

# DR. AOXING ZHANG

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## SUMMARY

Excellent atmospheric modeler with 5 years' experience in developing atmospheric aerosol modules in global climate model, analyzing large database and training big data with neural network. Extremely keen intuition on the potential of raw data with strong ability to conduct independent research on data analysis and model building.

## SKILLS

### Science

- Atmospheric chemistry and aerosols
- Wildfire dynamics, emission, aging and transport
- Regional air quality
- Air-sea exchange; Atmosphere-ocean-land interaction
- Climate variability and feedbacks
- Atmospheric chemistry-weather interaction
- Atmospheric circulation and long-term transport
- Satellite data quality

### Technology

- 3-D global climate models (e.g. CESM): module building, simulation, data analysis
- Satellite data retrieval
- Inverse modeling & top-down emission estimation
- Scientific programming and distributive systems management
- Machine learning & Neural network
- 1-D radiative transfer model

## RESEARCH EXPERIENCE

*Georgia Institute of Technology, Atlanta, GA, USA*

**Research Assistant (work with Dr. Yuhang Wang)**

**Aug. 2015-**

- Build a brown carbon module in Community Atmosphere Model 5.0 (CAM5) in the Community Earth System Model (CESM) and estimate the global radiative effect from the light absorption of brown carbon.
- Data analysis and the global model constrain to the brown carbon measurements in the Atmospheric Tomography Mission (ATom).
- Estimate a missing marine glyoxal source based on satellite observations and use CESM to simulate the impact of marine glyoxal to the marine boundary layer.
- Improve the understanding of fire-weather interaction from fire aerosol feedback by conducting a fire module in CESM considering fire-land-atmosphere coupling.

*National Center for Atmospheric Research, Boulder, CO, USA*

**Visiting Researcher**

**Aug. 2019**

- Estimation of global radiative effect of brown carbon constrained with Atmospheric Tomography Mission (ATom) Observations
- Participate in discussion of building brown carbon module into CESM2 CAM-Chem

## REPRESENTATIVE PUBLICATIONS

A. Zhang, Y. Wang, Y. Zhang, R. J. Weber, Y. Song, Z. Ke and Y. Zou. Modeling global radiative effect of brown carbon: A potentially larger heating source in the tropical free troposphere than black carbon. *Atmospheric Chemistry and Physics*, <https://doi.org/10.5194/acp-20-1901-2020>, 2020.

## EDUCATION

*Georgia Institute of Technology, Atlanta, GA, USA*

**Ph.D. in Earth and Atmospheric Sciences (Advisor: Dr. Yuhang Wang)**

**2020**

*Peking University, Beijing, China*

**B.S. in Atmospheric and Oceanic Sciences**

**2015**