American Geophysical Union Fall Meeting
December 12 - 16, 2022, Chicago, IL
The University of Oklahoma

MONDAY, 12 DECEMBER

H11B - Advances in the Fate of PFAS and Other Emerging Contaminants As Well As Microorganisms and Colloids in the Environment I Online Poster Discussion
Denis M O'Carroll[1], Clare E Robinson[2], Tohren C G Kibbey[3] and Sabina Rakhimbekova[2], (1)University of New South Wales, Sydney, NSW, Australia(2)University of Western Ontario, Civil and Environmental Engineering, London, ON, Canada(3)Univ Oklahoma, Norman, OK

- *Monday, 12 December 2022*
- *08:00 - 09:00*
- *Online only*

GC11A-02 - Flow Simulation of CO_2 Plume in Arbuckle Group
Ayomide Hamzat, Benmadi Milad, Rouzbeh G Moghanloo and Jamal Daneshfar, The University of Oklahoma, Petroleum & Geological Engineering, Norman, OK

- *Monday, 12 December 2022*
- *08:10 - 08:20*
- *Online Only*

A12K-1241Automated Detection and Analysis of Severe, Tropopause-Penetrating Convective Storm Patterns Using Remote Sensing Data Fusion and Deep Learning
Kristopher M Bedka, NASA Langley Research Center, Hampton, VA, John William Cooney, NPP/USRA Post-Doc at NASA Langley Research Center, Hampton, VA, Konstantin V Khlopenkov, Sci Systems & Applications Inc, Hampton, VA, Cameron R Homeyer, University of Oklahoma, School of Meteorology, Norman, OK, Kelley Murphy, University of Alabama in Huntsville, Huntsville, and John Robert Mecikalski, University of Alabama in Huntsville, Huntsville, AL

- *Monday, 12 December 2022 *
- *09:00 - 12:30*
- *McCormick Place - Poster Hall, Hall A (South, Level 3)*

H12A-48The Effects of Warm Season Pluvial States on Vegetation Densities in the Southern Great Plains
Daniel Mesheske, University of Oklahoma Norman Campus, Civil Engineering and Environmental Science, Norman, OK, Jeffrey B Basara, University of Oklahoma, School of Meteorology; School of Civil Engineering and Environmental Science, Norman, OK and Jordan I Christian, University of Oklahoma, School of Meteorology, Norman, OK

- *Monday, 12 December 2022*
- *09:00 - 12:30*
- *McCormick Place - Poster Monitor 4*

H12J-0805Studying Nanoparticle Detachment From Biological Surfaces Using SEM Imaging
Jack Bezdek, Elina M Avila, Nour K Alfailakawi, Keith A Strevett and Tohren C G Kibbey, University of Oklahoma, Norman, OK

- *Monday, 12 December 2022*
- *09:00 - 12:30*
- *McCormick Place - Poster Hall, Hall - A (South, Level 3)*

H12J-0809Development of a model predicting PFAS interfacial partitioning under environmentally relevant conditions
Denis M O'Carroll[1], Song Thao Le[2], William Glamore[3], Cindy Gao[2] and Tohren C G Kibbey[4], (1)University of New South Wales, Sydney, NSW, Australia, (2)University of New South Wales, Sydney, Australia, (3)University of New South Wales, School of Civil and Environmental Engineering, Sydney, Australia, (4)Univ Oklahoma, Norman, OK

- *Monday, 12 December 2022*
- *09:00 - 12:30*
- *McCormick Place - Poster Hall, Hall - A (South, Level 3)*

[A12H-04](#)Investigating the Role of Gravity Waves on the Natural Variability of Ice Particle Properties, and Their Implications for Constraining Fall Velocity Uncertainty Estimates

Andrew Dzambo[1], Greg M McFarquhar[1], Gabe Cenker[2], Parker Davis[2], Gerald Heymsfield[3] and Charles N Helms[4], (1)Cooperative Institute for Severe and High-Impact Weather Research and Operations, University of Oklahoma, Norman, (2)University of Oklahoma, School of Meteorology, Norman, (3)Goddard Space Flight Center NASA, Greenbelt, MD, (4)NASA Goddard Space Flight Center, Mesoscale Atmospheric Processes Lab, Greenbelt, MD

- *Monday, 12 December 2022*
- *09:30 - 09:40*
- *McCormick Place - E271ab (Lakeside, Level 2)*

A12E-08Initial Perspectives from the TRACER-UAS campaign (Invited)

Elizabeth A Pillar-Little[1], Francesca M. Lappin[1,2], Antonio Segales[1,3], Kelsey C. Britt[2,4], Isaac J. Medina[1,2], Leia M. Otterstatter[2], Bryony Puxley[5], Michelle R. Spencer[2,6], Elizabeth Asher[7], Gijs de Boer[8] and Petra Maria Klein[9], (1)University of Oklahoma, Cooperative Institute for Severe and High-Impact Weather Research and Operations (CIWRO), Norman, OK, (2)University of Oklahoma, School of Meteorology, Norman, OK, (3)University of Oklahoma, School of Electrical and Computer Engineering, Norman, OK, (4)National Severe Storms Lab, Norman, OK (5)University of Oklahoma, School of Meteorology, Norman, OK, (6)National Severe Storms Lab Norman, Norman, OK, (7)National Center for Atmospheric Research, Boulder, CO, (8)NOAA, Physical Sciences Laboratory, Boulder, CO, (9)University of Oklahoma Norman Campus, Norman, OK

- *Monday, 12 December 2022*
- *10:10 - 10:20*
- *McCormick Place - E258 (Lakeside, Level 2)*

[B13F-08](#)Invasive Japanese Beetle, *Popillia Japonica* Newman, Larvae Alter Carbon Storage Dynamics in Infested Soil

Gordon MacLeod, Purdue University, Agronomy, West Lafayette, IN, Douglas Richmond, Purdue University, Entomology, West Lafayette, IN, and Timothy R Filley, University of Oklahoma Norman Campus, Geography and Environmental Sustainability, Norman, OK

- *Monday, 12 December 2022*
- *12:15 - 12:25*
- *McCormick Place - S501bcd (South, Level 5)*

[TH13D - Building Your Network – Collaborating as an Early Career Hydrologist](#)

Lorrayne Miralha, Oregon State University, Corvallis, OR, Shuyu Y Chang, Pennsylvania State University Main Campus, Geography, University Park, PA, Achla Om Prakash Jha, Texas A&M University College Station, Department of Biological and Agricultural Engineering, College Station, TX, Matthew Preisser, University of Texas at Austin, Austin, TX, Shruti Ashok Upadhyaya, Cooperative Institute for Mesoscale Meteorological Studies, Norman, OK, Dalia Kirschbaum, NASA Goddard Space Flight Center, Earth Sciences Division, Greenbelt, MD, Pierre-Emmanuel Kirstetter, University of Oklahoma, Advanced Radar Research Center, Norman, OK, and Jonathan M Frame, University of Alabama, Geological Sciences, Tuscaloosa, AL

- *Monday, 12 December 2022*
- *12:45 - 13:45*
- *McCormick Place - S105a (South, Level 1)*

[H14E-02](#)A DEM-based river tracing algorithm for levee identification

Kaihao Zheng[1], Peirong Lin[1], Shang Gao[2], Xiao Yang[3] and Meng Ding[4], (1)Peking University, Institute of Remote Sensing and GIS, School of Earth and Space Sciences, Beijing, China, (2)University of Oklahoma, School of Civil Engineering and Environmental Science, Norman, OK, (3)Southern Methodist University, Department of Earth Sciences, Dallas, TX (4)Kansas State University, Geography and Geospatial Sciences, Manhattan, KS

- *Monday, 12 December 2022*
- *14:25 - 14:35*
- *Online Only*

[A14E-06 -](#) [Towards a Machine Learning Retrieval of XCO2 from OCO-2 Radiances with Uncertainty Quantification.](#)
William Keely[1,2] and Steffen Mauceri[2], (1)University of Oklahoma, Data Science & Analytics Institute, Norman, OK, (2)NASA Jet Propulsion Laboratory, Pasadena, CA

- *Monday, 12 December 2022*
- *14:35 - 14:45*
- *Online Only*

[A15C-01](#)[Evaluating JAXA/GOSAT two-layer XCO$_2$ with aircraft measurements and OCO-2 MIP simulations](#)
Li Zhang[1], Kenneth J Davis[2,3], Hiroshi Suto[4], Akihiko Kuze[5], Tomohiro Oda[6,7], David Baker[8], Sourish Basu[9,10], Frederic Chevallier[11], Sean Crowell[12], Feng Deng[13], Matthew S Johnson[14], Junjie Liu[15,16], Marine Remaud II[11], Sajeev Philip[17], Andrew E Schuh[18] and Brad Weir[19,20], (1) Pennsylvania State University, Meteorology and Atmospheric Science, University Park, PA, (2)Pennsylvania State University, Meteorology and Atmospheric Science, University Park, PA, (3)Pennsylvania State University, Earth and Environmental Systems Institute, University Park, PA, (4)Japan Aerospace Exploration Agency, Tsukuba, Japan, (5)JAXA Japan Aerospace Exploration Agency, EORC, Tsukuba, Japan, (6)University of Maryland, Atmospheric and Oceanic Science, College Park, MD, (7)Universities Space Research Association, Earth from Space Institute, Columbia, (8)Colorado State University, Fort Collins, CO, (9)NASA Goddard Space Flight Center, Global Modeling and Assimilation Office, Greenbelt, MD, (10)University of Maryland, Earth System Science Interdisciplinary Center, College Park, MD, (11)LSCE Laboratoire des Sciences du Climat et de l'Environnement, Gif-Sur-Yvette Cedex, France, (12)University of Oklahoma, Norman, OK, (13)University of Toronto, Physics, Toronto, ON, Canada, (14)NASA Ames Research Center, Moffett Field, CA, (15)NASA Jet Propulsion Laboratory, Pasadena, CA, (16)California Institute of Technology, Geological and Planetary Sciences, Pasadena, CA, (17)Indian Institute of Technology Delhi, Centre for Atmospheric Sciences, New Delhi, India, (18)Colorado State University, CIRA, Fort Collins, CO, (19)Morgan State University, GESTAR-II, Baltimore, MD, (20)NASA Goddard Space Flight Center, Greenbelt, MD

- *Monday, 12 December 2022*
- *14:45 - 14:55*
- *McCormick Place - E351 (Lakeside, Level 3)*

[A15F-1307](#)[Dependence of Retrieved Cloud Properties on Environmental Conditions in Cold Air Outbreaks over the North Atlantic: Results from COMBLE](#)
Zeqian(Hazel) Xia and Greg M McFarquhar, Cooperative Institute for Severe and High-Impact Weather Research and Operations, University of Oklahoma, Norman, OK

- *Monday, 12 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall A (South, Level 3)*

[A15M-1413](#)[Development of Synergetic Satellite-Derived Wildfire Plume Height Products for the Western U.S.](#)
Jingting Huang[1], Marcela Loría-Salazar[2], Min Deng[3], Jaehwa Lee[4,5] and Heather Holmes[1], (1)University of Utah, Department of Chemical Engineering, Salt Lake City, UT, (2)University of Oklahoma, School of Meteorology, Norman, OK, (3)Brookhaven National Laboratory, Environmental and Climate Sciences Department, Upton, NY, (4)University of Maryland, College Park, Earth System Science Interdisciplinary Center, College Park, MD, (5)NASA Goddard Space Flight Center, Greenbelt, MD

- *Monday, 12 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall - A (South, Level 3)*

[A15M-1417](#)[Spatiotemporal Estimates of Surface PM2.5 Concentrations in the Western U.S. using NASA Aerosol and Fire Retrievals and Machine Learning Techniques](#)
Jeffrey Lee[1], Heather Holmes[2], Cesunica Ivey[3] and Marcela Loría-Salazar[1], (1)University of Oklahoma, School of Meteorology, Norman, OK, (2)University of Utah, Department of Chemical Engineering, Salt Lake City, UT, (3)University of California Berkeley, Civil and Environmental Engineering Department, Berkeley, CA

- *Monday, 12 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall - A (South, Level 3)*

[A15M-1409Toward Understanding Smoke Aerosol Optical Properties and Aerosols on Boundary Layer Depth due to Local-Generated and Transported Smoke from a Decade of Measurements in Nevada and California](#)
Sandra Marcela Loria Salazar[1], Jeffrey Lee[2], Marcus Ake[3] and Colleen McCleish[3], (1)University of Oklahoma Norman Campus, School of Meteorology, Norman, OK, (2)University of Oklahoma, School of Meteorology, Norman, OK (3)University of Oklahoma Norman Campus, School of Meteorology, Norman, OK

- *Monday, 12 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall - A (South, Level 3)*

[A15N-1427Demonstration of Dual-Integration Spectroradiometer Operation by ARM for Enhanced Dynamic Range, Temporal Resolution, and Radiometric Accuracy](#)
Connor J. Flynn, University of Oklahoma, School of Meteorology, Norman, OK, Samuel E LeBlanc, NASA Ames Research Center, Bay Area Environmental Research Institute, Moffett Field; Bay Area Environmental Research Institute, Moffett Field, CA, Christine Chiu, Colorado State University, Fort Collins, CO, Alexander Marshak, NASA Goddard Space Flight Center, Greenbelt, MD, Guoyong Wen, NASA Goddard Space Flight Center, Greenbelt, MD, and Derek Hopkins, Pacific Northwest National Laboratory, EMSL, Richland, WA

- *Monday, 12 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall A (South, Level 3)*

[AE15BUsing Lightning Data to Investigate Thunderstorm Processes, Atmospheric Chemistry, Air Quality, and Climate II Poster](#) Session
Patrick N Gatlin, NASA Marshall Space Flight Center, Huntsville, AL, Yang Li, Baylor University, Waco, TX, Kenneth E Pickering, University of Maryland, Atmospheric and Oceanic Science, College Park, MD, Michael Stock, University of Oklahoma, Norman, OK, Daile Zhang, University of Maryland College Park, MD, and Timothy J Lang, NASA Marshall Space Flight Center, Huntsville, AL

- *Monday, 12 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall A (South, Level 3)*

[GC15G-0512 - Leveraging Machine Learning and Geo-Tagged Citizen Science Data to Disentangle the Factors of Avian Mortality Events at the Species Level](#)
Anni Yang[1], Matthew Rodriguez[2], Di Yang[3], Jue Yang[4], Wenwen Cheng[1], Changjie Cai[5] and Han Qiu[6], (1)The University of Oklahoma, Norman, OK, (2)University of Oklahoma, Norman, OK, (3)University of Wyoming, Wyoming Geographic Information Center, Laramie, WY (4)University of Georgia, Department of Geography, Athens, GA, (5)University of Oklahoma Health Sciences Center, University of Oklahoma, Occupational and Environmental Health, Oklahoma City, OK (6)University of Wisconsin-Madison, Department of Forest and Wildlife Ecology, Madison, WI

- *Monday, 12 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall - A (South, Level 3)*

[NS15A-0248Non-Equilibrium Effect of Spectral Induced Polarization in Electrically Conductive Minerals: Pyrite versus Pyrrhotite models](#)
Nuray Oncul, Rutgers University, Earth and Environmental Science, Newark, NJ, Sina Saneiyan, University of Oklahoma, School of Geosciences, Norman, OK and Lee D Slater, Rutgers University, Department of Earth & Environmental Sciences, Newark, NJ

- *Monday, 12 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall A (South, Level 3)*

[GC15D-05 - A Heat Vulnerability Index based on a comprehensive energy budget model in Oklahoma City, OK](#)
Wenwen Cheng[1], Anni Yang[1], Changjie Cai[2], Dongying Li[3] and Zhe Zhang[4], (1)The University of Oklahoma, Norman, OK, (2)University of Oklahoma Health Sciences Center, University of Oklahoma, Occupational and Environmental Health, Oklahoma City, OK, (3)Texas A&M University College Station, College Station, TX, (4)Texas A&M University College Station, College Station, TX

- *Monday, 12 December 2022*
- *15:30 - 15:40*
- *McCormick Place - S504abc (South, Level 5)*

[B16D-01Exploiting Artificial Intelligence for Advancing Earth and Environmental System Science](#) (Invited)
Forrest M. Hoffman[1], Jitendra Kumar[1], Zheng Shi[2], Elias Charbel Massoud[3], Nathan Collier[4] and Min Xu[4], (1)Oak Ridge National Laboratory, Oak Ridge, TN, (2)University of Oklahoma, Institute for Environmental Genomics, Department of Microbiology and Plant Biology, Norman, OK, (3)University of California Berkeley, Environmental Science, Policy, & Management, Berkeley, CA, (4)Oak Ridge National Lab, Oak Ridge, TN

- *Monday, 12 December 2022*
- *16:45 - 16:55*
- *McCormick Place - S403b*

[A16C-02The state of global carbon cycle in 2020 and 2021](#)
Junjie Liu[1], David F Baker[2], Sourish Basu[3], Michael Bertolacci[4], Kevin W Bowman[5], Brendan K Byrne[6], Abhishek Chatterjee[5], Sean Crowell[7], Frederic Chevallier[8], Noel Cressie[4], Feng Deng[9], Wei He[10], Rajesh Janardanan Achari[11], Fei Jiang[10], Matthew C Johnson[12], Zhiqiang Liu[13], Shamil S Maksyutov[11], Scot M Miller[14], Sajeev Philip[15], Andrew E Schuh[16], Jingfeng Xiao[17], Ning Zeng[18] and Andrew Zammit-Mangion[19], (1)NASA Jet Propulsion Laboratory, Pasadena, CA, (2)Colorado State University, CIRA, Fort Collins, CO, (3)NOAA, Global Monitoring Laboratory, Boulder, CO, (4)University of Wollongong, School of Mathematics and Applied Statistics, Wollongong, NSW, Australia, (5)Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, (6)Jet Propulsion Laboratory, Pasadena, CA, (7)University of Oklahoma, Norman, OK, (8)LSCE Laboratoire des Sciences du Climat et de l'Environnement, Gif-Sur-Yvette Cedex, France, (9)University of Toronto, Physics, Toronto, ON, Canada, (10)Nanjing University, Nanjing, China, (11)NIES, Tsukuba, Japan, (12)KBR, NASA Goddard Space Flight Center, Greenbelt, MD, (13)Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, China (14)Harvard University, Cambridge, MA (15)Universities Space Research Association, NASA Ames Research Center, Mountain View, CA (16)Colorado State University, CIRA, Fort Collins, CO, (17)University of New Hampshire, Durham, NH, (18)University of Maryland, College Park, MD (19)University of Bristol, Bristol, United Kingdom

- *Monday, 12 December 2022*
- *16:55 - 17:05*
- *McCormick Place - E351 (Lakeside, Level 3)*

[A16E-04The Influence of Radiation on the Prediction of Tropical Cyclone Intensification](#)
Shun-Nan Wu, University of Oklahoma, Norman, OK, Brian J. Soden, University of Miami, Miami, FL, Ghassan Alaska, NOAA/AOML/Hurricane Research Division, Key Biscayne, FL, and David S Nolan, University of Miami, Department of Atmospheric Sciences, Miami, FL

- *Monday, 12 December 2022*
- *17:15 - 17:25*
- *McCormick Place - E353ab (Lakeside, Level 3)*

TUESDAY, 13 DECEMBER

[H21CAdvances in Machine Learning for Earth Science: Observation, Modeling, and Applications V Online Poster Discussion](#)
Yixin Wen, University of Florida, Department of Geography, Ft Walton Beach, FL, Guoqiang Tang, University of Saskatchewan, Centre for Hydrology, Saskatoon, SK, Canada, Mengye Chen, The University of Oklahoma, Norman, OK, and Phu Nguyen, University of California, Irvine, Department of Civil and Environmental Engineering, Irvine, CA
- *Tuesday, 13 December 2022*
- *08:00 - 09:00*
- *Online Only*

[H21C-04 - Identifying the Hydrometeorological Decision Factors Influencing Reservoir Releases over the Upper Colorado Region using a Long Short-Term Memory Network](#)
Ming Fan[1], Lujun Zhang[2], Siyan Liu[3], Tiantian Yang[2] and Dan Lu[1], (1)Oak Ridge National Laboratory, Oak Ridge, TN, (2)The University of Oklahoma, Norman, OK, (3)Oak Ridge National Laboratory, Oak Ridge, TN
- *Tuesday, 13 December 2022*
- *08:15 - 08:20*
- *Online Only*

[INV22C-0505Combustion Efficiency Observed in California with CO and NO2 FIREX-AQ and TROPOMI Data](#)
Helene Peiro[1], Alaina Kurt[1] and Sean Crowell[2], (1)University of Oklahoma Norman Campus, Norman, OK, (2)University of Oklahoma, Norman, OK
- *Tuesday, 13 December 2022*
- *09:00 - 12:30*
- *McCormick Place - Poster Hall, Hall - A (South, Level 3)*

[A22F-1739A Statistical Analysis to Improve Development of a Heat Wave Definition in the Southern Great Plains](#)
Taylor M Grace, University of Oklahoma Norman Campus, Norman, OK and Jeffrey B Basara, University of Oklahoma, School of Meteorology; School of Civil Engineering and Environmental Science, Norman, OK
- *Tuesday, 13 December 2022*
- *09:00 - 12:30*
- *McCormick Place - Poster Hall, Hall A (South, Level 3)*

[GC22A - Advances in Earth Observation and Modeling for Agriculture, Forestry, and Urban Applications I Oral](#)
Xiangming Xiao[1], Yuanwei Qin[2], Russell Doughty[3] and Jorge Andres Celis[2], (1)University of Oklahoma Norman Campus, Department of Microbiology and Plant Biology, Norman, OK, (2)University of Oklahoma Norman Campus, Norman, OK, (3)University of Oklahoma, GeoCarb Mission and the College of Atmospheric and Geographic Sciences, Norman, OK
- *Tuesday, 13 December 2022*
- *09:00 - 10:30*
- *McCormick Place - S503ab (South, Level 5)*

[GC22F-0662Multidisciplinary Methodological Approach for Flash Flood Risk Assessment in Rural Communities from the Peruvian Andes.](#)
Clara Rodriguez, Lamont Doherty Earth Observatory (Columbia University), New York, NY, Andrew Kruczkiewicz, Columbia University, International Research Institute for Climate and Society, Palisades, NY, Humberto J Vergara, Cooperative Institute for Mesoscale Meteorological Studies, University of Oklahoma, Norman, OK, and Laia Andreu-Hayles, Columbia Univ, Lamont-Doherty Earth Observatory, New York, NY
- *Tuesday, 13 December 2022*
- *09:00 - 12:30*
- *McCormick Place - Poster Hall, Hall A (South, Level 3)*

[H22V-1131Investigating deep soil CO_2 production in restored prairie ecosystems](#)
Ian Frantal[1], Timothy R Filley[2], Ashlee Laura Denton Dere[3], Lisa R Welp[4], Zachary Scott Brecheisen[5] and Martha Jimenez-Castaneda[5], (1)Purdue University, West Lafayette, IN, (2)University of Oklahoma Norman Campus, Geography and Environmental Sustainability, Norman, OK, (3)University of Nebraska at Omaha, Geography/Geology, Omaha, NE, (4)Purdue University, Earth, Atmospheric & Planetary Sciences, West Lafayette, IN, (5)Purdue University, West Lafayette, IN

- *Tuesday, 13 December 2022*
- *09:00 - 12:30*
- *McCormick Place - Poster Hall, Hall - A (South, Level 3)*

[H22Q-1073 - Noah-MP Parameter Optimization at Southern Great Plains Using Bayesian Optimization](#)
Qingyu Wang[1], Sean Crowell[2], Petra Maria Klein[1] and Xiaoming Hu[3], (1)University of Oklahoma Norman Campus, Norman, OK, (2)University of Oklahoma, Norman, OK, (3)The University of Oklahoma, Norman, OK

- *Tuesday, 13 December 2022*
- *09:00 - 12:30*
- *McCormick Place - Poster Hall, Hall - A (South, Level 3)*
- *iPoster Only*

[H22PAdvances in Machine Learning for Earth Science: Observation, Modeling, and Applications VI Poster](#)
Yixin Wen, University of Florida, Department of Geography, Ft Walton Beach, FL, Guoqiang Tang, University of Saskatchewan, Centre for Hydrology, Saskatoon, SK, Canada, Mengye Chen, The University of Oklahoma, Norman, OK, and Phu Nguyen, University of California, Irvine, Department of Civil and Environmental Engineering, Irvine, CA

- *Tuesday, 13 December 2022*
- *09:00 - 12:30*
- *McCormick Place - Poster Hall, Hall A (South, Level 3)*

[GC22A-01 - The GeoCarb Mission: Monitoring Vegetation Health from Space at High Spatiotemporal Resolution](#)
Sean Crowell, University of Oklahoma Norman Campus, Norman, OK, Berrien Moore III, University of Oklahoma, School of Meteorology, Norman, OK, Peter Somkuti, University of Oklahoma Norman Campus, Department of Meteorology, Norman, OK, Russell Doughty, California Institute of Technology, Pasadena, CA, Xiangming Xiao, Department of Microbiology and Plant Biology, Center for Spatial Analysis, University of Oklahoma, Norman, OK, and Yuanwei Qin, University of Oklahoma, Department of Microbiology and Plant Biology, Norman, OK

- *Tuesday, 13 December 2022*
- *09:02 - 09:13*
- *McCormick Place - S503ab (South, Level 5)*

[GC23A - Advances in Earth Observation and Modeling for Agriculture, Forestry, and Urban Applications II Oral](#)
Xiangming Xiao[1], Yuanwei Qin[2], Russell Doughty[3] and Jorge Andres Celis[2], (1)University of Oklahoma Norman Campus, Department of Microbiology and Plant Biology, Norman, OK (2)University of Oklahoma Norman Campus, Norman, OK, (3)University of Oklahoma, GeoCarb Mission and the College of Atmospheric and Geographic Sciences, Norman, OK

- *Tuesday, 13 December 2022*
- *11:00 - 12:30*
- *McCormick Place - S503ab (South, Level 5)*

[GH23A - Global Hotspots Related to Environmental Change and Health Impacts I Oral](#)
Ramesh P Singh, Chapman University, Orange, CA, Michael C Wimberly, University of Oklahoma, Geography and Environmental Sustainability, Norman, OK, , Azar Mohammad Abadi, University of Nebraska Medical Center, Environmental, Agricultural, and Occupational Health, Omaha, NE, Tatiana V Loboda, Univ of Maryland, College Park, MD

- *Tuesday, 13 December 2022*
- *11:00 - 12:30*
- *McCormick Place - E258 (Lakeside, Level 2)*

[A23B-02NASA's Earth System Observatory - The Atmosphere Observation System (AOS) Polar Project](#)

Tyler Thorsen[1], Scott A Braun[2], Daniel Cecil[3], Gregory R Carmichael[4], Arlindo daSilva[5], Richard Anthony Ferrare[1], Meloe S Kacenelenbogen[6], Gerald G Mace[7], Walter Arthur Petersen[8], Jens Redemann[9], Graeme L Stephens[10], Susan C van den Heever[11], Duane Edward Waliser[12], David M Winker[1] and John E Yorks[13], (1)NASA Langley Research Center, Hampton, VA, (2)NASA/GSFC, Greenbelt, MD, (3)NASA Marshall Space Flight Center, Huntsville, AL, (4)Univ Iowa, Iowa City, IA, (5)NASA Goddard Space Flight Center, Greenbelt, MD (6)NASA Ames Research Center, Moffett Field, CA, (7)Univ Utah, Salt Lake City, UT, (8)NASA MSFC, Science Research and Projects Office, Huntsville, AL, (9)University of Oklahoma, School of Meteorology, Norman, OK, (10)Jet Propulsion Laboratory, Pasadena, CA, (11)Colorado State University, Department of Atmospheric Science, Fort Collins, (12)NASA Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, (13)NASA Goddard Space Flight Center, Greenbelt, MD

- *Tuesday, 13 December 2022*
- *11:10 - 11:20*
- *McCormick Place - E350 (Lakeside, Level 3)*

[S23A-03Characterization of Earthquake Swarms and Ruptures and Their Relation to the Orientation of the Stress Field](#)

Rachel E Abercrombie, Boston University, Boston, MA, Xiaowei Chen, University of Oklahoma, School of Geosciences, Norman, OK, Christine J Ruhl, University of Tulsa, Department of Geosciences, Tulsa, OK, and Peter M Shearer, Univ California San Diego, La Jolla, CA,

- *Tuesday, 13 December 2022*
- *11:23 - 11:33*
- *McCormick Place - S103cd (South, Level 1)*

[A23A-04Fire-Generated Tornadic Vortices](#)

Neil Lareau, University of Utah, Salt Lake City, UT and University of Nevada, Reno, Physics, Reno, NV, Matthew Roberts, Irvine, CA, Nicholas J. Nauslar, Bureau of Land Management, Boise, ID, Evan Bentley, NOAA, Norman, OK, Samuel Emmerson, University of Oklahoma, Norman, OK, Brian Brong, NOAA NWS, Reno, NV, Matthew Mehle, NOAA NWS, Monterey, CA and James Wallman, NIFC, Boise, ID

- *Tuesday, 13 December 2022*
- *11:35 - 11:50*
- *McCormick Place - E271ab (Lakeside, Level 2)*

[B23D-06Keystone Metabolites in the Rhizosphere of Switchgrass Link Plant and Microbial Response to Nitrogen Limitation](#)

Kateryna Zhalnina, Lawrence Berkeley National Laboratory, Earth and Environmental Sciences, Berkeley, CA, Nameer Rahman Baker, University of California, Berkeley, Berkeley, CA, Mengting Yuan, University of Oklahoma Norman Campus, Norman, OK, Albina Khasanova, Lawrence Berkeley National Laboratory, Berkeley, CA, Javier A. Ceja Navarro, Northern Arizona University, Center for Ecosystem Sciences and Society, Flagstaff, AZ, Jennifer Pett-Ridge, Lawrence Livermore National Laboratory, Livermore, CA, Mary K Firestone, Univ California Berkeley, Berkeley, CA, and Trent Northern, Lawrence Berkeley National Laboratory, Joint Genome Institute, Berkeley, CA

- *Tuesday, 13 December 2022*
- *11:50 - 12:00*
- *McCormick Place - S501a (South, Level 5)*

[A23B-07A Machine-Learning-Based Algorithm for Cloud Detection and Scene Classification Using Combined Active and Passive Remote Sensors](#)

Lan Gao[1], Jens Redemann[2], Feng Xu[3], Ryan Lagerquist[4], Ian Chang[3], Emily Lenhardt[5] and Benting Chen[4], (1)University of Oklahoma Norman Campus, Meteorology, Norman, OK, (2)University of Oklahoma, School of Meteorology, Norman, OK, (3)University of Oklahoma, School of Meteorology, Norman, OK, (4)University of Oklahoma, Norman, OK, (5)University of Oklahoma,Norman, OK

- *Tuesday, 13 December 2022*
- *12:00 - 12:10*
- *McCormick Place - E350 (Lakeside, Level 3)*

[T23A-07Nature vs Nurture: A Multidisciplinary Perspective on Craton Survivability](#)
Catherine M Cooper, Washington State University, Pullman, WA, Heather Bedle, University of Oklahoma, School of Geosciences, Norman, OK, and Carol D Frost, University of Wyoming, Laramie, WY
- *Tuesday, 13 December 2022*
- *12:00 - 12:10*
- *McCormick Place - S102ab (South, Level 1)*

[GC23A-08Satellite-based Modeling of Gross Primary Production of C3 Fields with Time Series of Landsat and Sentinel-2 Images](#)
Jorge Andres Celis, University of Oklahoma Norman Campus, Norman, OK, Xiangming Xiao, Department of Microbiology and Plant Biology, Center for Spatial Analysis, University of Oklahoma, Norman, OK, Pradeep Wagle, USDA-ARS, Grazinglands Research Laboratory, El Reno, OK, Jeffrey B Basara, University of Oklahoma, School of Meteorology; School of Civil Engineering and Environmental Science, Norman, OK, and Lara Souza, University of Oklahoma, Norman, OK
- *Tuesday, 13 December 2022*
- *12:19 - 12:30*
- *McCormick Place - S503ab (South, Level 5)*

[INV24A-01 - GeoCarb, the Carbon-Climate System and an International Operational Global Carbon Observing System](#)
Berrien Moore III, University of Oklahoma Norman Campus, Norman, OK and Sean Crowell, University of Oklahoma, Norman, OK
- *Tuesday, 13 December 2022*
- *13:45 - 13:55*
- *Online Only*

[NS24A - Near-Surface Geophysics for Characterizing and Monitoring Natural Hazards I Online Poster Discussion](#)
Sebastian Uhlemann, Lawrence Berkeley National Laboratory, Berkeley, CA, Sina Saneiyan, University of Oklahoma, School of Geosciences, Norman, OK, Angela Perrone, CNR Institute of Methodologies for Environmental Analysis, Potenza, Italy and Xavier Comas, Florida Atlantic University, Geosciences, Boca Raton, FL
- *Tuesday, 13 December 2022*
- *13:45 - 14:45*
- *Online Only*

[GH24A - Global Hotspots Related to Environmental Change and Health Impacts II Online Poster Discussion](#)
Ramesh P Singh, School of Life and Environmental Sciences, Schmid College of Science and Technology, Chapman University, Tatiana V Loboda, University of Maryland, College Park, MD, Michael C Wimberly, University of Oklahoma, Geography and Environmental Sustainability, Norman, OK, and Azar Mohammad Abadi, University of Nebraska Medical Center, Environmental, Agricultural, and Occupational Health, Omaha, NE
- *Tuesday, 13 December 2022*
- *13:45 - 14:45*
- *Online Only*

[AE25A-1864Developing & Deploying Tools to Better Observe Lightning in the Washington D.C. Area & Beyond](#)
Daile Zhang[1], Mason Quick[2], Alexander Coles Friedman[3], Domenic Brooks[3], Terrence Pierce[3], Guangyang Fang[3], Joseph Patton[3], Jeff Lapierre[4], Karl Stock[4], Vanna Chmielewski[5,6] and Michael Stock[5], (1)University of Maryland College Park, College Park, MD, (2)NASA Marshall Space Flight Center, Huntsville,AL, (3)University of Maryland College Park, College Park, MD, (4)Earth Networks Inc., Germantown, MD, (5)University of Oklahoma Norman Campus, Norman, OK, (6)NOAA/OAR/National Severe Storms Laboratory, Norman, OK
- *Tuesday, 13 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall - A (South, Level 3)*

[AE25A-1866Narrow Bipolar Events Observed by the ENTLN on the Global Scale](#)
Yanan Zhu, Earth Networks Inc., Germantown, MD, Jeff Lapierre, Earth Networks Inc., Germantown, MD, Elizabeth DiGangi, Earth Networks Inc., Research and Development, Germantown, MD, and Michael Stock, University of Oklahoma Norman Campus, Norman, OK

- *Tuesday, 13 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall - A (South, Level 3)*

[GH25D - Global Hotspots Related to Environmental Change and Health Impacts III Poster](#)
Ramesh P Singh, Chapman University, School of Earth and Environmental Sciences, Orange, CA, Azar Mohammad Abadi, University of Nebraska Medical Center, Environmental, Agricultural, and Occupational Health, Omaha, NE, Tatiana V Loboda, Univ of Maryland, College Park, MD, Michael C Wimberly, University of Oklahoma, Geography and Environmental Sustainability, Norman, OK

- *Tuesday, 13 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall - A (South, Level 3)*

[GH25D-0626Examining the Impact of Tropical Cyclone Events on Human West Nile Virus Cases in Louisiana](#)
Eric Bump[1], Dawn M Nekorchuk[1] and Michael C Wimberly[2], (1)University of Oklahoma, Geography and Environmental Sustainability, Norman, OK, (2)University of Oklahoma Norman Campus, Norman, OK,

- *Tuesday, 13 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall - A (South, Level 3)*

[GC25H-0782Using Bayesian Model Averaging to Develop an Observationally Constrained Ensemble of Downscaled Earth System Models to Support the Fifth U.S. National Climate Assessment](#)
Elias Charbel Massoud, Oak Ridge National Lab, Computational Sciences and Engineering, Oak Ridge, TN, Huikyo Lee, Jet Propulsion Laboratory, Caltech, Altadena, CA, Adrienne Wootten, University of Oklahoma Norman Campus, Norman, OK, and Adam J Terando, US Geological Survey, Southeast Climate Adaptation Science Center, Raleigh, NC

- *Tuesday, 13 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall A (South, Level 3)*

[NG25B-0390Finding causal gateways of heatwave propagation among U.S. cities](#)
Xueli Yang[1], Zhihua Wang[1] and Chenghao Wang[2], (1)Arizona State University, School of Sustainable Engineering and the Built Environment, Tempe, AZ, (2)University of Oklahoma, School of Meteorology; Department of Geography and Environmental Sustainability, Norman, OK

- *Tuesday, 13 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall - A (South, Level 3)*

[NS25A - Near-Surface Geophysics for Characterizing and Monitoring Natural Hazards II Poster](#)
Sebastian Uhlemann, Lawrence Berkeley National Laboratory, Berkeley, CA, Sina Saneiyan, University of Oklahoma, School of Geosciences, Norman, OK, Angela Perrone, CNR Institute of Methodologies for Environmental Analysis, Potenza, Italy and Xavier Comas, Florida Atlantic University, Geosciences, Boca Raton, FL

- *Tuesday, 13 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall A (South, Level 3)*

[S25D-0206Comparing Ambient-Noise-Based Seismic Velocity Variations with Dynamic and Static Strain Changes Associated with Major Earthquake Rupture at Parkfield](#)
Haoyu Li, University of Oklahoma Norman Campus, School of Geoscience, Norman, OK and Junle Jiang, University of Oklahoma Norman Campus, School of Geosciences, Norman, OK

- *Tuesday, 13 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall A (South, Level 3)*

[S25A-04](#)Community Code Verification Exercises for Simulations of Earthquake Sequences and Aseismic Slip (SEAS): From 3D, Full Elastodynamics and Dipping Faults to Fluids and Fault Friction Evolution

Valere Lambert[1], Junle Jiang[2], Brittany A Erickson[3], Mohamed Abdelmeguid[4], Martin Almquist[5], Jean-Paul Ampuero[6], Ryosuke Ando[7], Sylvain Barbot[8], Segun Bodunde[2], Camilla Cattania[9], Alexandre Chen[10], Luca Dal Zilio[11], Benchun Duan[12], Eric M Dunham[13], Ahmed E Elbanna[14], Alice-Agnes Gabriel[15], Yihe Huang[16], Yoshihiro Kaneko[17], Taeho Kim[18], Jeremy Edward Kozdon[19], Nadia Lapusta[20], Duo Li[21], Meng Li[22], Chao Liang[23], Dunyu Liu[24], Yajing Liu[25], Jasper Marcum[3], So Ozawa[26], Casper Pranger[27], Pierre Romanet[7], Paul Segall[13], Yudong Sun[28], Prithvi Thakur[16], Carsten Uphoff[29], Ylona van Dinther[30] and Yuyun Yang[31], (1)University of California Santa Cruz, Santa Cruz, CA, (2)University of Oklahoma Norman Campus, School of Geosciences, Norman, OK, 3)University of Oregon, Eugene, OR, (4)University of Illinois at Urbana Champaign, Urbana, IL, (5)Uppsala University, Department of Information Technology, Uppsala, Sweden, (6)Université Côte d'Azur, CNRS, Observatoire de la Côte d'Azur, IRD, Géoazur, Seismology, Valbonne, France, (7)University of Tokyo, Department of Earth and Planetary Science, Bunkyo-ku, Japan, (8)University of Southern California, Department of Earth Sciences, Los Angeles, CA, (9)Deutsches GeoForschungsZentrum GFZ, Potsdam, Germany, (10)University of Oregon, Department of Computer and Information Science, Eugene, OR, (11)ETH Swiss Federal Institute of Technology Zurich, Zurich, Switzerland, (12)Texas A&M University, Department of Geology & Geophysics, College Station, TX, (13)Stanford University, Department of Geophysics, Stanford, CA, (14)University of Illinois at Urbana Champaign, Department of Civil and Environmental Engineering, Urbana, IL, (15)Ludwig-Maximilians-Universität, Earth and Environmental Sciences, Munich, Germany, (16)University of Michigan Ann Arbor, Earth and Environmental Sciences, Ann Arbor, MI, (17)GNS Science, Kyoto, Japan, (18)California Institute of Technology, Pasadena, CA, (19)Naval Postgraduate School, Monterey, CA, (20)California Institute of Technology, Seismological Laboratory, Pasadena, CA (21)Ludwig Maximilians University of Munich, Munich, Germany, (22)Utrecht University, Department of Earth Sciences, Utrecht, Netherlands, (23)Géoazur - Université Nice Sophia Antipolis, Valbonne, France, (24)University of Texas, Institute for Geophysics, Austin, TX, (25)McGill University, Department of Earth and Planetary Sciences, Montreal, QC, Canada, (26)Stanford University, Stanford, CA, (27)Ludwig Maximilians University of Munich, Department of Earth and Environmental Sciences, Munich, Germany, (28)Massachusetts Institute of Technology, Cambridge, MA, (29)Technical University of Munich (TUM), Munich, Germany, (30)Utrecht University, Utrecht, Netherlands, (31)Stanford University, ICME, Stanford, CA

- *Tuesday, 13 December 2022*
- * 14:45 - 18:15*
- *McCormick Place - Poster Hall, Digital Poster Monitor Zone 1*

[H25A-06](#)Evaluating and intercomparing satellite and reanalysis precipitation products by using decision trees

Xinxin Sui, University of Texas at Austin, Austin, TX, Zhi Li, University of Oklahoma Norman Campus, Norman, OK, Guoqiang Tang, University of Saskatchewan, Centre for Hydrology, Saskatoon, SK, Canada, Zong-Liang Yang, Univ Texas Austin, Austin, TX, and Dev Niyogi, University of Texas at Austin, Jackson School of Geosciences, Austin, TX

- *Tuesday, 13 December 2022*
- *15:35 - 15:45*
- *McCormick Place - E450b (Lakeside, Level 4)*

[A25B-07](#)How the Large-Scale Environment and Mesoscale Convective System Modulates the Diurnal Rainfall Strength over Offshore West Africa

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

- *Tuesday, 13 December 2022*
- *15:45 - 15:55*
- *McCormick Place - E351 (Lakeside, Level 3)*

[H26A](#)Advances in Machine Learning for Earth Science: Observation, Modeling, and Applications II Oral

Yixin Wen, University of Florida, Department of Geography, Ft Walton Beach, FL, Guoqiang Tang, University of Saskatchewan, Centre for Hydrology, Saskatoon, SK, Canada, Mengye Chen, The University of Oklahoma, Norman, OK, and Phu Nguyen, University of California, Irvine, Department of Civil and Environmental Engineering, Irvine, CA

- *Tuesday, 13 December 2022*
- *16:45 - 18:15*
- *McCormick Place - E450b (Lakeside, Level 4)*

[H26FSpace-Based Precipitation Observations: Innovations for Science and Applications II Oral](#)
Sarah Ringerud, University of Maryland College Park, Earth System Science Interdisciplinary Center (ESSIC), College Park, MD; NASA Goddard Space Flight Center, Greenbelt, MD, Jackson Tan, University of Maryland Baltimore County, Baltimore, MD, Pierre Kirstetter, University of Oklahoma Norman Campus, CIMMS, Norman, OK, David B Wolff, NASA Goddard Space Flight Center Wallops Flight Facility, Code 610W, Wallops Island, VA, Christopher Kidd, Earth System Science Interdisciplinary Center, College PARK, MD, and Lisa Milani, CNR Institute of Atmospheric Sciences and Climate, Bologna, Italy

- *Tuesday, 13 December 2022*
- *16:45 - 18:15*
- *McCormick Place - E270 (Lakeside, Level 2)*

[H26F-02The GPM Validation Network: Oceanic Validation of IMERG and GPROF with Ground-Based Radars](#)
Daniel Watters[1], Patrick N Gatlin[2], Pierre-Emmanuel Kirstetter[3,4], George John Huffman[5], Jackson Tan[6,7], David T Bolvin[7,8], Eric Nelkin[7,8], David B Wolff[9], Jianxin Wang[5], Robert Joyce[7,10] and Sarah Ringerud[7,11], (1)NASA Postdoctoral Program, NASA Marshall Space Flight Center, Huntsville, AL, (2)NASA Marshall Space Flight Center, Huntsville, AL, (3)University of Oklahoma, School of Meteorology and School of Civil Engineering and Environmental Science, Norman, OK, (4)NOAA/National Severe Storms Laboratory, Norman, OK, (5)NASA Goddard Space Flight Center, Greenbelt, MD, (6)University of Maryland Baltimore County, Baltimore, MD, (7)NASA Goddard Space Flight Center, Greenbelt, MD, (8)Science Systems and Applications, Inc., Lanham, MD, (9)NASA Goddard Space Flight Center Wallops Flight Facility, Code 610W, Wallops Island, VA, (10)Science Systems and Applications, Inc., Lanham, (11)University of Maryland College Park, Earth System Science Interdisciplinary Center (ESSIC), College Park, MD

- *Tuesday, 13 December 2022*
- *16:55 - 17:05*
- *McCormick Place - E270 (Lakeside, Level 2)*

[H26F-03Evaluation of IMERG over mountainous regions using environmental variables](#)
Yagmur Derin, University of Oklahoma Norman Campus, Norman, OK, and Pierre-Emmanuel Kirstetter, University of Oklahoma, School of Meteorology and School of Civil Engineering and Environmental Science, Norman, OK

- *Tuesday, 13 December 2022*
- *17:05 - 17:15*
- *McCormick Place - E270 (Lakeside, Level 2)*

[GC26D-04Microbes Persist: How Soil Moisture Regimes Shape the Ecophysiology and Biogeochemical Effects of Wild Soil Microbiomes](#) (Invited)
Jennifer Pett-Ridge[1], Noah Sokol[1], Alex Greenlon[2], Megan M Foley[3], Ella Sieradzki[4], Alexa Nicolas[2], Katerina Estera-Molina[2], Mengting Yuan[5], Javier A. Ceja Navarro[6], Jeff Kimbrel[7], Rachel Hestrin[7], Bruce A Hungate[8], Jillian F Banfield[4], Mary K Firestone[9] and Steven Blazewicz[7], (1)Lawrence Livermore National Laboratory, Livermore, CA, (2)University of California Berkeley, Berkeley, CA, (3)Northern Arizona University, Flagstaff, AZ, (4)University of California, Berkeley, Berkeley, CA, (5)University of Oklahoma Norman Campus, Norman, OK, (6)Northern Arizona University, Center for Ecosystem Sciences and Society, Flagstaff, AZ, (7)Lawrence Livermore National Laboratory, Livermore, CA (8)Northern Arizona University, Department of Biological Sciences and the Center for Ecosystem Science and Society, Flagstaff, AZ, (9)Univ California Berkeley, Berkeley, CA

- *Tuesday, 13 December 2022*
- *17:20 - 17:31*
- *McCormick Place - S501bcd (South, Level 5)*

WEDNESDAY, 14 DECEMBER

[A31A-04Climatology of the vertical profiles of polarimetric radar variables and retrieved microphysical parameters in continental / tropical MCSs and landfalling hurricanes](#)

Alexander Ryzhkov and Jiaxi Hu, Cooperative Institute for Mesoscale Meteorological Studies, University of Oklahoma, Norman, OK

- *Wednesday, 14 December 2022*
- *08:30 - 08:40*
- *Online Only*

[A32C-1430The Sensitivity of Mesoscale Convective System Tracking Algorithms to Detection Thresholds and Data Resolution](#)

Ross D Dixon, University of Nebraska Lincoln, Department of Earth and Atmospheric Sciences, Lincoln, NE, Thomas Galarneau, University of Oklahoma Norman Campus, Norman, OK, Xubin Zeng, University of Arizona, Department of Hydrology and Atmospheric Sciences, Tucson, AZ, Hui Su, NASA Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, and Amir Ouyed Hernandez, University of Arizona, Department of Hydrology and Atmospheric Sciences, Tucson, AZ

- *Wednesday, 14 December 2022*
- *09:00 - 12:30*
- *McCormick Place - Poster Hall, Hall - A (South, Level 3)*

[A32D-1433The Behaviors of Intraseasonal Cloud Organization during DYNAMO/AMIE](#)

Naoko Sakaeda, University of Oklahoma Norman Campus, Norman, OK, and Giuseppe Torri, University of Hawai'i at Mānoa, Atmospheric Sciences, Honolulu

- *Wednesday, 14 December 2022*
- *09:00 - 12:30*
- *McCormick Place - Poster Hall, Hall - A (South, Level 3)*

[GC32F-0667Applying Convolutional Neural Network (CNN) Classification of WorldView-3 Satellite Imagery to Distinguish Vegetation Species at Treeline in Rocky Mountain National Park](#)

Laurel Sindewald[1], Matthew Cross[2], Ted A Scambos[3], Ryan Lagerquist[4], Peter Anthamatten[5] and Diana Tomback[1], (1)University of Colorado Denver, Integrative Biology, Denver, CO, (2)University of Colorado Denver, Denver, CO, (3)University of Colorado, Boulder, CIRES, Earth Science and Observation Center, Boulder, CO, (4)University of Oklahoma, Norman, OK, (5)University of Colorado Denver, Geography and Environmental Science, Denver, CO

- *Wednesday, 14 December 2022*
- *09:00 - 12:30*
- *McCormick Place - Poster Hall, Hall - A (South, Level 3)*

[GC32F-0678 - Mapping Eucalyptus Plantation in Guangxi, China Using PALSAR-2, Sentinel-2, and Landsat Images in 2020](#)

Chenchen Zhang[1], Xiangming Xiao[2], Yuanwei Qin[3] and Xuebin Yang[1], (1)University of Oklahoma Norman Campus, Norman, OK, (2)Department of Microbiology and Plant Biology, Center for Spatial Analysis, University of Oklahoma, Norman, OK, (3)University of Oklahoma, Department of Microbiology and Plant Biology, Norman, OK

- *Wednesday, 14 December 2022*
- *09:00 - 12:30*
- *McCormick Place - Poster Hall, Hall - A (South, Level 3)*

[GC32F-0687Using Satellite Observations to Understand Urban Expansion Dynamics of the West Africa Urban System](#)

Andrews Korah, Michael C Wimberly and Michael R Glessner, University of Oklahoma Norman Campus, Geography and Environmental Sustainability, Norman, OK

- *Wednesday, 14 December 2022*
- *09:00 - 12:30*
- *McCormick Place - Poster Hall, Hall - A (South, Level 3)*
-

GC32G-0699Probabilistic Precipitation Estimation with the GOES16 Advanced Baseline Imager: A Machine Learning Approach

Shruti Ashok Upadhyaya, University of Oklahoma, Advanced Radar Research Center (ARRC), Norman, OK, Pierre-Emmanuel Kirstetter, University of Oklahoma, School of Meteorology and School of Civil Engineering and Environmental Science, Norman, OK, and Robert Joseph Kuligowski, NOAA Center for Satellite Applications and Research, Silver Springs, MD

- *Wednesday, 14 December 2022*
- *09:00 - 12:30*
- *McCormick Place - Poster Hall, Hall - A (South, Level 3)*

H32AAdvances in Machine Learning for Earth Science: Observation, Modeling, and Applications III Oral

Yixin Wen, University of Florida, Department of Geography, Ft Walton Beach, FL, Guoqiang Tang, University of Saskatchewan, Centre for Hydrology, Saskatoon, SK, Canada, Mengye Chen, The University of Oklahoma, Norman, OK, and Phu Nguyen, University of California, Irvine, Department of Civil and Environmental Engineering, Irvine, CA

- *Wednesday, 14 December 2022*
- *09:00 - 10:30*
- *McCormick Place - E450b (Lakeside, Level 4)*

S32C-0272Investigating the Effects of Permeability and Porosity on Reservoir Deformation and Pore Pressure Evolution at Geothermal Fields

Ganiyat O Shodunke and Junle Jiang, University of Oklahoma Norman Campus, School of Geosciences, Norman, OK

- *Wednesday, 14 December 2022*
- *09:00 - 12:30*
- *McCormick Place - Poster Hall, Hall A (South, Level 3)*

T32E-0221Characterizing Spatial Patterns and Timescales of Early Postseismic Deformation of Megathrust Earthquakes

Segun Bodunde and Junle Jiang, University of Oklahoma Norman Campus, School of Geosciences, Norman, OK

- *Wednesday, 14 December 2022*
- *09:00 - 12:30*
- *McCormick Place - Poster Hall, Hall A (South, Level 3)*

T32A-01Comparing fault healing in laboratory experiments to repeating earthquakes: A case study of Prague, Oklahoma, U.S.A.

Kristina Okamoto[1], Heather M Savage[1], Elizabeth S Cochran[2], Emily E Brodsky[3], Brett M Carpenter[4] and Jack Sullivan[1], (1)University of California Santa Cruz, Earth and Planetary Sciences, Santa Cruz, CA, (2)U.S. Geological Survey, Earthquake Science Center, Pasadena, CA, (3)University of California Santa Cruz, Earth and Planetary Sciences, Santa Cruz, CA, (4)University of Oklahoma, School of Geosciences, Norman, OK

- *Wednesday, 14 December 2022*
- *09:01 - 09:11*
- *McCormick Place - S103ab (South, Level 1)*

A32B-02 - Exploring ARM's Shortwave Spectral Measurements to Quantify Cloud and Aerosol Radiative Effects Invited Paper

Laura Riihimaki, Cooperative Institute for Research in Environmental Sciences, Boulder, CO, Connor J. Flynn, University of Oklahoma, School of Meteorology, Norman, OK, and Allison C McComiskey, Brookhaven National Laboratory, Environment and Climate Sciences Department, Upton, NY

- *Wednesday, 14 December 2022*
- *09:11 - 09:21*
- *McCormick Place - E258 (Lakeside, Level 2)*

[Relationships Between Lidar Aerosol Extinction and Backscatter Coefficients and Cloud Concentration Nuclei (CCN) Number Concentrations for Different Aerosol Types (Invited)](#)

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[6], Athanasios Nenes[7], Snorre Stamnes[4], Mary Kacarab[8] and Jenny Wong[9], (1)University of Oklahoma Norman Campus, Norman, OK, (2)University of Oklahoma, School of Meteorology, Norman, OK, (3)University of Oklahoma, School of Meteorology, Norman, OK, (4)NASA Langley Research Center, Hampton, VA, (5)NASA Goddard Institute for Space Studies, New York, NY, (6)NASA Langley Research Center, Hampton, (7)Ecole Polytechnique Federale de Lausanne, School of Architecture, Civil and Environmental Engineering (ENAC), Laboratory of Atmospheric Processes and their Impacts (LAPI), Lausanne, Switzerland, (8)University of California Riverside, Riverside, CA, (9)Mount Allison University, Sackville, NB, Canada

- *Wednesday, 14 December 2022*
- *09:40 - 09:45. McCormick Place*
- *AGU Central Career Center Pod - Hall A (South, Level 3)*

[A32B-05 - A more transparent infrared window](#)

Eli Jay Mlawer, Atmospheric and Environmental Research, Lexington, MA, Jeana Mascio, Atmospheric and Environmental Research Lexington, Lexington, MA, David D Turner, NOAA Global Systems Laboratory, Boulder, CO, Vivienne Payne, Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, Connor J. Flynn, University of Oklahoma, School of Meteorology, Norman, OK and Robert Pincus, Columbia University, Lamont-Doherty Earth Observatory, Palisades, NY.

- *Wednesday, 14 December 2022*
- *09:41 - 09:51*
- *McCormick Place - E258 (Lakeside, Level 2)*

[H32E-07How land surface characteristics influence the development of flash drought](#)

Lauren Lowman, Wake Forest University, Engineering, Winston-Salem, NC, Jordan I Christian, University of Oklahoma, School of Meteorology, Norman, OK and Eric D Hunt, Atmospheric and Environmental Research, Lexington, MA

- *Wednesday, 14 December 2022*
- *10:00 - 10:10*
- *McCormick Place - E352 (Lakeside, Level 3)*

[H32J-05Using machine learning to improve multi-wavelength spaceborne radar precipitation retrievals](#)

Stephen W Nesbitt[1], Alfonso Ladino[2], Randy Chase[3], Greg M McFarquhar[4], Robert Rauber[5] and Larry Di Girolamo[5], (1)University of Illinois at Urbana Champaign, Atmospheric Sciences, Urbana, IL, (2)Urbana, Illinois, (3)University of Oklahoma, Norman Campus, Norman, OK, (4)Cooperative Institute for Severe and High-Impact Weather Research and Operations, University of Oklahoma, Norman, OK, (5)University of Illinois at Urbana-Champaign, Department of Atmospheric Sciences, Urbana, IL

- *Wednesday, 14 December 2022*
- *09:40 - 09:50*
- *McCormick Place - E270 (Lakeside, Level 2)*

[A33A-05Multimodal Ice Crystal Size Distributions in Atlantic Coast Snowstorms: Results from IMPACTS 2020](#)

Peter Brechner[1], Greg M McFarquhar[1], David J Delene[2], Christian Nairy[2], Kenneth Lee Thornhill II[3], Joseph Finlon[4], Darin W Toohey[5], Andrew Heymsfield[6], Aaron Bansemer[7], Robert Rauber[8], Emma Järvinen[9] and Martin Schnaiter[10], (1)Cooperative Institute for Severe and High-Impact Weather Research and Operations, University of Oklahoma, Norman, OK, (2)University of North Dakota, Atmospheric Sciences, Grand Forks, ND, (3)NASA Langley Research Center, Hampton, (4)University of Illinois at Urbana Champaign, Urbana, IL, (5)Univ Colorado, Boulder, CO, (6)National Center for Atmospheric Research, Boulder, CO, (7)NCAR, Boulder, CO, (8)University of Illinois at Urbana-Champaign, Department of Atmospheric Sciences, Urbana, IL, (9)Karlsruhe Institute of Technology, Karlsruhe, Germany, (10)Karlsruhe Institute of Technology, Institute of Meteorology and Climate Research, Atmospheric Aerosol Research (IMK-AAF), Karlsruhe, Germany

- *Wednesday, 14 December 2022*
- *11:40 - 11:50*
- *McCormick Place - E258 (Lakeside, Level 2)*

[A33A-06 - The Horus All-Digital Phased Array Weather Radar – System Overview and First Results](#)
Robert Dean Palmer[1], David Schvartzman[2], David Joseph Bodine[3], Boon Leng Cheong[4], Caleb Fulton[2], Pierre-Emmanuel Kirstetter[5], Jorge Salazar-Cerreno[6], Hjalti Sigmarsson[2], Mark B Yeary[7] and Tian-You Yu[6], (1)University of Oklahoma, Advanced Radar Research Center, Norman, OK, (2)University of Oklahoma Norman Campus, Norman, OK, (3)University of Oklahoma, Advanced Radar Research Center, Norman, OK, (4)University of Oklahoma Norman Campus, Norman, OK, (5)University of Oklahoma, School of Meteorology and School of Civil Engineering and Environmental Science, Norman, OK, (6)University of Oklahoma, Norman, OK, (7)University of Oklahoma, Advanced Radar Research Center, Norman, OK

- *Wednesday, 14 December 2022*
- *11:50 - 12:00*
- *McCormick Place - E258 (Lakeside, Level 2)*

[H33D-06Future US floods under a warmer climate: frequency, flashiness, spatial extent, and seasonality](#)
Zhi Li[1], Shang Gao[2], Mengye Chen[3], Jonathan J Gourley[4] and Yang Hong[2], (1)Univ of Oklahoma Norman Campus, Norman, OK, (2)Univ of Oklahoma, Civil Engineering and Environmental Science, Norman, OK, (3) Univ of Oklahoma, Norman, OK, (4)National Severe Storms Lab, Oklahoma City, OK

- *Wednesday, 14 December 2022*
- *11:50 - 12:00*
- *McCormick Place - E352 (Lakeside, Level 3)*

[A34D - Boundary Layer Processes and Turbulence I Online Poster Discussion](#)
Scott Salesky, Univ of Oklahoma, School of Meteorology, Norman, OK, Marco Giovanni Giometto, Columbia Univ, Civil Eng and Eng Mechanics, NY, Shane Mayor, Cal State University Chico, Earth and Environmental Sciences, Chico, CA, and Paola Crippa, Univ of Notre Dame, Civil and Environmental Eng and Earth Sciences, Notre Dame, IN

- *Wednesday, 14 December 2022*
- *13:45 - 14:45*
- *Online Only*

[A35H-1550On the Detection of Cloud Seeding Effects with Radar in Winter Orographic Cloud Systems](#)
Troy Zaremba[1], Robert Rauber[2], Jesse Loveridge[2], Larry Di Girolamo[2] and Greg M McFarquhar[3], (1)Univ of Illinois at Urbana Champaign, Atmospheric Sciences, Urbana, IL, (2)Univ of Illinois at Urbana-Champaign, Atmospheric Sciences, Urbana, IL, (3)Coop Inst for Severe and High-Impact Weather Research & Operations, Univ of Oklahoma, Norman, OK

- *Wednesday, 14 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall A (South, Level 3)*

[A35H-1553Precipitation Microphysics in Tropical Cyclones: A Global Perspective](#)
Noah Brauer, University of Oklahoma Norman Campus, Advanced Radar Research Center, School of Meteorology, Norman, OK, Pierre-Emmanuel Kirstetter, Univ of Oklahoma, School of Meteorology and Civil Engineering and Environmental Science, Norman, OK, Jeffrey B Basara, Univ of Oklahoma, School of Meteorology; School of Civil Engineering and Environmental Science, Norman, OK, Svetla M Hristova-Veleva, Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, and Simone Tanelli, Jet Propulsion Laboratory, Pasadena, CA

- *Wednesday, 14 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall - A (South, Level 3)*

[A35K - Boundary Layer Processes and Turbulence II Poster](#) Session
Scott Salesky, University of Oklahoma, School of Meteorology, Norman, OK, Marco Giovanni Giometto, Columbia University, Civil Engineering and Engineering Mechanics, New York, Shane Mayor, California State University Chico, Earth and Environmental Sciences, Chico, CA, and Paola Crippa, University of Notre Dame, Department of Civil and Environmental Engineering and Earth Sciences, Notre Dame, IN

- *Wednesday, 14 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall A (South, Level 3)*

A35K-1591The Effects of Nonstationary Forcings on Organization and Turbulent Transport in the Convective Boundary Layer

Robert Frost, University of Oklahoma, Norman, Oklahoma, Scott Salesky, University of Oklahoma Norman Campus, Norman, OK, and Brian R Greene, University of Oklahoma, School of Meteorology, Norman, OK

- *Wednesday, 14 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall A (South, Level 3)*

A35N-1652A Multi-Probe Automated Classification of Ice Crystal Habits During the IMPACTS Campaign

Julian Schima, Cooperative Institute for Severe and High-Impact Weather Research and Operations (CIWRO), University of Oklahoma, Norman, OK, Greg M McFarquhar, Cooperative Institute for Severe and High-Impact Weather Research and Operations, University of Oklahoma, Norman, OK, David J Delene, University of North Dakota, Atmospheric Sciences, Grand Forks, ND, Andrew Heymsfield, National Center for Atmospheric Research, Boulder, CO, Aaron Bansemer, NCAR, Boulder, CO, Martin Schnaiter, Karlsruhe Institute of Technology, Institute of Meteorology and Climate Research, Atmospheric Aerosol Research (IMK-AAF), Karlsruhe, Germany, Joseph Finlon, University of Illinois at Urbana Champaign, Urbana, IL, Emma Järvinen, Karlsruhe Institute of Technology, Karlsruhe, Germany and Fritz Waitz, Karlsruhe Institute of Technology, Institute of Meteorology and Climate Research, Karlsruhe, Germany

- *Wednesday, 14 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall A (South, Level 3)*

A35N-1659Particle Shattering of Tube-type Cloud Microphysical Probes

David J Delene[1], Christian Nairy[1], Nicholas Camp[2], Marwa Majdi[1], Andrew G Detwiler[3], Aaron Bansemer[4], Andrew Heymsfield[5], Greg M McFarquhar[6], Joseph Finlon[7], Robert Rauber[8] and Martin Schnaiter[9], (1)University of North Dakota, Atmospheric Sciences, Grand Forks, ND, (2)University of North Dakota, Atmospheric Sciences, Grand Forks, ND, (3)South Dakota School of Mines and Technology, Atmospheric and Environmental Sciences, Rapid City, SD, (4)NCAR, Boulder, CO, (5)National Center for Atmospheric Research, Boulder, CO, (6)Cooperative Institute for Severe and High-Impact Weather Research and Operations, University of Oklahoma, Norman, OK, (7)University of Illinois at Urbana Champaign, Urbana, IL, (8)University of Illinois at Urbana-Champaign, Department of Atmospheric Sciences, Urbana, (9)Karlsruhe Institute of Technology, Institute of Meteorology and Climate Research, Atmospheric Aerosol Research (IMK-AAF), Karlsruhe, Germany

- *Wednesday, 14 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall A (South, Level 3)*

A35O-1669The Performance of Filtered Leapfrog Schemes in Benchmark Simulations

Paul Williams, University of Reading, Reading, United Kingdom, Jerry M. Straka, University of Oklahoma, School of Meteorology, Norman, OK and Katharine M Kanak, Norman, OK

- *Wednesday, 14 December 2022*
- 14:45 - 18:15
- *McCormick Place - Poster Hall, Hall - A (South, Level 3)*

H35P-1317Evaluation of the performance of IMERG from the precipitation event perspective in CONUS

Runze Li[1], Clément Guilloteau[2], Efi Foufoula-Georgiou[1,3] and Pierre-Emmanuel Kirstetter[4,5], (1)University of California Irvine, Department of Civil and Environmental Engineering, Irvine, CA, (2)University of California Irvine, Civil and Environmental Engineering, Irvine, CA, (3)University of California Irvine, Department of Earth System Science, Irvine, CA, (4)University of Oklahoma, Hydrometeorology and Remote Sensing Laboratory, Norman, OK, (5)NOAA/National Severe Storms Laboratory, Norman, OK

- *Wednesday, 14 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall - A (South, Level 3)*

NS35B-0383Clay Volume Estimation Using Electrical Resistivity Tomography Utilizing ResIPy

John McKnight, Univ of Oklahoma, Norman, OK, and Sina Saneiyan, Univ of Oklahoma, School of Geosciences, Norman, OK

- *Wednesday, 14 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall A (South, Level 3)*

NS35A-0382Evaluation of Saltwater Intrusion using Electrical Resistivity and Geochemical Measurements in Brazoria County, Texas

Vanessa Rios Perez[1], Leah E Jackson[2], Kato T. Dee[1] and Sina Saneiyan[1], (1)Univ of Oklahoma, School of Geosciences, Norman, OK, (2)Oklahoma Geological Survey, Norman, OK

- *Wednesday, 14 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall A (South, Level 3)*

GC35L-0830 - Large spatial variation and stagnation of cropland gross primary production increases the challenges of sustainable grain production and food security in China

Fang Liu, Univ of Oklahoma, Norman, OK, Xiangming Xiao, Microbiology and Plant Biology, Center for Spatial Analysis, Univ of Oklahoma, Norman, OK, Yuanwei Qin, Univ of Oklahoma, Microbiology and Plant Biology, Norman, OK, HuiMin Yan, CAS Chinese Academy of Sciences, Beijng, China, Jikun Huang, Peking University, Beijing, China, Xiaocui Wu, Univ of Illinois, Urbana-Champaign, IL, Yao Zhang, Peking University, Sino-French Institute for Earth System Science, Urban and Environmental Sciences, Beijing, China, Zhenhua Zou, Univ of Maryland College Park, Geographical Sciences, College Park, MD, and Russell Doughty, Univ of Oklahoma, GeoCarb Mission and the College of Atmospheric and Geographic Sciences, Norman, OK

- *Wednesday, 14 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall - A (South, Level 3)*

ED35A-02Is DEI Work Valued? A Survey of Geoscience Faculty

Morgan Woodle[1], Alisa Kotash[1], Joyeeta Bhattacharya[1], Megan Elwood Madden[1], Amy Cerato[1], Mashhad Fahs[1], Jane Irungu[1], Elinor R Martin[2], Lori Snyder[1] and Gerilyn S Soreghan[3], (1)Univ of Oklahoma, Norman, OK, (2)Univ of Oklahoma, School of Meteorology, Norman, OK, (3)Univ of Oklahoma, Norman, OK

- *Wednesday, 14 December 2022*
- *15:00 - 15:10*
- *McCormick Place - N426c (North, Level 4)*

ED35A-03Raising Our Expectations for DEI Work in Geoscience Faculty Evaluation Systems: An Insight Into Who Sustains This Work and How This Labor is Recognized and Rewarded

Alisa Kotash[1], Morgan Woodle[1], Joyeeta Bhattacharya[1], Megan Elwood Madden[1], Amy Cerato[1], Mashhad Fahs[1], Jane Irungu[1], Elinor R Martin[2], Lori Snyder[1] and Gerilyn S Soreghan[3], (1)Univ of Oklahoma, Norman, OK, (2)Univ of Oklahoma, School of Meteorology, Norman, OK (3)Univ of Oklahoma, Geology and Geophysics, Norman, OK

- *Wednesday, 14 December 2022*
- *15:10 - 15:20*
- *McCormick Place - N426c (North, Level 4)*

B35A-04 - Annual Forest Maps in the Contiguous United States during 2015-2017 from Analyses of PALSAR-2 and Landsat Images

Xiangming Xiao[1], Jie Wang[1], Yuanwei Qin[2], Jinwei Dong[3], Geli Zhang[4], Xuebin Yang[5] and Xiaocui Wu[6], (1)Univ of Oklahoma Norman Campus, Microbiology and Plant Biology, Norman, OK, (2)Univ of Oklahoma, Microbiology and Plant Biology, Norman, OK, (3)Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, Beijing, China, (4)China Agricultural University, College of Land Science and Technology, Beijing, China, (5)Univ of Oklahoma Norman Campus, Norman, OK, (6)Univ of Illinois, Urbana-Champaign, IL

- *Wednesday, 14 December 2022*
- *15:24 - 15:36*
- *McCormick Place - S405b (South, Level 4)*

THURSDAY, 15 DECEMBER

[B41G-01 - Asynchrony of Spaceborne Chlorophyll Fluorescence and the Near Infrared Reflectance of Vegetation in Tropical Forests](#)

Russell Doughty[1], Luis Guanter[2], Nicholas Parazoo[3], Joanna Joiner[4], Troy Magney[5], Jennifer E Johnson[6], Philipp Köhler[7], Christian Frankenberg[8], Xiangming Xiao[9], Zoe Pierrat[10], Yujie Wang[11], Andrew Maguire[12], Alexander Norton[13], Peter Somkuti[14], Shuang Ma[13], Yuanwei Qin[15], Alexander J Turner[16], Sean Crowell[17] and Berrien Moore III[18], (1)University of Oklahoma Norman Campus, Norman, OK, (2)Research Institute of Water and Environmental Engineering (IIAMA), Universitat Politècnica de València, Valencia, Spain, (3)Jet Propulsion Laboratory (JPL), Pasadena, CA, (4)NASA GSFC, Greenbelt, MD, (5)University of California Davis, Department of Plant Sciences, Davis, CA, (6)Carnegie Institution for Science, Stanford, CA, (7)EUMETSAT, Remote Sensing and Products Division, Darmstadt, Germany, (8)NASA Jet Propulsion Laboratory, Pasadena, CA, (9)Department of Microbiology and Plant Biology, Center for Spatial Analysis, University of Oklahoma, Norman, OK, (10)University of California Los Angeles, Los Angeles, CA, (11)California Institute of Technology, Pasadena, CA, (12)Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, (13)Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, (14)University of Oklahoma Norman Campus, Department of Meteorology, Norman, OK, (15)University of Oklahoma, Department of Microbiology and Plant Biology, Norman, OK, (16)University of Washington, Department of Atmospheric Sciences, Seattle, WA, (17)University of Oklahoma, Norman, OK, (18)University of Oklahoma, School of Meteorology, Norman, OK

- *Thursday, 15 December 2022*
- *08:02 - 08:12*
- *Online Only*

[A42R-1938 - Overview of Purdue's Mobile Disdrometer Operations in PERiLS 2022](#)

Daniel Thomas Dawson II[1], Qin Jiang[2], Jacob Bruss[1], Matthew Graber[1], Funing LI[2], Hamid Ali Syed[1], Faith Mary Vendl[1], Quinn Asher Wilson[1], Michael I Biggerstaff[3] and Sean Waugh[4], (1)Purdue University, Earth, Atmospheric, and Planetary Sciences, West Lafayette, IN, (2)Purdue University, Earth, Atmospheric, and Planetary Sciences, West Lafayette, IN, (3)University of Oklahoma Norman Campus, Norman, OK, (4)NOAA/NSSL, Norman, OK

- *Thursday, 15 December 2022*
- *09:00 - 12:30*
- *McCormick Place - Poster Hall, Hall - A (South, Level 3)*

[A42E - Boundary Layer Processes and Turbulence III Oral](#) Session

Scott Salesky, University of Oklahoma, School of Meteorology, Norman, OK, Marco Giovanni Giometto, Columbia University, Civil Engineering and Engineering Mechanics, New York, NY, Shane Mayor, California State University Chico, Earth and Environmental Sciences, Chico, CA, and Paola Crippa, University of Notre Dame, Department of Civil and Environmental Engineering and Earth Sciences, Notre Dame, IN

- *Thursday, 15 December 2022*
- *09:00 - 10:30*
- *McCormick Place - E353ab (Lakeside, Level 3)*

[B42J-1749 - Annual Maps of Surface Water Body, Paddy Rice, and Wetlands in Northeast China Using PALSAR, Sentinel-1, Sentinel-2, Landsat, and MODIS Imagery in 2020](#)

Chenchen Zhang[1], Xiangming Xiao[2], Yuanwei Qin[3] and Xuebin Yang[1], (1)University of Oklahoma Norman Campus, Norman, OK, (2) Microbiology and Plant Biology, Center for Spatial Analysis, University of Oklahoma, Norman, OK, (3)University of Oklahoma Norman Campus, Norman, OK

- *Thursday, 15 December 2022*
- *09:00 - 12:30*
- *McCormick Place - Poster Hall, Hall - A (South, Level 3)*

B42K-1757 - North American Methane enhancements as seen by TROPOMI; Model-data comparison and validation with TCCON observations

Nalini Krishnankutty[1], Sean Crowell[2], Xiaoming Hu[3] and Peter Somkuti[1], (1)Univ of Oklahoma Norman Campus, Department of Meteorology, Norman, OK, (2)Univ of Oklahoma, Norman, OK (3) Univ of Oklahoma, Norman, OK

- *Thursday, 15 December 2022*
- *09:00 - 12:30*
- *McCormick Place - Poster Hall, Hall A (South, Level 3)*

H42K-1421 - Improving Sub-seasonal to Seasonal Forecast for Better Predictions upon the Occurrence of Extreme Precipitation Events over the Contiguous United States

Lujun Zhang[1], Tiantian Yang[1], Shang Gao[1], Yang Hong[1], Qin Zhang[2], Xin Wen[3] and Chuntian Cheng[4], (1)University of Oklahoma, School of Civil Engineering and Environmental Science, Norman, OK, (2)NOAA Climate Prediction Center, College Park, MD, (3)Hohai University, College of Water Conservancy and Hydropower Engineering, Nanjing, China, (4)Dalian University of Technology, Institute of Hydropower and Hydroinformatics, Dalian, China

- *Thursday, 15 December 2022*
- *09:00 - 12:30*
- *McCormick Place - Poster Hall, Hall - A (South, Level 3)*

GH42B-03 Mapping the Thermal Potential for Urban Malaria Transmission with Satellite Earth Observations

Michael C Wimberly[1], Mercedes Pascual[2], Nikhil Poudyal[1] and Courtney C Murdock[3], (1)University of Oklahoma, Geography and Environmental Sustainability, Norman, OK, (2)University of Chicago, Chicago, IL, (3)Cornell University, Entomology, Ithaca, NY

- *Thursday, 15 December 2022*
- *09:20 - 09:30*
- *McCormick Place - E253ab (Lakeside, Level 2)*

A42A-03 Spatiotemporal Gap-Filling of NASA Satellite-Derived-AOD in the Western U.S. using Machine Learning Techniques

Jeffrey Lee[1], Heather Holmes[2] and Marcela Loría-Salazar[1], (1)University of Oklahoma, School of Meteorology, Norman, OK, (2)University of Utah, Dept of Chemical Engineering, Salt Lake City, UT

- *Thursday, 15 December 2022*
- 09:22 - 09:32
- *McCormick Place - E451b (Lakeside, Level 4)*

A42E-06 Turbulent Coherent Structures in the Stable Atmospheric Boundary Layer: A Large-Eddy Simulation Study

Brian R Greene and Scott Salesky, University of Oklahoma, School of Meteorology, Norman, OK

- *Thursday, 15 December 2022*
- *09:55 - 10:05*
- *McCormick Place - E353ab (Lakeside, Level 3)*

A42E-07 Uniform Momentum and Temperature Zones in the Convective Boundary Layer

Scott Salesky, University of Oklahoma Norman Campus, Norman, OK

- *Thursday, 15 December 2022*
- *10:05 - 10:15*
- *McCormick Place - E353ab (Lakeside, Level 3)*

A43B-01 Notable Impact of Wildfires in the Western US on Weather Hazards in the Central US (Invited)

Jiwen Fan[1], Yuwei Zhang[2], ManishKumar Shrivastava[1], Cameron R Homeyer[3], Yuan Wang[4] and John Seinfeld[5], (1)Pacific Northwest National Laboratory, Richland, WA, (2)Pacific Northwest National Laboratory, Richland, WA, (3)University of Oklahoma, School of Meteorology, Norman, OK, (4)California Institute of Technology, Division of Geological and Planetary Sciences, Pasadena, CA, (5)California Institute of Technology, Pasadena, CA

- *Thursday, 15 December 2022*
- *11:00 - 11:10*
- *McCormick Place - E350 (Lakeside, Level 3)*

[A43C - Boundary Layer Processes and Turbulence IV Oral](#) Session
Scott Salesky, University of Oklahoma, School of Meteorology, Norman, OK, Marco Giovanni Giometto, Columbia University, Civil Engineering and Engineering Mechanics, New York, NY, Shane Mayor, California State University Chico, Earth and Environmental Sciences, Chico, CA, and Paola Crippa, University of Notre Dame, Civil and Environmental Engineering and Earth Sciences, Notre Dame, IN

- *Thursday, 15 December 2022*
- *11:00 - 12:30*
- *McCormick Place - E353ab (Lakeside, Level 3)*

[A45E - Boundary Layer Processes and Turbulence V Oral](#) Session
Scott Salesky, University of Oklahoma, School of Meteorology, Norman, OK, Marco Giovanni Giometto, Columbia University, Civil Engineering and Engineering Mechanics, New York, NY, Shane Mayor, California State University Chico, Earth and Environmental Sciences, Chico, CA, Paola Crippa, University of Notre Dame, Notre Dame, IN, and Branko Kosovic, National Center for Atmospheric Research, Boulder, CO

- *Thursday, 15 December 2022*
- *14:45 - 16:15*
- *McCormick Place - E353ab (Lakeside, Level 3)*

[A45M-2022 - Experiment of Sea Breeze Convection, Aerosols, Precipitation and Environment (ESCAPE)](#)
Pavlos Kollias[1,2], Greg M McFarquhar[3], Mengistu Wolde[4], Paul Lawson[5], David Joseph Bodine[6], Roelof T Bruintjes[7], Eric C Bruning[8], V. Chandrasekar[9], Paul J DeMott[10], Andrew Dzambo[3], Michael P Jensen[2], Matthew R Kumjian[11], Katia Lamer[12], Zachary J Lebo[13], Timothy Logan[14], Kelly Lombardo[11], Edward P Luke[2], Mariko Oue[1], Gregory C Roberts[15], Raymond A Shaw[16], Jeffrey Snyder[17], Susan C van den Heever[10], Nithin Allwayin[16], Ben Ascher[18], Jason Barr[1], Kenny Bala[19], Natalia Bliankinshtein[20], Anthony Brown[21], Kelcy N Brunner[8], Zackary Mages[1], Christina S McCluskey[22], Katherine McKeown[23], Erin Leghart[24], Leonid Nichman[25], Miles Litzmann[26], Cuong Nguyen[20], Ryan J Patnaude[27], Saurabh Patil[28], Russell Perkins[10], Peisang Tsai[22], Keyvan Ranjbar[29], Elise Rosky[30], Bernat P Treserras[31], Kristofer Tuftedal[32] and Cory Wolff[33] (1)Stony Brook Univ, Stony Brook, NY, (2)Brookhaven National Laboratory, Upton,NY, (3)Cooperative Institute for Severe and High-Impact Weather Research and Operations, University of Oklahoma, Norman, OK (4)National Research Council Canada, Ottawa, ON, Canada, (5)SPEC Inc, Boulder, CO, (6)Univ of Oklahoma, Advanced Radar Research Center, Norman, OK, (7)National Center for Atmospheric Resesarch, Boulder, CO, (8)Texas Tech University, Lubbock, TX, (9)Colorado State Univ, Electrical and Computer Engineering, Fort Collins, CO, (10)Colorado State Univ, Department of Atmospheric Science, Fort Collins, CO, (11)Pennsylvania State Univ, University Park, PA, (12)Brookhaven National Laboratory, Brookhaven, NY, (13)Univ of Wyoming, Atmospheric Science, Laramie, WY, (14)Texas A & M Univ, College Station, TX, (15)Scripps Institution of Oceanography, La Jolla, CA, (16)Michigan Technological Univ, Houghton, MI, (17)National Severe Storms Lab Norman, Norman, OK, (18)Colorado State Univ, Department of Atmospheric Sciences, Ft. Collins, CO, (19)National Research Council Canada, Ottawa, Canada, (20)National Research Council Canada, Flight Research Laboratory, Ottawa, ON, Canada, (21)National Research Council - Canada, Ottawa, ON, Canada, (22)University Corporation for Atmospheric Research, Boulder, CO, (23)Pennsylvania State Univ Main Campus, Meteorology and Atmospheric Science, State College, PA, (24)Stony Brook University, Division of Atmospheric Sciences, Stony Brook, NY, (25)National Research Council of Canada, Ottawa, ON, Canada, (26)Stony Brook Univ, Atmospheric Sciences, Stony Brook, NY, (27)Colorado State Univ, Fort Collins, CO, (28)Univ of Oklahoma, School of Meteorology, Norman, OK, (29)National Research Council of Canada, Ottawa, Canada, (30)Michigan Technological Univ, Houghton, MI, (31)McGill Univ, Montreal, Canada, (32)Stony Brook University, Stony Brook, NY, (33)National Center for Atmospheric Research, Earth Observing Laboratory, Boulder, CO

- *Thursday, 15 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall A (South, Level 3)*

[B45L-1872Impacts of Warming on Carbon Fluxes from Individuals to Ecosystems](#)
Rose Brinkhoff, Univ of Michigan Ann Arbor, Ann Arbor, MI, Aimee Classen, Univ of Michigan Ann Arbor, Ann Arbor, MI, Nathan Sanders, Univ of Michigan, Ann Arbor, MI, Nicholas G Smith, Purdue Univ, West Lafayette, IN, Lara Souza, Univ of Oklahoma, Norman, OK, and Mark Joseph Hovenden, Univ of Tasmania, Hobart, TAS, Australia

- *Thursday, 15 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall A (South, Level 3)*

[GC45E-1020Glycosidases Facilitated Soil Organic Carbon and Total Nitrogen Sequestrations under Intensive Fertilization](#)

Xuehan Wang[1], Jianwei Li[1], Siyang Jian[2] and Lahiru Gamage[1], (1)Tennessee State University, Nashville, TN, (2)University of Oklahoma, Institute for Environmental Genomics, Department of Microbiology and Plant Biology, Norman, OK

- *Thursday, 15 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall A (South, Level 3)*

[GH45B-0677Effects of Different Environmental Data Sources on West Nile Virus Forecasting Accuracy from Arbovirus Monitoring and Prediction (ArboMAP) in Multiple US States](#)

Dawn M Nekorchuk, University of Oklahoma, Geography and Environmental Sustainability, Norman, OK, Anita Bharadwaja, South Dakota Department of Health, Sioux Falls, SD, Julia Field, Michigan Department of Health and Human Services, Lansing, MI, Caio Martinelle B. de Franca, Southern Nazarene University, Biology, Bethany, OK, Kimberly Signs, Michigan Department of Health and Human Services, Lansing, MI, Sean Simonson, Louisiana Department of Health, New Orleans, LA and Michael C Wimberly, University of Oklahoma, Norman, OK

- *Thursday, 15 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall - A (South, Level 3)*

[MR45B-0090Ultrasonic Velocity Anisotropy in Crystalline Basement Rocks of the Central United States](#)

William M Kibikas, Sandia National Laboratories, Albuquerque, NM, Jacob I Walter, Oklahoma Geological Survey, Leonard, OK, Ahmad Ghassemi, University of Oklahoma Norman Campus, Mewbourne College of Petroleum and Geological Engineering, Norman, OK, and Brett M Carpenter, University of Oklahoma, School of Geosciences, Norman, OK

- *Thursday, 15 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall A (South, Level 3)*

[PP45C-1155Assessment of Drought Characteristics of the Past Millennium using a High Resolution PMIP4 Model](#)

Stuart Edris, Norman, OK, Jeffrey B Basara, University of Oklahoma, School of Meteorology; School of Civil Engineering and Environmental Science, Norman, OK, Jordan I Christian, University of Oklahoma, School of Meteorology, Norman, OK, Jason C Furtado, University of Oklahoma, School of Meterology, Norman, OK, Amy McGovern, University of Oklahoma, Computer Science; School of Meteorology, Norman, OK and Xiangming Xiao, Department of Microbiology and Plant Biology, Center for Spatial Analysis, University of Oklahoma, Norman, OK

- *Thursday, 15 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall A (South, Level 3)*

[S45E-0209Investigation of the Teleseismic Event Record by Distributed Acoustic Sensing Array: Teleseismic Receiver Function Analysis Using DAS and Broadband Station](#)

Zhuobo Wang, University of Oklahoma Norman Campus, Norman, OK, and Xiaowei Chen, University of Oklahoma, School of Geosciences, Norman, OK

- *Thursday, 15 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall A (South, Level 3)*

[A46C - Boundary Layer Processes and Turbulence VI Oral](#) Session

Scott Salesky, University of Oklahoma, School of Meteorology, Norman, OK, Marco Giovanni Giometto, Columbia University, Civil Engineering and Engineering Mechanics, New York, Shane Mayor, California State University Chico, Earth and Environmental Sciences, Chico, CA, and Paola Crippa, University of Notre Dame, Notre Dame, IN

- *Thursday, 15 December 2022*
- *16:45 - 18:15*
- *McCormick Place - E353ab (Lakeside, Level 3)*

[T46B-04Continental rifting in the South China Sea through extension and high heat flow: An extended history](#)
Alex Burton-Johnson, NERC British Antarctic Survey, Cambridge, UK and Andrew Cullen, University of Oklahoma Norman Campus, Norman, OK

- *Thursday, 15 December 2022*
- *17:15 - 17:25*
- *McCormick Place - S104a (South, Level 1)*

FRIDAY, 16 DECEMBER

[A51A - Advances of Atmospheric Remote Sensing Inversion I Online Poster Discussion](#)

Oleg Dubovik, University of Lille 1, Villeneuve d'Ascq, France, Feng Xu, University of Oklahoma, School of Meteorology, Norman, OK, Reed Espinosa, University of Maryland Baltimore County, Physics, Baltimore, MD and Meng Gao, SSAI, NASA Goddard Space Flight Center, Greenbelt, MD

- *Friday, 16 December 2022*
- *08:00 - 09:00*
- *Online Only*

[A52I-1075 - An Correlation-based Inversion Method for Aerosol Remote Sensing and Test Using AERONET and POLDER Measurements](#)Taozhong Huang[1], Feng Xu[2], Jens Redemann[3], Lan Gao[3], Meng Gao[4] and Oleg Dubovik[5], (1)The University of Oklahoma, School of Meteorology, Norman, OK, (2)University of Oklahoma, School of Meteorology, Norman, OK, (3)University of Oklahoma, School of Meteorology, Norman, OK, (4)SSAI, NASA Goddard Space Flight Center, Greenbelt, MD (5)Laboratoire d'Optique Atmosphérique, CNRS/University of Lille, Lille, France

- *Friday, 16 December 2022*
- *09:00 - 12:30*
- *McCormick Place - Poster Hall, Hall - A (South, Level 3)*

[A52I-1076Multi-Angle Imager for Aerosols (MAIA) Level-2 Aerosol Inversion Algorithm Testing Using AirMSPI and POLDER Measurements](#)
Benting Chen[1], Feng Xu[2], Olga V. Kalashnikova[3], David J Diner[3], James McDuffie[4] and Oleg Dubovik[5], (1)University of Oklahoma, Norman, OK, (2)University of Oklahoma, School of Meteorology, Norman, OK, (3)Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, (4)NASA Jet Propulsion Laboratory, Pasadena, CA, (5)Laboratoire d'Optique Atmosphérique, CNRS/University of Lille, LIlle, France

- *Friday, 16 December 2022*
- *09:00 - 12:30*
- *McCormick Place - Poster Hall, Hall - A (South, Level 3)*

[A52I-1077A Markov chain model for polarized radiative transfer in the thermal infrared and application in dust particle inversion](#)
Feng Xu[1], Reed Espinosa[2], Benting Chen[3], Olga V. Kalashnikova[4], Lan Gao[5], Michael J Garay[6], Jens Redemann[5], Oleg Dubovik[7] and Zhao-Cheng Zeng[8], (1)University of Oklahoma Norman Campus, School of Meteorology, Norman, OK, (2)Joint Center for Earth Systems Technology, UMBC, Baltimore, MD, (3)University of Oklahoma, Norman, OK, (4)Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, (5)University of Oklahoma, School of Meteorology, Norman, OK, (6)Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, (7)Laboratoire d'Optique Atmosphérique, CNRS/University of Lille, LIlle, France, (8)Jet Propulsion Laboratory, Pasadena, CA

- *Friday, 16 December 2022*
- *09:00 - 12:30*
- *McCormick Place - Poster Hall, Hall - A (South, Level 3)*

[A52I-1082Grand challenges in satellite remote sensing](#)
Oleg Dubovik, Laboratoire d'Optique Atmosphérique, CNRS/University of Lille, Lille, France, Gregory L Schuster, NASA Langley Research Center, Hampton, VA, Feng Xu, University of Oklahoma, School of Meteorology, Norman, OK, Yongxiang Hu, NASA Langley Research Center, Hampton, VA, Hartmut Boech, University of Leicester, Leicester, United Kingdom, Jochen Landgraf, SRON Netherlands Institute for Space Research, Utrecht, Netherlands and Zhengqiang Li, Aerospace Information Research Institute, Chinese Academy of Sciences, Beijing, China

- *Friday, 16 December 2022*
- *09:00 - 12:30*
- *McCormick Place - Poster Hall, Hall - A (South, Level 3)*

[B52D-0870Incorporation of Microbial Communities into Reactive Transport Modeling of Nitrogen in Subsurface Systems under Rainfall Perturbations](#)

Jinwoo Im[1], Andrew Putt[2], Kathleen F Walker[2], James Marquis[3], Lauren M Lui[1], Alex Carr[4], Yupeng Fan[5], Jennifer Goff[6], Kristopher Hunt[7], Jonathan Michael[5], Farris Poole[8], Yajiao Wang[5], Michael Adams[8], Nitin S. Baliga[4], David Stahl[7], Jizhong Zhou[5], Matthew W. Fields[3], Terry Hazen[2,9], Adam P Arkin[1,10] and Michelle E Newcomer[11], (1)Lawrence Berkeley National Laboratory, Berkeley, CA, (2)University of Tennessee, Knoxville, TN, (3)Montana State University, Bozeman, MT, (4)Institute for Systems Biology, Seattle, WA, (5)University of Oklahoma, Norman, OK, (6)University of Georgia, Athens, GA, (7)University of Washington, Seattle, WA, (8)University of Georgia, Athens, GA, (9)Oak Ridge National Lab, Oak Ridge, TN, (10)University of California, Berkeley, CA, (11)Lawrence Berkeley National Laboratory, Berkeley, CA

- *Friday, 16 December 2022*
- *09:00 - 12:30*
- *McCormick Place - Poster Hall, Hall A (South, Level 3)*

[B52G-0894Patterns and drivers of recent disturbance in tropical forest reserves of Southwestern Ghana](#)

Dan Wanyama, University of Oklahoma Norman Campus, Geography and Environmental Sustainability, Norman, OK, Michael C Wimberly, University of Oklahoma Norman Campus, Norman, OK, and Foster Kwame Mensah, Center for Remote Sensing and Geographic Information Services (CERSGIS), University of Ghana, Legon, Accra, Ghana

- *Friday, 16 December 2022*
- *09:00 - 12:30*
- *McCormick Place - Poster Hall, Hall - A (South, Level)*

[B52G-0899 - Large Loss and Rapid Recovery of Vegetation Cover and Aboveground Biomass Over Forest Areas in Australia during 2019-2020](#)

Yuanwei Qin, University of Oklahoma Norman Campus, Norman, OK, Xiangming Xiao, Department of Microbiology and Plant Biology, Center for Spatial Analysis, University of Oklahoma, Norman, OK, Wigneron Jean-Pierre, ISPA, UMR 1391, INRA Nouvelle-Aquitaine, Villenave-d'Ornon, France, Philippe Ciais, Laboratoire des Sciences du Climat et de l'Environnement, Gif-Sur-Yvette, France, Josep Gili Canadell, CSIRO Oceans and Atmosphere, Canberra, Australia, Martin Brandt, University of Copenhagen, Department of Geosciences and Natural Resource Management, København K, Denmark, Xiaojun Li, Inrae, Bordeaux, France, Lei Fan, Southwest University, Chongqing, China, Xiaocui Wu, University of Illinois, Urbana-Champaign, IL, Hao Tang, National University of Singapore, Geography, Singapore, Singapore, Ralph Dubayah, Univ Maryland, College Park, MD, Russell Doughty, California Institute of Technology, Pasadena, CA, Sean Crowell, University of Oklahoma, Norman, OK, Bo Zheng, Tsinghua Shenzhen International Graduate School, Shenzhen, China and Berrien Moore III, University of Oklahoma, School of Meteorology, Norman, OK

- *Friday, 16 December 2022*
- *09:00 - 12:30*
- *McCormick Place - Poster Hall, Hall A (South, Level 3)*

[GC52H - Global Changing Environment and Human Well-being: Impact, Policy, and Scientific Challenges I Poster](#)

Mengye Chen, University of Oklahoma Norman Campus, School of Civil Engineering and Environmental Science (CEES), Norman, OK, Ghassem Asrar, Universities Space Research Association, Columbia, NY, Yuyu Zhou, Iowa State University, Dept. of Geological & Atmospheric Sciences, Ames, IA, Min Chen, Pacific Northwest National Laboratory, Joint Global Change Research Institute, Richland, WA; University of Wisconsin Madison, Forest and Wildlife Ecology, Madison, WI, Jiaqi Zhang, University of Texas at Arlington, Civil Engineering, Arlington, TX, Shang Gao, University of Oklahoma, School of Civil Engineering and Environmental Science, Norman, OK, Mani Rouhi Rad, Texas A&M University College Station, Department of Agricultural Economics, College Station, TX, Chiyu Niu, The World Bank Group, Poverty and Equity Global Practice, Washington, DC, Yongjie Huang, School of Meteorology, University of Oklahoma, Norman, OK, and Amir Sapkota, University of Maryland College Park, School of Public Health, College Park, MD

- *Friday, 16 December 2022*
- *09:00 - 12:30*
- *McCormick Place - Poster Hall, Hall - A (South, Level 3)*

[H52H-0554](#)The influence of magnetic minerals on induced polarization measurements in sedimentary rocks

Klaudio Peshtani, Rutgers University Newark, Earth & Environmental Sciences, Newark, NJ, Andreas Weller, Technische Universität Clausthal, Claustal, Germany, Sina Saneiyan, University of Oklahoma, School of Geosciences, Norman, OK, and Lee D Slater, Rutgers University, Earth & Environmental Sciences, Newark, NJ

- *Friday, 16 December 2022*
- *09:00 - 12:30*
- *McCormick Place - Poster Hall, Hall A (South, Level 3)*

[GH52A-02](#)Spatiotemporal estimates of surface $PM_{2.5}$ concentrations in the western U.S. using NASA MODIS and VIIRS retrievals and data assimilation techniques

Sandra Marcela Loria Salazar, University of Oklahoma, School of Meteorology, Norman, OK, Jeffrey Lee, University of Oklahoma, School of Meteorology, Norman, OK, Cesunica Ivey, University of California Berkeley, Civil and Environmental Engineering, Berkeley, CA, Heather Holmes, University of Utah, Department of Chemical Engineering, Salt Lake City, UT, and Howard H. Chang, Emory University, Department of Biostatistics and Bioinformatics, Atlanta, GA

- *Friday, 16 December 2022*
- *09:15 - 09:25*
- *McCormick Place - E253ab (Lakeside, Level 2)*

[GH52A-03](#)Modeling spatiotemporal exposures of heat and wildfire smoke using atmospheric models and satellite remote sensing products

Heather Holmes[1], Kaiyu Chen[1], Jingting Huang[1], Sam Faulstich[1], Jacob Boomsma[2], Jeffrey Lee[3], Marcela Loría-Salazar[3], Lyndsey Darrow[4] and Matthew Strickland[4], (1)University of Utah, Department of Chemical Engineering, Salt Lake City, UT, (2)University of Utah, Department of Atmospheric Sciences, Salt Lake City, UT, (3)University of Oklahoma, School of Meteorology, Norman, OK, (4)University of Nevada Reno, School of Public Health, Reno, NV

- *Friday, 16 December 2022*
- *09:25 - 09:35*
- *McCormick Place - E253ab (Lakeside, Level 2)*

[B52A-05](#)Omics-enabled modeling of grassland microbial communities feedback to climate change

Jizhong Zhou[1], Siyang Jian[2], Zhifeng Yang[2], Gangsheng Wang[2], Xue Guo[3], Qun Gao[3], Zheng Shi[4] and Daliang Ning[2], (1)University of Oklahoma, Norman, OK, (2)University of Oklahoma, Institute for Environmental Genomics, Department of Microbiology and Plant Biology, Norman, OK, (3)Tsinghua University, School of Environment, Beijing, China, (4)University of Oklahoma, Institute for Environmental Genomics, Department of Microbiology and Plant Biology, Norman, OK

- *Friday, 16 December 2022*
- *09:40 - 09:50*
- *McCormick Place - S501bcd (South, Level 5)*

[A52B-08](#)Characteristics of Precipitation and MCS over the Peruvian Central Andes based on Convection-Permitting Simulations

Yongjie Huang[1], Ming Xue[2], Xiao-Ming Hu[3], Elinor R Martin[4], Hector Novoa[5], Renee A McPherson[6], Changhai Liu[7], Kyoko Ikeda[8], Roy Rasmussen[8], Andres Vitaliano Perez Pachari[5] and Isaac Yanqui Morales[5], (1)University of Oklahoma Norman Campus, Center for Analysis and Prediction of Storms (CAPS), Norman, OK, (2)Univ Oklahoma, Norman, OK, (3)University of Oklahoma Norman Campus, Center for Analysis and Prediction of Storms, Norman, OK, (4)University of Oklahoma, School of Meteorology, Norman, OK, (5)Universidad Nacional de San Agustín de Arequipa, Arequipa, Peru, (6)University of Oklahoma, Norman, OK, (7)National Center for Atmospheric Research, Boulder, CO, (8)NCAR/RAL, Boulder, CO

- *Friday, 16 December 2022*
- *10:10 - 10:20*
- *McCormick Place - E270 (Lakeside, Level 2)*

[NS53A - Near-Surface Geophysics for Characterizing and Monitoring Natural Hazards III Oral](#)
Sebastian Uhlemann, Lawrence Berkeley National Laboratory, Berkeley, CA, Sina Saneiyan, University of Oklahoma, School of Geosciences, Norman, OK, Angela Perrone, CNR Institute of Methodologies for Environmental Analysis, Potenza, Italy and Xavier Comas, Florida Atlantic University, Geosciences, Boca Raton, FL
- *Friday, 16 December 2022*
- *11:00 - 12:30*
- *McCormick Place - S104b (South, Level 1)*

[A53C-02Cloud Top Phase Characterization of Extratropical Cyclones over the Midwest and Northeast United States: Results from IMPACTS](#)
Troy Zaremba, University of Illinois at Urbana Champaign, Atmospheric Sciences, Urbana, IL, Robert Rauber, University of Illinois at Urbana-Champaign, Department of Atmospheric Sciences, Urbana, John E Yorks, SSAI/NASA GSFC, Greenbelt, MD, Greg M McFarquhar, Cooperative Institute for Severe and High-Impact Weather Research and Operations, University of Oklahoma, Norman, OK, Stephen D Nicholls, SSAI, Greenbelt, MD and Lynn A. McMurdie, University of Washington, Seattle, WA
- *Friday, 16 December 2022*
- *11:10 - 11:20*
- *McCormick Place - E350 (Lakeside, Level 3)*

[NH53A-02Global Projections of Flash Drought in a Warming Climate](#)
Jordan I Christian[1], Elinor R Martin[1], Jeffrey B Basara[2] and Jason C Furtado[3], (1)University of Oklahoma, School of Meteorology, Norman, OK, (2)University of Oklahoma, School of Meteorology; School of Civil Engineering and Environmental Science, Norman, OK, (3)University of Oklahoma, School of Meterology, Norman, OK
- *Friday, 16 December 2022*
- *11:15 - 11:25*
- *McCormick Place - E253cd (Lakeside, Level 2)*

[MR53A-04Geodetic and Microseismic Signatures of Crustal Faulting Following Large Earthquakes](#)
Junle Jiang, University of Oklahoma Norman Campus, School of Geosciences, Norman, OK
- *Friday, 16 December 2022*
- *11:32 - 11:42*
- *McCormick Place - S105a (South, Level 1)*

[B54A-02 - High Spatial Resolution Modeling of Gross Primary Production over Sugarcane Plantations](#)
Jorge Andres Celis, University of Oklahoma Norman Campus, Norman, OK, Xiangming Xiao, Department of Microbiology and Plant Biology, Center for Spatial Analysis, University of Oklahoma, Norman, OK, Paul White, USDA ARS, Houma, LA, and Osvaldo Cabral, Embrapa Meio Ambiente, Jaguariuna, Brazil
- *Friday, 16 December 2022*
- *13:55 - 14:05*
- *Online Only*

[A54A-03Comparison of MISR's and MAIA's Observing Strategies for Mapping Speciated Particulate Matter Air Pollution](#)
David J Diner[1], Stacey W Boland[2], Carol J Bruegge[3], Kevin A Burke[3], Sina Hasheminassab[4], Veljko M Jovanovic[3], Yang Liu[5], Alexei Lyapustin[6], Saagar Patel[4], Gerard van Harten[4], Feng Xu[7] and The MAIA Team, (1)NASA Jet Propulsion Laboratory, Pasadena, CA, (2)Jet Propulsion Laboratory, Pasadena, CA, (3)Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, (4)NASA Jet Propulsion Laboratory, Pasadena, CA, (5)Emory University, Gangarosa Department of Environmental Health, Atlanta, GA, (6)NASA Goddard Space Flight Center, Greenbelt, MD, (7)University of Oklahoma, School of Meteorology, Norman, OK
- *Friday, 16 December 2022*
- *14:05 - 14:15*
- *Online Only*

[A55B - Advances of Atmospheric Remote Sensing Inversion III Oral](#)
Oleg Dubovik, University of Lille 1, Villeneuve d'Ascq, France and Feng Xu, University of Oklahoma, School of Meteorology, Norman, OK
- *Friday, 16 December 2022*
- *14:45 - 16:15*
- *McCormick Place - E271ab (Lakeside, Level 2)*

[A55L-1266Factors Affecting Precipitation over Western Puerto Rico during the NASA 2021 CPEX-AW Project](#)
Kevin Martinez Lopez, University of Puerto Rico Mayaguez, Geology, Mayaguez, Puerto Rico, Naoko Sakaeda, University of Oklahoma Norman Campus, School of Meteorology, Norman, OK, Shun-Nan Wu, University of Oklahoma, Norman, OK, and Elinor R Martin, University of Oklahoma, School of Meteorology, Norman, OK
- *Friday, 16 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall - A (South, Level 3)*

[A55Q-1347Ground-Validation and Error Attribution of Near-Surface Air Temperature from AIRS in North America](#)
Yixin Wen[1], Shang Gao[2], Evan Fishbein[3], Bjorn Lambrigtsen[4], Chris Galli[5] and Hong Van T Dang[3], (1)University of Florida, Geography, Ft Walton Beach, FL, (2)University of Oklahoma, Civil Engineering and Environmental Science, Norman, OK, (3)JPL, Pasadena, CA (4)Jet Propulsion Lab, Pasadena, CA, (5)Synopticdata.com, Salt Lake City, UT
- *Friday, 16 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall - A (South, Level 3)*

[H55L-0728Building the Aquatic Intermittency effects on Microbiomes in Streams (AIMS) network to enable understanding of how intermittent flow impacts water quality and stream microbiomes](#)
Amy J Burgin[1], Daniel C Allen[2], Connor Brown[3], Stephen C. Cook[4], Sarah Flynn[5], Brett Nave[6], Erin C Seybold[7], Logan Swenson[3], Christopher Wheeler[8], Jessica Wilhelm[3], Lydia Zeglin[9], Kaci Zarek[5], Sam C Zipper[7], Aquatic Intermittency effects on Microbiomes in Streams AIMS[5] and Aquatic Intermittency effects on Microbiomes in Streams (AIMS) Team, (1)University of Kansas, Kansas Biological Survey, Lawrence, KS, (2)University of Oklahoma Norman Campus, Biology, Norman, OK, (3)University of Kansas, Lawrence, KS, (4)University of Oklahoma Norman Campus, Norman, OK, (5)University of Kansas, Lawrence, KS, (6)Kansas State University, Division of Biology, Manhattan, KS, (7)University of Kansas, Kansas Geological Survey, Lawrence, KS, (8)Georgia State University, Atlanta, GA, (9)Kansas State University, Division of Biology, Manhattan, KS
- *Friday, 16 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall A (South, Level 3)*

[GC55G-0302Abrupt Flash Drought: Investigating Flash Drought Occurrence over Vital Agricultural Regions](#)
Benjamin Fellman, University of Oklahoma, Norman, OK, Mari R Tye, National Center for Atmospheric Research, Boulder, CO, Jordan I Christian, University of Oklahoma, School of Meteorology, Norman, OK, and Jeffrey B Basara, University of Oklahoma, School of Meteorology; School of Civil Engineering and Environmental Science, Norman, OK
- *Friday, 16 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall A (South, Level 3)*

[GC55G-0304Comparison of Inter-Seasonal Land Surface-Atmospheric Drivers of Flash Drought Over Europe.](#)
Daniel Mesheske, University of Oklahoma Norman Campus, Civil Engineering and Environmental Science, Norman, OK, Jordan I Christian, University of Oklahoma, School of Meteorology, Norman, OK, and Jeffrey B Basara, University of Oklahoma, School of Meteorology; School of Civil Engineering and Environmental Science, Norman, OK
- *Friday, 16 December 2022*
- *14:45 - 18:15*
- *McCormick Place - Poster Hall, Hall - A (South, Level 3)*

[A55F-04](url)Role of Tropopause Polar Vortices in Modulating Arctic Cyclone Climatology

Rupsa Bhowmick[1], Darin Scott Comeau[1], John J Cassano[2], Elizabeth Cassano[3], Steven M Cavallo[4] and Wilbert Weijer[1], (1)Los Alamos National Laboratory, Los Alamos, NM, (2)Univ Colorado, Boulder, CO, (3)Cooperative Institute for Research in Environmental Sciences, Boulder, CO, (4)University of Oklahoma Norman Campus, Norman, OK

- *Friday, 16 December 2022*
- *15:15 - 15:25*
- *McCormick Place - E450a (Lakeside, Level 4)*

[GC55A-06](url)Soil Moisture Roles and PBL Development During Flash Drought

Jeffrey B Basara, University of Oklahoma Norman Campus, Norman, OK; University of Oklahoma, School of Meteorology; School of Civil Engineering and Environmental Science, Norman, OK, Ryann Wakefield, Verisk, Boston, MA, Joseph A Santanello Jr, Hydrological Sciences Laboratory, NASA/GSFC, Greenbelt, MD, Jordan I Christian, University of Oklahoma, School of Meteorology, Norman, OK, Patricia Lawston Parker, NASA GSFC, Hydrological Science Laboratory, Greenbelt, MD, and Jinwoong Yoo, University of Maryland College Park, College Park, MD

- *Friday, 16 December 2022*
- *15:42 - 15:53*
- *McCormick Place - S502ab (South, Level 4)*

[B55B-08](url)Satellite constrained spatial distribution of dominant climatic drivers of the tropical carbon inter-annual variations

Shuang Ma[1], A. Anthony Bloom[1], Alexander Norton[1], Paul Alexander Levine[1], Russell Doughty[2], Renato Kerches Braghiere[1]and Junjie Liu[1], (1)Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, (2)University of Oklahoma, GeoCarb Mission and the College of Atmospheric and Geographic Sciences, Norman, OK

- *Friday, 16 December 2022*
- *15:55 - 16:05*
- *McCormick Place - S501a (South, Level 5)*

[A56A-01](url)Synergistic Lidar and Polarimeter Aerosol Retrieval Performance Under Complex Conditions: Exploring the Costs of Imperfect Particle Shape Assumptions (Invited talk)

Reed Espinosa[1], Anin Puthukkudy[2], Greema Regmi[3], Nirandi Jayasinghe[4], Osku Kemppinen[5], Oleg Dubovik[6], Feng Xu[7], Anton Lopatin[8] and Pavel Lytvynov[8], (1)NASA Goddard Space Flight Center, Greenbelt, MD, (2)University of Maryland Baltimore County, Department of Physics, Earth and Space Institute, GESTAR-II, Baltimore, MD, (3)University of Maryland Baltimore County, Baltimore, MD, (4)University of Maryland Baltimore County, Physics Department, Baltimore, MD, (5)NASA Goddard Space Flight Center, Greenbelt, MD, (6)Laboratoire d'Optique Atmosphérique, CNRS/University of Lille, Lille, France, (7)University of Oklahoma, School of Meteorology, Norman, OK, (8)GRASP SAS, Remote Sensing Developments, Lille, France

- *Friday, 16 December 2022*
- *16:45 - 17:00*
- *McCormick Place - E271ab (Lakeside, Level 2)*

[GC56C](url) - Global Changing Environment and Human Well-being: Impact, Policy, and Scientific Challenges III Oral

Mengye Chen, University of Oklahoma Norman Campus, School of Civil Engineering and Environmental Science (CEES), Norman, OK, Ghassem Asrar, Universities Space Research Association, Columbia, WDC, Yuyu Zhou, Iowa State University, Dept. of Geological & Atmospheric Sciences, Ames, IA, Min Chen, Pacific Northwest National Laboratory, Joint Global Change Research Institute, Richland, WA, Jiaqi Zhang, University of Texas at Arlington, Civil Engineering, Arlington, TX, Mani Rouhi Rad, Texas A&M University College Station, Department of Agricultural Economics, College Station, TX and Shang Gao, University of Oklahoma, School of Civil Engineering and Environmental Science, Norman, OK

- *Friday, 16 December 2022*
- *16:45 - 18:15*
- *McCormick Place - S503ab (South, Level 5)*

A56A - Advances of Atmospheric Remote Sensing Inversion IV Oral Session
Oleg Dubovik, University of Lille 1, Villeneuve d'Ascq, France and Feng Xu, University of Oklahoma, School of Meteorology, Norman, OK
- *Friday, 16 December 2022*
- *16:45 - 18:15*
- *McCormick Place - E271ab (Lakeside, Level 2)*

H56B-02 Divergent Floodplain Urbanization Patterns and Risks with Levee Effect
Meng Ding[1], Peirong Lin[2], Shang Gao[3], Jida Wang[1], Zhenzhong Zeng[4], Xiaogang He[5], Xudong Zhou[6], Dai Yamazaki[6], Kaihao Zheng[2], Yu Liu[2] and Yige Gao[7], (1)Kansas State University, Geography and Geospatial Sciences, Manhattan, KS, (2)Peking University, Institute of Remote Sensing and GIS, School of Earth and Space Sciences, Beijing, China, (3)University of Oklahoma, School of Civil Engineering and Environmental Science, Norman, OK, (4)Southern University of Science and Technology, Shenzhen, China, (5)National University of Singapore, Civil and Environmental Engineering, Singapore, Singapore, (6)The University of Tokyo, Institute of Industrial Science, Tokyo, Japan, (7)Gwinnett County Department of Water Resources, Atlanta, GA
- *Friday, 16 December 2022*
- *16:55 - 17:05*
- *McCormick Place - E451a (Lakeside, Level 4)*

A56A-02 Solving Forward and Inverse Problems for Hyperspectral Satellite Remote Sensors using Principal Component Analysis
Xu Liu[1], Wan Wu[1], Qiguang Yang[2], Xiaozhen Xiong[3], Ming Zhao[4], Daniel K Zhou[1], Allen M Larar[5], Robert J D Spurr[6], Ping Yang[7], Liqiao Lei[8], Hyun-Sung Jang[9], Yolanda Shea[10], Snorre Stamnes[1], David R Thompson[11], Xiong Liu[12], Lihang Zhou[13], Qing Yue[11] and Feng Xu[14], (1)NASA Langley Research Center, Hampton, VA, (2)SSAI Inc, NASA Langley Research Center, Hampton, VA, (3)NOAA Science Center, National Environmental Satellite, Data, and Information Service, NOAA, Clarksville, MD, (4)SSAI, Inc., Hampton, VA, (5)NASA Langley Research Center, Hampton, VA, (6)Rt Solutions Inc., Cambridge, MA, (7)Texas A&M Univ, College Station, TX, (8)Science Systems and Applications, Inc., Hampton, VA, (9)NASA npp postdoc, Hampton, VA, (10)NASA, Hampton, VA, (11)Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, (12)Center for Astrophysics | Harvard & Smithsonian, Cambridge, MA, (13)NOAA College Park, College Park, MD, (14)University of Oklahoma, School of Meteorology, Norman, OK
- *Friday, 16 December 2022*
- *17:00 - 17:10*
- *McCormick Place - E271ab (Lakeside, Level 2)*

MR56A-08 - Diffusivity based screening approach for seal integrity for underground gas storage.
Sidi Mamoudou[1], Judah Odiachi[1], Ali Tinni[1], Son Thai Dang[2], Carl H Sondergeld[2] and Chandra S Rai[2], (1)University of Oklahoma, Norman, OK, (2)University of Oklahoma Norman Campus, Norman, OK,
- *Friday, 16 December 2022*
- *17:57 - 18:07*
- *McCormick Place - S104b (South, Level 1)*