Curriculum Vitae

Yafang Guo
Postdoctoral Researcher
Cornell University, Dept. of Earth and Atmospheric Sciences
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Education

2013 - 2017 Embry-Riddle Aeronautical University, Daytona Beach, FL
Major: Engineering Physics/ Atmospheric Sciences, Ph.D.
Advisor: Alan Liu, Ph.D.

2007 - 2011 Wuhan University, Wuhan, China
Major: Electrical Engineering, B.S.

Employment

Aug 2019 – present **Postdoctoral Researcher**
Supervisor: Dr. Sara C. Pryor
Department of Earth and Atmospheric Sciences
Cornell University

Aug 2018 – Aug 2019 **Postdoctoral Researcher**
Supervisor: Dr. Gretchen L. Mullendore
Department of Atmospheric Sciences
University of North Dakota

Aug 2017 - Jan 2018 **Postdoctoral Researcher**
Supervisor: Dr. Alan Z. Liu
Center for Space and Atmospheric Research,
Department of Physical Sciences
Embry-Riddle Aeronautical University

Research Experience

Postdoctoral Researcher Department of Earth and Atmospheric Sciences,

Aug 2019– Present Cornell University, Ithaca, NY, USA

- Performed high resolution WRF-Chem simulations coupled with aerosol processes on High Performance Computing (HPC) resources from BigRed II/III.
- Statistical analysis of extreme aerosol events (aerosol optical depth, PM2.5) in terms of occurrence, intensity, spatical-temporal variability using WRF-Chem simulations, MERRA-2 reanalysis, MODIS satellite products, and ground-based aerosol observations (AERONET, EPA).
- Evaluation the skills of WRF-Chem in simulating aerosol extreme events and model sensitivities.

Postdoctoral Researcher Department of Atmospheric Sciences,

Aug 2018 – Aug 2019 University of North Dakota, Grand Forks, ND, USA

- Quantifying deep convective mass transport (multiple tracers, such as CO, O3, water vapor) into the upper troposphere and lower stratosphere (UTLS) using aircraft measurements from the Mid-latitude Airborne Cirrus Properties Experiment (MACPEX) campaign with data from NEXRAD, ECWMF-ERA.
- Using various data from several field campaigns focused on convection and representing varied environments (e.g., CACTI, MC3E, TWP-ICE), combined with WRF simulation, to assess the applicability of basic plume theory, and convective parameterization schemes, to deep convective storms of many types.

Publications Related

Guo, Y., Crippa, P., Thota, A., Pryor, S.C. (2020), Simulations and Characteristics of Extreme Aerosol Events over Eastern North America, J. Geophys. Res. Atmos., in prep.

Guo, Y., Mullendore, G.L., Christensen, L.E. (2019), Deep convective transport of CO into the upper troposphere and lower stratosphere observed during the MACPEX field campaign, Atmos. Chem. Phys., final review.

Gardner C.S., **Guo, Y**., Liu, A. Z (2019), Parameterizing wave-driven vertical constituent Transport in the atmosphere, Earth and Space Sciences.doi: 10.1029/2019EA000625.

Guo, Y., Liu, A. Z., Gardner C. S. (2017), First Na lidar measurements of turbulence heat flux, thermal diffusivity and energy dissipation rate in the mesopause, Geophys. Res. Lett. doi:10.1002/2017GL073807.

Liu, A. Z., **Guo, Y**., Vargas, F., Swenson, G.R. (2016), First measurement of horizontal wind and temperature in the lower thermosphere (105-140 km) with a Na Lidar at Andes Lidar Observatory, Geophys. Res. Lett. 43, doi:10.1002/2016GL068461.

Liu, A. Z., **Guo, Y**., (2016), Photomultiplier tube calibration based on Na lidar observation and its effect on heat flux bias, Appl. Opt., 55, 9467-9475, doi:10.1364/AO.55.009467.

Professional Development

- **NSF Cyber Carpentry: Data Life-Cycle Training (July 2019)**

  University of North Carolina at Chapel Hill, North Carolina, USA

- **NSF Incoherent Scatter Radar Workshop (July 2016)**

  Sodankyla Geophysical Observatory, Sodankyla, Finland

- **ASP Colloquium - Climate, Space Climate and Couplings Between (July 2015)**

  National Center for Atmospheric Research, Boulder, CO, USA