

## American Geophysical Union Fall Meeting

December 9 – 13, 2024, Washington D.C.

The University of Oklahoma

### 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**<sup>1</sup>, **Melissa Marquez**<sup>1</sup>, **Himel Talukder**<sup>1</sup>, Wenwen Cheng<sup>2</sup>, **Daniel Becker**<sup>1</sup> and **Michael C Wimberly**<sup>3</sup>, (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**<sup>1</sup>, **Jens Redemann**<sup>1</sup>, **Connor J. Flynn**<sup>1</sup>, Ian Chang<sup>2</sup>, **Lan Gao**<sup>1</sup>, Seiji Kato<sup>3</sup>, Paul W Stackhouse Jr<sup>4</sup> and **Brad Illston**<sup>5</sup>, (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**<sup>1</sup>, Sarah Woods<sup>2</sup>, Adriana Raudzens Bailey<sup>3</sup> and **Andrew Dzambo**<sup>1</sup>, (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**<sup>1</sup>, Sarah Woods<sup>2</sup>, Adriana Raudzens Bailey<sup>3</sup> and **Andrew Dzambo**<sup>1</sup>, (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**<sup>1</sup>, **Xiangming Xiao**<sup>2</sup>, Leikun Yin<sup>3</sup>, Xinxin WANG<sup>4</sup>, **Yuanwei Qin**<sup>5</sup>, **Cheng Meng**<sup>6</sup>, **Yuan Yao**<sup>5</sup>, **Li Pan**<sup>7</sup>, **Baihong Pan**<sup>8</sup> and Jinwei Dong<sup>9</sup>, (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<sup>1</sup>, Hakan Basagaoglu<sup>2</sup>, Icen Yoosefdoost<sup>1</sup>, **Adrienne Wootten**<sup>3</sup>, Debarati Chakraborty<sup>4</sup>, F. Paul Bertetti<sup>2</sup>, Ali Mirchi<sup>5</sup> and Debaditya Chakraborty<sup>1</sup>, (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<sup>1</sup>, Keyvan Ranjbar<sup>2</sup>, Leonid Nichman<sup>3</sup>, Mengistu Wolde<sup>4</sup>, Nithin Allwayin<sup>5</sup>, Raymond A Shaw<sup>6</sup>, **Saurabh Patil**<sup>7</sup>, **Greg M McFarquhar**<sup>7</sup> and Pavlos Kollias<sup>8</sup>, (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<sup>1</sup>, Andrew Geiss<sup>2</sup>, Zhe Feng<sup>1</sup>, L. Ruby Leung<sup>2</sup>, Yun Qian<sup>1</sup> and **Wenjun Cui**<sup>3</sup>, (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<sup>1</sup>, Ehsan Gharib-Nezhad<sup>2</sup>, Gautier Bardi de Fourtou<sup>3</sup>, Steven Dillmann<sup>4</sup>, Bruce Dean<sup>5</sup>, Mario Damiano<sup>6</sup>, **Aidan Foreman**<sup>7</sup>, Cecilia Garraffo<sup>8</sup>, Mahdi Habibi<sup>9</sup>, Wenli Mo<sup>10</sup>, Miguel Martinho<sup>11</sup>, Aquib Moin<sup>12</sup>, Mark M. Moussa<sup>13</sup>, Rafael Martínez-Galarza<sup>14</sup>, John Wu<sup>15</sup>, Megan Shabram<sup>16</sup>, Victoria Da Poian<sup>17</sup>, Emilio Salazar-Donate<sup>18</sup>, Mainak Singha<sup>19</sup>, Virisha Timmaraju<sup>20</sup>, Gioia Rau<sup>5</sup>, Hamed Valizadegan<sup>2</sup> and Anuj Patel<sup>21</sup>, (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<sup>1</sup>, Brian Bue<sup>1</sup>, Philip G Brodrick<sup>2</sup>, Andrew K Thorpe<sup>1</sup>, **William Keely**<sup>1,3</sup>, Michael Kiper<sup>1</sup> and Jay Fahlen<sup>1</sup>, (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<sup>1</sup>, **Himadri Sen Gupta**<sup>2</sup>, Maria Koliou<sup>3</sup> and **Andrés González**<sup>2</sup>, (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<sub>2</sub> Isotopes](#)

**Martha Jimenez-Castaneda**<sup>1</sup>, **Janine Sparks**<sup>1</sup>, **Jordan Jones**<sup>1</sup> and **Timothy R Filley**<sup>2</sup>, (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 Anthroause During COVID-19 on the Activity of Avian Influenza Host Birds](#)

Qiang Zhang<sup>1,2</sup>, Jinwei Dong<sup>1</sup> and Xiangming Xiao<sup>3</sup>, (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<sup>1</sup>, Greg M McFarquhar<sup>2</sup>, Saurabh Patil<sup>2</sup>, Lan Gao<sup>3</sup>, Mateusz Taszarek<sup>4</sup>, Ming Xue<sup>5</sup>, Andrew Dzambo<sup>2</sup>, Mengistu Wolde<sup>6</sup>, Leonid Nichman<sup>7</sup>, Cuong Nguyen<sup>8</sup>, Keyvan Ranjbar<sup>8</sup>, Natalia Bliankinshtein<sup>9</sup>, Kenny Bala<sup>8</sup>, Pavlos Kollias<sup>10</sup> and Michael P Jensen<sup>11</sup>, (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<sup>1</sup>, Jens Redemann<sup>2</sup>, Lan Gao<sup>2</sup>, Feng Xu<sup>3</sup>, Sharon P Burton<sup>4</sup>, Brian Cairns<sup>5</sup>, Richard Anthony Ferrare<sup>4</sup>, Chris A Hostetler<sup>4</sup>, Richard Moore<sup>4</sup>, Luke D Ziemba<sup>4</sup>, Ewan Crosbie<sup>6</sup>, Steven G Howell<sup>7</sup>, Snorre Stamnes<sup>8</sup>, Mary Kacarab<sup>9</sup>, Jenny Wong<sup>10</sup> and Athanasios Nenes<sup>11</sup>, (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](#)<sup>1</sup>, [Jens Redemann](#)<sup>1</sup>, [Connor J. Flynn](#)<sup>1</sup>, [Lan Gao](#)<sup>1</sup>, Wenfu Tang<sup>2</sup>, Simone Tilmes<sup>3</sup> and Pablo Saide<sup>4</sup>, (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<sup>1</sup>, [Ken Kehoe](#)<sup>2</sup>, Zachary Sherman<sup>3</sup>, Maxwell Grover<sup>4</sup>, [Corey Godine](#)<sup>5</sup>, [Alyssa Sockol](#)<sup>5</sup>, Joseph Robert O'Brien<sup>6</sup>, Jenni Kyrouac<sup>3</sup>, Maxwell Levin<sup>7</sup>, Denny Hackel<sup>8</sup> and Michael Giansiracusa<sup>9</sup>, (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](#)<sup>1</sup>, Jie Wang<sup>2</sup>, [Yuan Yao](#)<sup>3</sup> and [Yuanwei Qin](#)<sup>3</sup>, (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<sup>1</sup>, Bart Geerts<sup>2</sup>, **Greg M McFarquhar**<sup>3</sup>, Adriana Bailey<sup>4</sup>, Kevin Robert Barry<sup>5</sup>, John J Cassano<sup>6</sup>, Carol Costanza<sup>7</sup>, James D Doyle<sup>8</sup>, Samuel Ephraim<sup>9</sup>, Andrew Dzambo<sup>3</sup>, Jeffrey French<sup>2</sup>, Coltin Grasmick<sup>10</sup>, Emma Järvinen<sup>11</sup>, Timothy W Juliano<sup>12</sup>, Ryan J Patnaude<sup>13</sup>, Russell Perkins<sup>14</sup>, Markus D Petters<sup>15</sup>, Elise Rosky<sup>16</sup>, Jefferson Snider<sup>10</sup>, Gunilla Svensson<sup>17</sup>, Michael K H Tjernstrom<sup>17</sup>, Florian Tornow<sup>18</sup>, Patrick Veres<sup>19</sup>, Yonggang Wang<sup>20</sup>, Zhien Wang<sup>21</sup>, Sarah Woods<sup>22</sup> and Lulin Xue<sup>23</sup>, (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<sup>1</sup>, Lucia Fernanda Gonzalez<sup>1</sup>, Daniel Francis May<sup>2</sup>, Emma C Smith<sup>3</sup>, Galen Kaip<sup>1</sup>, Solymar Ayala Cortez<sup>1</sup>, Yeshey Seldon<sup>1</sup>, Andrew Pretorius<sup>3</sup>, Jacob I Walter<sup>4</sup>, Nori Nakata<sup>5</sup>, Adam D Booth<sup>3</sup>, Slawek M Tulaczyk<sup>6</sup>, Tun Jan Young<sup>7</sup> 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<sup>1</sup>, Qing Niu<sup>2</sup>, Cecile Hannay<sup>3</sup>, Jesse M Nusbaumer<sup>3</sup>, Brian Medeiros<sup>4</sup>, Greg M McFarquhar<sup>5</sup>, Will Chapman<sup>6</sup>, Megan Devlan Fowler<sup>7</sup>, Benjamin Stephens<sup>8</sup>, Dao Wang<sup>9</sup>, Alain Protat<sup>10</sup> and Gerald G Mace<sup>11</sup>, (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<sup>1</sup>, Yihan Wang<sup>1</sup>, Lujun Zhang<sup>1</sup> and N. Benjamin Erichson<sup>2,3</sup>, (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)*