carpenter, University of Oklahoma Norman Campus, School of Geosciences, Norman, United States and Ze'ev Reches, University of Oklahoma, School of Geosciences, Norman, OK, United States
*Abstract*

- *Thursday, 12 December 2024*
- *16:40 – 16:50*
- *Marquis 1-2 (Marriott Marquis)*

## NS44A-08
## Machine learning transfer across different seismic datasets: a key step to subsurface critical lithologies and reservoir productivity/injectivity early prediction in project's timeline

Marcus Maas, PETROBRAS, Rio De Janeiro, Brazil, Heather Bedle, University of Oklahoma, School of Geoscienes, Norman, OK, United States and Elayne Maas, Universidade Federal do Ceará, Fortaleza, Brazil
*Abstract*

- *Thursday, 12 December 2024*
- *17:20 – 17:30*
- *146 A (Convention Center)*

## Moho Depth Variations and Seismic Structures in the Crust and Uppermost Mantle of the Central Midcontinent, USA

Hongyu Xiao, University of Illinois at Urbana Champaign, Department of Geology, Urbana, United States; University of Oklahoma, Norman,OK, United States, Stephen Marshak, University of Illinois at Urbana Champaign, Urbana, IL, United States and Xiaodong Song, School of Earth and Space Sciences, Peking University, Beijing, China
*Abstract*

## Overwhelming wetland reclamation suffer severe flood risks in China in the 21st century

Xi Zhang[1], Jinwei Dong[1], Yiqun Shang[2], Xinxin WANG[3] and Xiangming Xiao[4], (1)Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, Beijing, China, (2)Faculty of Science and Engineering, University of Nottingham Ningbo China, Ningbo, China, (3)Fudan University, Shanghai, China, (4)University of Oklahoma Norman Campus, School of Biological Sciences, Center for Earth Observation and Modeling, Norman, United States
*Abstract*

- Thursday, 12 December 2024
- 08:30 – 12:20
- Hall B-C (Poster Hall) (Convention Center)

## Optimizing Laboratory Measurements for Below-Ground Soil $CO_2$ Isotopes

Martha Jimenez-Castaneda[1], Janine Sparks[1], Jordan Jones[1] and Timothy R Filley[2], (1)The University of Oklahoma, Norman, United States, (2)The University of Oklahoma, Department of Geography and Environmental Sustainability, Norman, United States
*Abstract*

- *Thursday, 12 December 2024*
- *08:00 – 17:30*
- *iPoster Gallery (Online)*

## Linking Climate Change and Water Quality During Low-flows to Implications for Aquatic Ecology and Instream Flow Management Across the United States

Charlotte I Lee, North Carolina State University, Southeast Climate Adaptation Science Center, Raleigh, United States, Yog Aryal, Indiana University Bloomington, Midwest Climate Adaptation Science Center, Bloomington, United States, Megan Behnke, University of Alaska Southeast, Alaska Climate Adaptation Science Center, Juneau, United States, Jennifer Pensky, University of Colorado Boulder, North Central Climate Adaptation Science Center, Boulder, United States, Farah Nusrat, Utah State University, Southwest Climate Adaptation Science Center, Logan, United States and Joshua Wimhurst, University of Oklahoma, South Central Climate Adaptation Science Center, Norman, United States
*Abstract*

- *Thursday, 12 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

## Strategic Deployment of a Single Mobile Weather Radar for the Enhancement of Meteorological Observation: A Coverage-Based Location Problem

Bikram Parajuli, University of Oklahoma Norman Campus, Department of Geography and Environmental Sustainability, Norman, United States and Xin Feng, University of Oklahoma Norman, Norman, United States
*Abstract*

- *Thursday, 12 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

## Thirty years of 3-D urbanization in the Yangtze River Delta, China

Chenglong Yin[1,2], Ruishan Chen[1] and Xiangming Xiao[2], (1)East China Normal University, School of Geographic Sciences, Shanghai, China, (2)University of Oklahoma Norman Campus, School of Biological Sciences, Center for Earth Observation and Modeling, Norman, United States
*Abstract*

- *Thursday, 12 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

### VPM v3.0 model and improved estimates of terrestrial gross primary production from individual eddy flux tower sites to the globe

Li Pan[1], Xiangming Xiao[2], Baihong Pan[3], Cheng Meng[4], Russell Doughty[5], Yuanwei Qin[6], Chenchen Zhang[3], Yuan Yao[6] and Chenglong Yin[7], (1)University of Oklahoma, School of Biological Sciences, Norman, United States, (2)University of Oklahoma Norman Campus, School of Biological Sciences, Center for Earth Observation and Modeling, Norman, United States, (3)School of Biological Sciences, Center for Earth Observation and Modeling, University of Oklahoma, Norman, United States, (4)University of Oklahoma Norman Campus, School of Biological Sciences, Norman, United States, (5)University of Oklahoma, College of Atmospheric and Geographic Sciences, Norman, United States, (6)Department of Microbiology and Plant Biology, Center for Earth Observation and Modeling, University of Oklahoma, Norman, United States, (7)East China Normal University, School of Geographic Sciences, Shanghai, China
*Abstract*

- *Thursday, 12 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

### Overview and Performance of Experimental Real-time RRFS Ensemble Forecasts and AI Products for Rainfall During Summer 2024

Andrew Berrington[1], Keith A Brewster[1], Jun Park[1], Ming Xue[1], Nathan Snook[1] and Marshall R Baldwin[2], (1)University of Oklahoma, Center for Analysis and Prediction of Storms, Norman, United States, (2)University of Oklahoma, School of Meteorology, Norman, United States
*Abstract*

- *Thursday, 12 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

### Influences of Urbanization on Tree Cover and Forest Structure Across Diverse West African Landscapes

Andrews Korah[1], Michael C Wimberly[1] and Sean Crowell[2], (1)University of Oklahoma, Department of Geography and Environmental Sustainability, Norman, United States, (2)LumenUs Scientific, Oklahoma City, United States
*Abstract*

- *Thursday, 12 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

### Warming Experiment Impacts on Soil Moisture with Depth and Time: A Foundation for Future Syntheses

Jeffrey Beem-Miller, University of Michigan/Lawrence Berkeley National Laboratory, Ann Arbor, United States, Chabbi Abad, INRA Institut National de la Recherche Agronomique, Paris Cedex 07, France, Paul J Hanson, Oak Ridge National Laboratory, Environmental Sciences Division and Climate Change Science Institute, Oak Ridge, TN, United States, Peter Reich, University of Michigan, Institute for Global Change Biology, Ann Arbor, United States, William J Riley, Lawrence Berkeley National

Laboratory, Climate & Ecosystem Sciences Division, Berkeley, CA, United States, Andreas Schindlbacher, Bundes Forschungs Zentrum für Wald, Vienna, Austria, Michael W I Schmidt, University of Zurich, Department of Geography, Zurich, Switzerland, Edward Schuur, Northern Arizona University, Department of Biology, Flagstaff, AZ, United States, Serita D Frey, University of New Hampshire, Department of Natural Resources and the Environment, Durham, United States, Bjarni D. Sigurdsson, Agricultural University of Iceland, Borgarnes, Iceland, Margaret S Torn, Berkeley Lab/UC Berkeley, Berkeley, United States, Tana Wood, USDA Forest Service International Institute of Tropical Forestry, Luquillo, United States, Jizhong Zhou, University of Oklahoma, Norman, United States and Biao Zhu, Lawrence Berkeley National Laboratory, Berkeley, CA, United States
*Abstract*

- *Thursday, 12 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

## Soil health responses to land use change in the Peruvian Amazon

Martha Jimenez-Castaneda[1], Zachary Scott Brecheisen[1], Carmen Roman Perez[1], Yuri Arevalo Aranda[2], Julio Alegre[3], Darrell G Schulze[4] and Timothy R Filley[5], (1)The University of Oklahoma, Norman, United States, (2)Instituto Nacional de Innovación Agraria, Tarapoto, Peru, (3)Universidad Nacional Agraria La Molina, Lima, Peru, (4)Purdue University, West Lafayette, United States, (5)The University of Oklahoma, Department of Geography and Environmental Sustainability, Norman, United States
*Abstract*

- *Thursday, 12 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

## Linking Climate Change and Water Quality During Low-flows to Implications for Aquatic Ecology and Instream Flow Management Across the United States

Charlotte I Lee, North Carolina State University, Southeast Climate Adaptation Science Center, Raleigh, United States, Yog Aryal, Indiana University Bloomington, Midwest Climate Adaptation Science Center, Bloomington, United States, Megan Behnke, University of Alaska Southeast, Alaska Climate Adaptation Science Center, Juneau, United States, Jennifer Pensky, University of Colorado Boulder, North Central Climate Adaptation Science Center, Boulder, United States, Farah Nusrat, Utah State University, Southwest Climate Adaptation Science Center, Logan, United States and Joshua Wimhurst, University of Oklahoma, South Central Climate Adaptation Science Center, Norman, United States
*Abstract*

- *Thursday, 12 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

## Snow avalanche impacts on vegetation patterns in a changing climate

Erich Peitzsch, USGS, Northern Rocky Mountain Science Center, West Glacier, United States, Chelsea Martin-Mikle, University of Oklahoma Norman Campus, Norman, OK, United States, Jordy Hendrikx, Montana State University, Earth Sciences, Bozeman, MT, United States, Karl Birkeland, US Forest Service, National Avalanche Center, Bozeman, MT, United States and Daniel B Fagre, Emeritus, USGS Northern Rocky Mountain Science Center, West Glacier, United States
*Abstract*

- *Thursday, 12 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

[Teleconnections and Regional Drivers of Flash Droughts in the Central United States](#)

Daniel Mesheske, University of Oklahoma Norman Campus, Civil Engineering and Environmental Science, Norman, United States, Jordan Christian, University of North Dakota, Atmospheric Sciences, Grand Forks, United States, Jason C Furtado, University of Oklahoma, School of Meterology, Norman, OK, United States, Jeffrey B Basara, University of Massachusetts Lowell, Department of Earth, Environment, and Atmospheric Sciences, Lowell, MA, United States, Taylor M Grace, University of Oklahoma, School of Meteorology, Norman, OK, United States, Benjamin Fellman, University of Oklahoma, Rockville, MD, UNITED STATES and Paul X Flanagan, University of Oklahoma Norman Campus, Norman, United States

*Abstract*

- *Thursday, 12 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

[The Impact of Anthropause During COVID-19 on the Activity of Avian Influenza Host Birds](#)

Qiang Zhang[1,2], Jinwei Dong[1] and Xiangming Xiao[3], (1)Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, Beijing, China, (2)University of Chinese Academy of Sciences, Beijing, China, (3)University of Oklahoma Norman Campus, School of Biological Sciences, Center for Earth Observation and Modeling, Norman, United States

*Abstract*

- *Thursday, 12 December 2024*
- *08:00 – 17:30*
- *iPoster Gallery (Online)*

**Friday, December 13, 2024**

[Evaluating NASA's Statistically Downscaled Products to Assess FEMA's National Risk Index in Oklahoma Under a Changing Climate](#)

Hugo Lee, NASA Jet Propulsion Laboratory, Pasadena, CA, United States, Emiliano G Santin, Federal Emergency Management Agency, Washington, United States, Adrienne Wootten, South Central Climate Adaptation Science Center, University of Oklahoma, Norman, OK, United States, Casey Zuzak, Federal Emergency Management Agency, Natural Hazards Risk Assessment Program, Washington, D.C., United States and Tsengdar J Lee, NASA, Burke, VA, United States

*Abstract*

- *Friday, 13 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

[Micro- and Macro-Habitat Influences on Tick Abundance in Oklahoma City Urban Parks](#)

Anni Yang[1], Melissa Marquez[1], Himel Talukder[1], Wenwen Cheng[2], Daniel Becker[1] and Michael C Wimberly[3], (1)University of Oklahoma, Norman, United States, (2)University of Wisconsin-Madison, Madison, United States, (3)University of Oklahoma, Department of Geography and Environmental Sustainability, Norman, United States

*Abstract*

- *Friday, 13 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

[Examining the Role of Clouds in the Seasonal Comparison of CERES- and Oklahoma Mesonet-Derived Downward Shortwave Surface Radiation Fluxes from 2018-2022](#)

Bradley Lamkin[1], Jens Redemann[1], Connor J. Flynn[1], Ian Chang[2], Lan Gao[1], Seiji Kato[3], Paul W Stackhouse Jr[4] and Brad Illston[5], (1)University of Oklahoma, School of Meteorology, Norman, United

States, (2)University of North Carolina at Charlotte, Earth, Environmental, and Geographical Sciences, Charlotte, NC, United States, (3)NASA Langley Research Ctr, Hampton, United States, (4)NASA Langley Research Center, Hampton, VA, United States, (5)University of Oklahoma, Oklahoma Mesonet, Norman, United States

*Abstract*

- *Friday, 13 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

A51L

Advancing Precipitation Predictions with Physical Models and Artificial Intelligence I Poster

Xiaodong Chen, Pacific Northwest National Laboratory, Atmospheric, Climate, and Earth Sciences, Richland, WA, United States, Tiantian Yang, University of Oklahoma Norman Campus, School of Civil Engineering and Environmental Science, Norman, United States, Kelly M Mahoney, Cooperative Institute for Research in Environmental Sciences, Boulder, United States, Ming Pan, University of California San Diego, Scripps Institution of Oceanography, Center for Western Weather and Water Extremes, La Jolla, United States and Nana Liu Ciwro, University of Oklahoma, The Cooperative Institute for Severe and High-Impact Weather Research and Operations (CIWRO), Norman, United States

*Session Proposal*

- *Friday, 13 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

GC51O

Forest Cover Dynamics, Drivers, and Impacts Under Diverse Human Activities and Climate Change I Poster

Yuanwei Qin, University of Oklahoma Norman Campus, Norman, United States, Yuan Yao, Department of Microbiology and Plant Biology, Center for Earth Observation and Modeling, University of Oklahoma, Norman, United States, Fang Liu, University of Oklahoma, Norman, United States, Xiangming Xiao, University of Oklahoma Norman Campus, School of Biological Sciences, Center for Earth Observation and Modeling, Norman, United States and Chenchen Zhang, School of Biological Sciences, Center for Earth Observation and Modeling, University of Oklahoma, Norman, United States

*Session Proposal*

- *Friday, 13 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

A53D

Aerosol, Cloud, Precipitation, and Radiation Studies over High-Latitude Oceans I Poster

Greg M McFarquhar[1], Sarah Woods[2], Adriana Raudzens Bailey[3] and Andrew Dzambo[1], (1)Cooperative Institute for Severe and High-Impact Weather Research and Operations, University of Oklahoma, Norman, United States(2)National Center for Atmospheric Research, Boulder, United States(3)University of Michigan, Climate and Space Sciences and Engineering, Ann Arbor, MI, United States

*Session Proposal*

- *Friday, 13 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

B52A

## Advances in Understanding Land System Change I Oral

George Z Xian, USGS Earth Resources Observation and Science (EROS) Center Sioux Falls, ISAB, Sioux Falls, SD, United States, Amy E East, USGS San Diego Field Station, San Diego, United States and Xiangming Xiao, University of Oklahoma Norman Campus, School of Biological Sciences, Center for Earth Observation and Modeling, Norman, United States

*Session Proposal*

- *Friday, 13 December 2024*
- *10:20 – 11:50*
- *149 A-B (Convention Center)*

## B53A
## Advances in Understanding Land System Change II Poster

George Z Xian, USGS Earth Resources Observation and Science (EROS) Center Sioux Falls, ISAB, Sioux Falls, SD, United States, Amy E East, USGS San Diego Field Station, San Diego, United States and Xiangming Xiao, University of Oklahoma Norman Campus, School of Biological Sciences, Center for Earth Observation and Modeling, Norman, United States

*Session Proposal*

- *Friday, 13 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

## GC53K
## Forest Cover Dynamics, Drivers, and Impacts Under Diverse Human Activities and Climate Change II Oral

Yuanwei Qin, University of Oklahoma Norman Campus, Norman, United States, Yuan Yao, Department of Microbiology and Plant Biology, Center for Earth Observation and Modeling, University of Oklahoma, Norman, United States, Fang Liu, University of Oklahoma, Norman, United States, Xiangming Xiao, University of Oklahoma Norman Campus, School of Biological Sciences, Center for Earth Observation and Modeling, Norman, United States and Chenchen Zhang, School of Biological Sciences, Center for Earth Observation and Modeling, University of Oklahoma, Norman, United States

*Session Proposal*

- *Friday, 13 December 2024*
- *14:10 – 15:40*
- *Salon H (Convention Center)*

## A54B
## Advancing Precipitation Predictions with Physical Models and Artificial Intelligence II Oral

Xiaodong Chen, Pacific Northwest National Laboratory, Atmospheric, Climate, and Earth Sciences, Richland, WA, United States, Tiantian Yang, University of Oklahoma Norman Campus, School of Civil Engineering and Environmental Science, Norman, United States, Kelly M Mahoney, Cooperative Institute for Research in Environmental Sciences, Boulder, United States, Ming Pan, University of California San Diego, Scripps Institution of Oceanography, Center for Western Weather and Water Extremes, La Jolla, United States and Nana Liu Ciwro, University of Oklahoma, The Cooperative Institute for Severe and High-Impact Weather Research and Operations (CIWRO), Norman, United States

*Session Proposal*

- *Friday, 13 December 2024*
- *16:00 – 17:30*
- *152 A (Convention Center)*

## A54C
## Aerosol, Cloud, Precipitation, and Radiation Studies over High-Latitude Oceans II Oral

Greg M McFarquhar[1], Sarah Woods[2], Adriana Raudzens Bailey[3] and Andrew Dzambo[1], (1)Cooperative Institute for Severe and High-Impact Weather Research and Operations, University of Oklahoma, Norman, United States(2)National Center for Atmospheric Research, Boulder, United States(3)University of Michigan, Climate and Space Sciences and Engineering, Ann Arbor, MI, United States

*Session Proposal*

- *Friday, 13 December 2024*
- *16:00 – 17:30*
- *152 B (Convention Center)*

## Water-related Land Cover Mapping through Multi-Source Remote Sensing and GeoAI

Chenchen Zhang[1], Xiangming Xiao[2], Leikun Yin[3], Xinxin WANG[4], Yuanwei Qin[5], Cheng Meng[6], Yuan Yao[5], Li Pan[7], Baihong Pan[8] and Jinwei Dong[9], (1)School of Biological Sciences, Center for Earth Observation and Modeling, University of Oklahoma, Norman, OK, United States, (2)University of Oklahoma Norman Campus, School of Biological Sciences, Center for Earth Observation and Modeling, Norman, United States, (3)University of Minnesota-Twin Cities, Department of Bioproducts and Biosystems Engineering, Saint Paul, MN, United States, (4)Fudan University, Shanghai, China, (5)Department of Microbiology and Plant Biology, Center for Earth Observation and Modeling, University of Oklahoma, Norman, United States, (6)University of Oklahoma Norman Campus, School of Biological Sciences, Norman, United States, (7)University of Oklahoma, School of Biological Sciences, Norman, United States, (8)School of Biological Sciences, Center for Earth Observation and Modeling, University of Oklahoma, Norman, United States, (9)Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, Beijing, China

*Abstract*

- *Friday, 13 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

## Evaluating Groundwater Mitigation Effectiveness Using Counterfactual AI Analysis

Chetan Sharma[1], Hakan Basagaoglu[2], Icen Yoosefdoost[1], Adrienne Wootten[3], Debarati Chakraborty[4], F. Paul Bertetti[2], Ali Mirchi[5] and Debaditya Chakraborty[1], (1)University of Texas at San Antonio, School of Civil and Environmental Engineering, and Construction Management, San Antonio, TX, United States, (2)Edwards Aquifer Authority, San Antonio, TX, United States, (3)South Central Climate Adaptation Science Center, University of Oklahoma, Norman, OK, United States, (4)University of Texas at San Antonio, Department of Demography, San Antonio, United States, (5)Oklahoma State University, Department of Biosystems and Agricultural Engineering, Stillwater, United States

*Abstract*

- *Friday, 13 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

## The impact of marine aerosol to refinery emissions on cloud microphysical properties during ESCAPE

Gregory C Roberts[1], Keyvan Ranjbar[2], Leonid Nichman[3], Mengistu Wolde[4], Nithin Allwayin[5], Raymond A Shaw[6], Saurabh Patil[7], Greg M McFarquhar[7] and Pavlos Kollias[8], (1)Scripps Institution of Oceanography, La Jolla, CA, United States, (2)National Research Council Canada, Ottawa, ON, Canada, (3)National Research Council Canada, Ottawa, Canada, (4)National Research Council Canada, Flight Research Laboratory, Ottawa, ON, Canada, (5)Michigan Technological University, Houghton, MI, United States, (6)Michigan Technological University, Houghton, United States, (7)Cooperative Institute for Severe and High-Impact Weather Research and Operations, University of Oklahoma, Norman, United States, (8)Stony Brook University, Stony Brook, NY, United States

*Abstract*

- *Friday, 13 December 2024*

- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

## Utilizing Convolutional Neural Networks to Develop a Derecho Climatology for the U.S. (2004-2021)

Jianfeng Li[1], Andrew Geiss[2], Zhe Feng[1], L. Ruby Leung[2], Yun Qian[1] and Wenjun Cui[3], (1)Pacific Northwest National Laboratory, Richland, WA, United States, (2)Pacific Northwest National Laboratory, Richland, United States, (3)Cooperative Institute for Severe and High-Impact Weather Research and Operations, University of Oklahoma, Norman, United States

*Abstract*

- *Friday, 13 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

## GC51F-03
## Characterizing Compound Heat and Ozone Pollution Episodes in U.S. Cities

Chenghao Wang, University of Oklahoma, School of Meteorology; Department of Geography and Environmental Sustainability, Norman, United States, Xiao-Ming Hu, University of Oklahoma Norman Campus, Center for Analysis and Prediction of Storms, Norman, OK, United States and Jessica Leffel, University of Oklahoma, School of Meteorology, Norman, United States

*Abstract*

- *Friday, 13 December 2024*
- *08:50 – 09:00*
- *Salon A (Convention Center)*

## GC52F-05
## Urban Vegetation Gross Primary Production Data Product from Vegetation Photosynthesis Model

Xiangming Xiao, University of Oklahoma Norman Campus, School of Biological Sciences, Norman, United States, Li Pan, University of Oklahoma, School of Biological Sciences, Norman, United States, Yao Zhang, Peking University, Sino-French Institute for Earth System Science, College of Urban and Environmental Sciences, Beijing, China and Yaoping Cui, Key Laboratory of Geospatial Technology for the Middle and Lower Yellow River Regions, Kaifeng, China

*Abstract*

- *Friday, 13 December 2024*
- *11:00 – 11:10*
- *Salon A (Convention Center)*

## P52A-09
## AI/ML Models and Tools for Processing and Analysis of Observational Data from the Habitable Worlds Observatory

Megan Ansdell[1], Ehsan Gharib-Nezhad[2], Gautier Bardi de Fourtou[3], Steven Dillmann[4], Bruce Dean[5], Mario Damiano[6], Aidan Foreman[7], Cecilia Garraffo[8], Mahdi Habibi[9], Wenli Mo[10], Miguel Martinho[11], Aquib Moin[12], Mark M. Moussa[13], Rafael Martínez-Galarza[14], John Wu[15], Megan Shabram[16], Victoria Da Poian[17], Emilio Salazar-Donate[18], Mainak Singha[19], Virisha Timmaraju[20], Gioia Rau[5], Hamed Valizadegan[2] and Anuj Patel[21], (1)NASA Headquarters, Science Mission Directorate, Washington, United States, (2)NASA Ames Research Center, Moffett Field, United States, (3)Mines Paris - PSL university, Paris, France, (4)Imperial College London, London, United Kingdom, (5)NASA Goddard Space Flight Center, Greenbelt, United States, (6)Jet Propulsion Laboratory, California Institute of Technology, Pasadena, United States, (7)University of Oklahoma Norman Campus, Norman, United States, (8)Harvard-Smithsonian Center for Astrophysics, Cambridge, MA, United States, (9)Helmholtz-Zentrum Dresden-Rossendorf, Institute for Radiation Physics, Dresden, Germany, (10)Johns Hopkins University Applied Physics Laboratory, Laurel, MD, United States, (11)Universities Space Research Association Moffett Field, Moffett Field, United States, (12)United Arab Emirates

University, Al Ain, United Arab Emirates, (13)NASA Goddard Space Flight Center, Community Coordinated Modeling Center, Greenbelt, MD, United States, (14)Harvard-Smithsonian Center for Astrophysics, Cambridge, United States, (15)Space Telescope Science Institute, Baltimore, United States, (16)Giant Magellan Telescope, Pasadena, United States, (17)Microtel LLC, Greenbelt, United States, (18)ATG Europe, Noordwijk, Netherlands, (19)Catholic University of America, Washington, United States, (20)NASA Jet Propulsion Laboratory, Pasadena, CA, United States, (21)University of California Irvine, Irvine, United States

*Abstract*

- *Friday, 13 December 2024*
- *11:40 – 11:50*
- *Liberty M (Marriot Marquis)*

## Spectral Transformers for EMIT Methane Retrieval

Jake Lee[1], Brian Bue[1], Philip G Brodrick[2], Andrew K Thorpe[1], William Keely[1,3], Michael Kiper[1] and Jay Fahlen[1], (1)Jet Propulsion Laboratory, California Institute of Technology, Pasadena, United States, (2)NASA Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, United States, (3)University of Oklahoma, Data Science & Analytics Institute, Norman, United States

*Abstract*

- *Friday, 13 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

## Conserved biopolymers help estimate invasive scarab impact on soil carbon transformations

Gordon MacLeod, Purdue University, Agronomy, West Lafayette, IN, United States, Martha Jimenez-Castaneda, University of Oklahoma, Norman, United States, Douglas Richmond, Purdue University, Entomology, West Lafayette, United States and Timothy R Filley, The University of Oklahoma, Department of Geography and Environmental Sustainability, Norman, United States

*Abstract*

- *Friday, 13 December 2024*
- *08:00 – 17:30*
- *iPoster Gallery (Online)*

## A54J-06
## Quantifying Tropopause-Overshooting Volume from Satellite and Radar Observations during DCOTSS 2021 and 2022 Campaigns

Kyle Frederick Itterly, Analytical Mechanics Associates, Hampton, United States, Kristopher M Bedka, NASA Langley Research Center, Climate Science Branch, Hampton, VA, United States and Cameron R Homeyer, University of Oklahoma, School of Meteorology, Norman, OK, United States

*Abstract*

- *Friday, 13 December 2024*
- *16:50 – 17:00*
- *Ballroom C (Convention Center)*

## GC53N-01
## Hydrometeorological Evaluation of a Continental-Scale Convection-Permitting Simulation Across Urban Environments

Liam Thompson and Chenghao Wang, University of Oklahoma, School of Meteorology; Department of Geography and Environmental Sustainability, Norman, United States

Abstract

- *Friday, 13 December 2024*
- *14:10 – 14:20*
- *Salon A (Convention Center)*

OS51A-08
## A Framework for Multi-Objective Optimization for Equitable Recovery in Hurricane-Impacted Communities

Abdullah Braik[1], Himadri Sen Gupta[2], Maria Koliou[3] and Andrés González[2], (1)Texas A&M University College Station, Zachry Department of Civil and Environmental Engineering, College Station, TX, United States, (2)University of Oklahoma Norman Campus, School of Industrial and Systems Engineering, Norman, United States, (3)Texas A&M University College Station, Zachry Department of Civil and Environmental Engineering, College Station, United States
*Abstract*

- *Friday, 13 December 2024*
- *09:40 – 09:50*
- *156 (Convention Center)*

## Optimizing Laboratory Measurements for Below-Ground Soil $CO_2$ Isotopes

Martha Jimenez-Castaneda[1], Janine Sparks[1], Jordan Jones[1] and Timothy R Filley[2], (1)The University of Oklahoma, Norman, United States, (2)The University of Oklahoma, Department of Geography and Environmental Sustainability, Norman, United States
*Abstract*

- *Friday, 13 December 2024*
- *08:00 – 17:30*
- *iPoster Gallery (Online)*

## The Impact of Anthropause During COVID-19 on the Activity of Avian Influenza Host Birds

Qiang Zhang[1,2], Jinwei Dong[1] and Xiangming Xiao[3], (1)Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, Beijing, China, (2)University of Chinese Academy of Sciences, Beijing, China, (3)University of Oklahoma Norman Campus, School of Biological Sciences, Center for Earth Observation and Modeling, Norman, United States
*Abstract*

- *Friday, 13 December 2024*
- *08:00 – 17:30*
- *iPoster Gallery (Online)*

## Dependence of Convective Cloud Microphysical Properties on Environmental Parameters during the TRACER and ESCAPE Field Campaigns: A Synergistic Approach of Observations, Machine Learning and Numerical Models

Dr. Yongjie Huang, PhD[1], Greg M McFarquhar[2], Saurabh Patil[2], Lan Gao[3], Mateusz Taszarek[4], Ming Xue[5], Andrew Dzambo[2], Mengistu Wolde[6], Leonid Nichman[7], Cuong Nguyen[8], Keyvan Ranjbar[8], Natalia Bliankinshtein[9], Kenny Bala[8], Pavlos Kollias[10] and Michael P Jensen[11], (1)University of Oklahoma Norman Campus, Center for Analysis and Prediction of Storms (CAPS), Norman, United States, (2)Cooperative Institute for Severe and High-Impact Weather Research and Operations, University of Oklahoma, Norman, United States, (3)University of Oklahoma, School of Meteorology, Norman, United States, (4)Adam Mickiewicz University, Poznań, Poland, (5)University of Oklahoma, Center for Analysis and Prediction of Storms, Norman, United States, (6)National Research Council Canada, Flight Research Laboratory, Ottawa, ON, Canada, (7)National Research Council Canada, Ottawa, Canada, (8)National Research Council Canada, Ottawa, ON, Canada, (9)McGill University, Montreal, QC, Canada, (10)Stony Brook University, Stony Brook, NY, United States, (11)Brookhaven National Laboratory, Upton, United States
*Abstract*

- *Friday, 13 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

[Estimating and Assessing Severe Tornado Tracks in the US using Daily satellite images](#)

Di Liu, University of Oklahoma, Center for Spatial Analysis, Norman, United States and Chengbin Deng, University of Oklahoma, Center for Spatial Analysis; Department of Geography and Environmental Sustainability, Norman, United States

*Abstract*

- *Friday, 13 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

[A51B-08](#)

[A Theoretical Approach to Understanding Relationships between Cloud Condensation Nuclei (CCN) Concentrations and Lidar Aerosol Backscatter](#)

Emily Lenhardt[1], Jens Redemann[2], Lan Gao[2], Feng Xu[3], Sharon P Burton[4], Brian Cairns[5], Richard Anthony Ferrare[4], Chris A Hostetler[4], Richard Moore[4], Luke D Ziemba[4], Ewan Crosbie[6], Steven G Howell[7], Snorre Stamnes[8], Mary Kacarab[9], Jenny Wong[10] and Athanasios Nenes[11], (1)University of Oklahoma Norman Campus, Norman, United States, (2)University of Oklahoma, School of Meteorology, Norman, United States, (3)University of Oklahoma, School of Meteorology, Norman, OK, United States, (4)NASA Langley Research Center, Hampton, VA, United States, (5)NASA Goddard Institute for Space Studies, New York, NY, United States, (6)University of Arizona, Tucson, United States, (7)University of Hawaii at Manoa, Oceanography, Honolulu, HI, United States, (8)NASA Langley Research Center, Hampton, United States, (9)University of California Riverside, Riverside, CA, United States, (10)Mount Allison University, Sackville, NB, Canada, (11)Ecole Polytechnique Federale de Lausanne, School of Architecture, Civil and Environmental Engineering (ENAC), Laboratory of Atmospheric Processes and their Impacts (LAPI), Lausanne, Switzerland

*Abstract*

- *Friday, 13 December 2024*
- *09:45 – 09:55*
- *201 (Convention Center)*

[A52I-01](#)

[Regional Variations in the Evolution of Wildfire Smoke and the Potential Radiative Forcing Impacts](#)

Abdulamid Fakoya[1], Jens Redemann[1], Connor J. Flynn[1], Lan Gao[1], Wenfu Tang[2], Simone Tilmes[3] and Pablo Saide[4], (1)University of Oklahoma, School of Meteorology, Norman, United States, (2)National Center for Atmospheric Research (NCAR), Atmospheric Chemistry Observations & Modeling Laboratory (ACOM), Boulder,CO, United States, (3)NSF National Center for Atmospheric Research, Atmospheric Chemistry Observations and Modeling Laboratory, Boulder, United States, (4)University of California Los Angeles, Department of Atmospheric and Oceanic Sciences, Los Angeles, United States

*Abstract*

- *Friday, 13 December 2024*
- *10:20 – 10:23*
- *eLightning Theater 1 (Convention Center)*

[A53AA-06](#)

[ACT 2.0: Empowering Atmospheric Research with Community-Driven Software](#)

Adam Theisen[1], Ken Kehoe[2], Zachary Sherman[3], Maxwell Grover[4], Corey Godine[5], Alyssa Sockol[5], Joseph Robert O'Brien[6], Jenni Kyrouac[3], Maxwell Levin[7], Denny Hackel[8] and Michael Giansiracusa[9], (1)Organization Not Listed, Washington, DC, United States, (2)University of Oklahoma, Norman, OK, United States, (3)Argonne National Laboratory, Argonne, United States, (4)Argonne National Laboratory, Argonne, IL, United States, (5)University of Oklahoma Norman Campus, Cooperative Institute for Severe and High-Impact Weather Research and Operations (CIWRO), Norman, United

States, (6)Argonne National Laboratory, Lemont, IL, United States, (7)Pacific Northwest National Laboratory, Richland, United States, (8)University of Wisconsin Madison, Madison, WI, United States, (9)Oak Ridge National Laboratory, Oak Ridge, United States

*Abstract*

- *Friday, 13 December 2024*
- *14:22 – 14:25*
- *eLightning Theater 1 (Convention Center)*

[Use of L-band Synthetic Aperture Radar and Optical Images at High Spatial Resolution for National and Global Forest Resources Assessment](#)

Xiangming Xiao[1], Jie Wang[2], Yuan Yao[3] and Yuanwei Qin[3], (1)University of Oklahoma Norman Campus, School of Biological Sciences, Norman, United States, (2)College of Grassland Science and Technology,China Agricultural University, Beijing, China, (3)Department of Microbiology and Plant Biology, Center for Earth Observation and Modeling, University of Oklahoma, Norman, United States

*Abstract*

- *Friday, 13 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

[What is the Relationship Between Precipitation and Groundwater in Private Wells in Southern Alabama?](#)

Caroline Beisher, Barnard College, New York, United States, Ann Sullivan Ojeda, University of Oklahoma Norman Campus, Norman, OK, United States, Frances C O'Donnell, Auburn University, Civil Engineering, Auburn, AL, United States and Abraham Alejandro Alvarez Reyna, Auburn University, Civil and Environmental Engineering, Auburn, United States

*Abstract*

- *Friday, 13 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

[An Overview of the Cold-Air outbrEaks over the Sub-Arctic Region (CAESAR) campaign](#)

Paquita Zuidema[1], Bart Geerts[2], Greg M McFarquhar[3], Adriana Bailey[4], Kevin Robert Barry[5], John J Cassano[6], Carol Costanza[7], James D Doyle[8], Samuel Ephraim[9], Andrew Dzambo[3], Jeffrey French[2], Coltin Grasmick[10], Emma Järvinen[11], Timothy W Juliano[12], Ryan J Patnaude[13], Russell Perkins[14], Markus D Petters[15], Elise Rosky[16], Jefferson Snider[10], Gunilla Svensson[17], Michael K H Tjernstrom[17], Florian Tornow[18], Patrick Veres[19], Yonggang Wang[20], Zhien Wang[21], Sarah Woods[22] and Lulin Xue[23], (1)University of Miami, Rosenstiel School, Miami, FL, United States, (2)University of Wyoming, Atmospheric Science, Laramie, United States, (3)Cooperative Institute for Severe and High-Impact Weather Research and Operations, University of Oklahoma, Norman, United States, (4)University of Michigan Ann Arbor, Ann Arbor, United States, (5)Colorado State University, Department of Atmospheric Science, Fort Collins, United States, (6)Univ Colorado, Boulder, United States, (7)National Center for Atmospheric Research, Earth Observing Laboratory, Boulder, United States, (8)NRL, Monterey, United States, (9)Rosenstiel School, University of Miami, Miami, United States, (10)University of Wyoming, Atmospheric Science, Laramie, WY, United States, (11)Karlsruhe Institute of Technology, Institute of Meteorology and Climate Research, Karlsruhe, Germany, (12)National Center for Atmospheric Research, Boulder, CO, United States, (13)Colorado State University, Fort Collins, CO, United States, (14)University of Colorado at Boulder, Boulder, United States, (15)University of California Riverside, Riverside, United States, (16)University of Michigan Ann Arbor, Climate and Space Sciences and Engineering, Ann Arbor, United States, (17)Stockholm University, Department of Meteorology, Stockholm, Sweden, (18)Columbia University of New York, Palisades, United States, (19)National Oceanic and Atmospheric Administration, Boulder, United States,

(20)SUNY College at Oswego, Atmospheric and Geological Sciences, Oswego, NY, United States, (21)Stony Brook University, School of Marine and Atmospheric Sciences, Stony Brook, United States, (22)National Center for Atmospheric Research, Boulder, United States, (23)National Center for Atmospheric Research, Research Applications Laboratory, Boulder, CO, United States
*Abstract*

- *Friday, 13 December 2024*
- *13:40 – 17:30*
- *Hall B-C0 (Poster Hall) (Convention Center)*

## Climatology of Synoptic Conditions for Flash-Flood-Producing Mesoscale Convective Systems

Wenjun Cui, Cooperative Institute for Severe and High-Impact Weather Research and Operations, University of Oklahoma, Norman, United States; NOAA/OAR National Severe Storms Laboratory, Norman, United States, Zhanxiang Hua, University of Washington Seattle Campus, Department of Atmospheric and Climate Science, Seattle, United States, Thomas Galarneau Jr., NOAA National Severe Storms Laboratory, Norman, United States and Zhe Feng, Pacific Northwest National Laboratory, Richland, WA, United States
*Abstract*

- *Friday, 13 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

## The Biophysical and Environmental Impacts of Hydraulic Fracturing: A Spatiotemporal Analysis Using Remotely Sensed Data

Nastaran Abdoli, Norman, OK, UNITED STATES, Nishan Bhattarai, University of Oklahoma, Department of Geography and Environmental Sustainability, Norman, United States and Jennifer Koch, University of Oklahoma, Department of Geography and Environmental Sustainability, Norman, OK, United States
*Abstract*

- *Friday, 13 December 2024*
- *13:40 – 17:30*
- *Hall B-C (Poster Hall) (Convention Center)*

## Observations of the Eastern Shear Margin of Thwaites Glacier from controlled-source and passive-source seismic studies

Marianne S. Karplus[1], Lucia Fernanda Gonzalez[1], Daniel Francis May[2], Emma C Smith[3], Galen Kaip[1], Solymar Ayala Cortez[1], Yeshey Seldon[1], Andrew Pretorius[3], Jacob I Walter[4], Nori Nakata[5], Adam D Booth[3], Slawek M Tulaczyk[6], Tun Jan Young[7] and Thwaites Interdisciplinary Margin Evolution (TIME) Team, (1)University of Texas at El Paso, Department of Earth, Environmental, and Resource Sciences, El Paso, United States, (2)Stanford University, Department of Geophysics, Stanford, United States, (3)University of Leeds, Leeds, United Kingdom, (4)University of Oklahoma, Oklahoma Geological Survey, Norman, United States, (5)Lawrence Berkeley National Laboratory, Earth and Environmental Sciences Area, Berkeley, United States, (6)University of California Santa Cruz, Earth and Planetary Sciences, Santa Cruz, United States, (7)University of St Andrews, School of Geography and Sustainable Development, St Andrews, United Kingdom
*Abstract*

- *Friday, 13 December 2024*
- *08:30 – 12:20*
- *Hall B-C (Poster Hall) (Convention Center)*

## A54C-01
## Mixed Phase Aerosol-Cloud Interactions over the Southern Ocean

Christina S McCluskey[1], Qing Niu[2], Cecile Hannay[3], Jesse M Nusbaumer[3], Brian Medeiros[4], Greg M McFarquhar[5], Will Chapman[6], Megan Devlan Fowler[7], Benjamin Stephens[8], Dao Wang[9], Alain

Protat[10] and Gerald G Mace[11], (1)University Corporation for Atmospheric Research, Boulder, United States, (2)University of Oklahoma Norman Campus, Norman, OK, United States, (3)National Center for Atmospheric Research, Climate and Global Dynamics Laboratory, Boulder, United States, (4)National Center for Atmospheric Research, Climate and Global Dynamics Laboratory, Boulder, CO, United States, (5)Cooperative Institute for Severe and High-Impact Weather Research and Operations, University of Oklahoma, Norman, United States, (6)NSF National Center for Atmospheric Research, Boulder, CO, United States, (7)University of California Irvine, Irvine, United States, (8)National Center for Atmospheric Research, Boulder, United States, (9)San Jose State University, Meteorology and Climate Science, San Jose, CA, United States, (10)Bureau of Meteorology, Melbourne, Australia, (11)University of Utah, Salt Lake City, UT, United States
*Abstract*

- *Friday, 13 December 2024*
- *16:05 – 16:15*
- *152 B (Convention Center)*

H53T-01

A Mass Conservation Relaxed (MCR) LSTM Model for Streamflow Simulation: A Large-Scale Verification over 531 Watersheds across CONUS

Tiantian Yang[1], Yihan Wang[1], Lujun Zhang[1] and N. Benjamin Erichson[2,3], (1)University of Oklahoma Norman Campus, School of Civil Engineering and Environmental Science, Norman, United States, (2)Lawrence Berkeley National Laboratory, Berkeley, United States, (3)International Computer Science Institute, Berkeley, United States
*Abstract*

- *Friday, 13 December 2024*
- *14:10 – 14:20*
- *144 A-C (Convention Center)*