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-04Investigating 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-08Invasive 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-02A 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-01Evaluating 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-1307Dependence 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-1413Development 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-1417Spatiotemporal 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)*