

Zhongjing Jiang (姜中景)

Research Scientist at Institute for Sustainability, Energy, and Environment, University of Illinois Urbana-Champaign (UIUC); Center for Advanced Bioenergy and Bioproducts Innovation (CABBI)
1101 West Peabody Drive, Urbana, IL, 61801,

E-mail: zjiang35@illinois.edu (Updated on 1 Jan. 2025)

RESEARCH INTERESTS

Earth system modeling, Uncertainty Quantification, Bioenergy, Chemistry-climate interaction, Climate change

RESEARCH EXPERIENCE

- 2024.08-** **Research Scientist, University of Illinois Urbana-Champaign** PI: Prof. [Kaiyu Guan](#)
- 2022.09-2024.08** **Research Associate, Brookhaven National Laboratory** supervisor: [Chongai Kuang](#)
- Project: Advancing FASSt-Simulation: A Novel Computational Framework for Optimal Experimental Design to Improve Climate Prediction
- 2018.09-2022.08** **Graduate Research Assistant, Peking University** Advisor: Prof. [Jing Li](#) (李婧)
- Project 1: Impact of Western Pacific Subtropical High on Ozone Pollution in China
 - Project 2: Impact of Eastern Pacific and Central Pacific El Niño on Lower Troposphere Ozone in China
 - Project 3: Impact of Indian Ocean Dipole on tropospheric ozone in China
- 2017.09-2020.03** **Graduate Research Assistant, Peking University** Advisor: Prof. [Tzung-May Fu](#) (傅宗玫)
- Project: Spatiotemporal and probability variations of surface PM_{2.5} over China between 2013 and 2019 and the associated changes in health risks: An integrative observation and model analysis
- 2018.08-2018.09** **Visiting PH. D. Student, University of Edinburgh** Advisor: Prof. [Paul Palmer](#)

EDUCATION

- 2017/09-2022/06** **Ph.D. in Atmospheric Physics and Atmospheric Environment**
Department of Atmospheric and Oceanic Sciences, School of Physics, Peking University
Advisors: Prof. Jing Li, Prof. Tzung-May Fu
Thesis title: Impact of natural climate variability at different timescales on tropospheric ozone in China
- 2017/07-2017/08** **Student in Summer Institute for China's Green Innovators, Tsinghua University**
- 2013/09-2017/06** **B.S. in Mathematics and Applied Mathematics**
School of Mathematical Science, Beijing Normal University

HONORS & AWARDS

- 2023** **Second Place in 2023 BNL Research SLAM Competition**
- 2022** **Outstanding Graduates of Peking University**
- 2021** Merit Student of Peking University, Tung Scholarship
- 2021** **Outstanding Student Presentation Awards (OSPA)** in the Fall 2020 AGU meeting
- 2020** Pacemaker to Merit Student of Peking University, Doctoral President Scholarship of Peking University
- 2020** **Second prize** for 2020WAIC Hackathon
- 2019** Merit Student of Peking University, Founder Scholarship
- 2019** **Third prize** for “Shenqi” challenge algorithm and application competition
- 2018** **Second prize** “Huawei Cup” The 15th China Post-Graduate Mathematical Contest in Modeling

PUBLICATIONS

In preparation:

Jiang, Z., Isenberg, N., Subba, T., Urban, N., Serbin, S., Kuang, C., Woo, H.: A Novel Computational Framework for Optimal Experimental Design to Improve Climate Prediction.

Preprint:

Zhu, F., Torbunov, D., Ren, Y., **Jiang, Z.**, Zhao, T., Yogarathnam, A., and Yue, M.: Mitigating Parameter Degeneracy using Joint Conditional Diffusion Model for WECC Composite Load Model in Power Systems, 2024.

Peer-reviewed publications:

Jiang, Z., Li, J., Liu, G., and Zhang, C.: Impact of the Indian Ocean Dipole Mode on Planetary Boundary Layer Ozone in China, *Geophys Res Lett*, 51, <https://doi.org/10.1029/2024GL110108>, 2024.

Ye, X., Zhang, L., Wang, X., Lu, X., **Jiang, Z.**, Lu, N., Li, D., and Xu, J.: Spatial and temporal variations of surface background ozone in China analyzed with the grid-stretching capability of GEOS-Chem High Performance, *Science of the Total Environment*, 914, <https://doi.org/10.1016/j.scitotenv.2024.169909>, 2024.

Ying, T., Li, J., **Jiang, Z.**, Liu, G., Zhang, Z., Zhang, L., Dong, Y., and Zhao, C.: Increased aerosol scattering contributes to the recent monsoon rainfall decrease over the Gangetic Plain, *Sci. Bull.*, <https://doi.org/10.1016/j.scib.2023.08.052>, 2023.

Dong, Y., Li, J., Yan, X., Li, C., **Jiang, Z.**, Xiong, C., Chang, L., Zhang, L., Ying, T., and Zhang, Z.: Retrieval of aerosol single scattering albedo using joint satellite and surface visibility measurements, *Remote Sens. Environ.*, 294, <https://doi.org/10.1016/j.rse.2023.113654>, 2023.

Zhang, C., **Jiang, Z.**, Liu, M., Dong, Y., and Li, J.: Relationship between summer time near-surface ozone concentration and planetary boundary layer height in Beijing, *Atmos. Res.*, 293, 106892, <https://doi.org/10.1016/j.atmosres.2023.106892>, 2023.

Liu, G., Li, J., **Jiang, Z.**, and Li, X.: Impact of Sea Surface Temperature Variability at Different Ocean Basins on Dust Activities in the Gobi Desert and North China, *Geophys. Res. Lett.*, 49, <https://doi.org/10.1029/2022GL099821>, 2022.

Zhang, L., Li, J., **Jiang, Z.**, Dong, Y., Ying, T. and Zhang, Z.: Clear-Sky Direct Aerosol Radiative Forcing Uncertainty Associated with Aerosol Optical Properties Based on CMIP6 models, *J. Clim.*, 35(10), 3007–3019, <https://doi.org/10.1175/jcli-d-21-0479.1>, 2022a.

Zhang, L., Li, J., **Jiang, Z.**, Dong, Y., Ying, T. and Zhang, Z.: Clear-Sky Direct Aerosol Radiative Forcing Uncertainty Associated with Aerosol Vertical Distribution Based on CMIP6 models, *J. Clim.*, 35(10), 3021–3035, <https://doi.org/10.1175/jcli-d-21-0480.1>, 2022b.

Jiang, Z. and Li, J.: Impact of eastern and central Pacific El Niño on lower tropospheric ozone in China, *Atmos. Chem. Phys.*, 22, 7273–7285, <https://doi.org/10.5194/acp-22-7273-2022>, 2022.

Jiang, Z., Li, J., Lu, X., Gong, C., Zhang, L., and Liao, H.: Impact of western Pacific subtropical high on ozone pollution over eastern China, *Atmos. Chem. Phys.*, 21, 2601–2613, <https://doi.org/10.5194/acp-21-2601-2021>, 2021.

Jiang, Z., Jolleys, M. D., Fu, T.-M., Palmer, P. I., Ma, Y., Tian, H., Li, J., and Yang, X.: Spatiotemporal and probability variations of surface PM_{2.5} over China between 2013 and 2019 and the associated changes in health risks: An integrative observation and model analysis, *Sci. Total Environ.*, 723, 137896, <https://doi.org/10.1016/j.scitotenv.2020.137896>, 2020.

Dong, Y., Li, J., Guo, J., **Jiang, Z.**, Chu, Y., Chang, L., Yang, Y., and Liao, H.: The impact of synoptic patterns on summertime ozone pollution in the North China Plain, *Sci. Total Environ.*, 735, 139559, <https://doi.org/10.1016/j.scitotenv.2020.139559>, 2020.

Xu, X., **Jiang, Z.**, Li, J., Chu, Y., Tan, W., and Li, C.: Impacts of meteorology and emission control on the abnormally low particulate matter concentration observed during the winter of 2017, *Atmos. Environ.*, 225, 117377, <https://doi.org/10.1016/j.atmosenv.2020.117377>, 2020.

CONFERENCE & PRESENTATIONS

- 2024/10 Micro2Macro Workshop, University of Wyoming, Laramie, WY**
Oral: A Novel Computational Framework for Optimal Experimental Design to for Climate Prediction
- 2023/12 American Geosciences Union 2023 (AGU), San Francisco, US**
Poster: A Novel Computational Framework for Optimal Experimental Design to for Climate Prediction
- 2023/07 Gordon Research Seminar & Conference (GRC), Radiation and Climate, Maine, US**
Poster: A Novel Computational Framework for Optimal Experimental Design to for Climate Prediction
- 2022/07 The 19th Annual Meeting Asia Oceania Geosciences Society (AOGS), Online**
Oral: Impact of Eastern and Central Pacific El Niño on Lower Tropospheric Ozone in China
- 2021/12 American Geosciences Union 2021 (AGU), Online**
Poster: Impact of East and Central Pacific El Niño on Lower Tropospheric Ozone in China
eLightning: Impact of Western Pacific Subtropical High on Ozone Pollution in China (Invited)
eLightning: Response of surface ozone concentration in China under different anthropogenic emission scenarios in future climate (Invited)
- 2020/12 American Geosciences Union 2020 (AGU), Online**
Poster: Impact of Western Pacific Subtropical High on Ozone Pollution in China (OSPA)
- 2020/11 Graduate Forum of Global Alliance of Universities on Climate, Beijing, China**
Poster: Spatiotemporal and probability variations of surface PM_{2.5} over China between 2013 and 2019 and the associated changes in health risks: An integrative observation and model analysis
- 2020/09 The 1st GEOS-Chem Europe meeting (GCE1), online**
Oral: Spatiotemporal and probability variations of surface PM_{2.5} over China between 2013 and 2019 and the associated changes in health risks: An integrative observation and model analysis
- 2019/12 Symposium on atmospheric science of universities across the Taiwan Strait (Zhu Kezhen Forum), Taipei, Taiwan, China**
Oral: Impact of Western Pacific Subtropical High on Ozone Pollution in China
- 2019/06 The 16th Annual Meeting Asia Oceania Geosciences Society (AOGS), Singapore**
Oral: Impact of Meteorology and Western Pacific Subtropical High on Ozone Pollution in China
- 2018/12 American Geosciences Union 2018 (AGU), Washington D.C., US**
Poster: Interpreting the spatial and temporal variation of PM_{2.5} over China during 2013 to 2018: an integrative data and regional 3-D model analysis

TEACHING EXPERIENCE

Teaching assistant *Introduction of Atmospheric Science* (Course for undergraduate students), Department of Atmospheric and Oceanic Sciences, Peking University (2018/09-2019/01)

Teaching assistant *Numerical Weather Prediction* (Course for undergraduate & graduate students), Department of Atmospheric and Oceanic Sciences, Peking University (2021/09-2022/01)

Software training lecturer *MATLAB* (training for undergraduate & graduate students) School of Physics, Peking University (2021/03)

ACTIVITIES & SERVICES

Vice President of the Brookhaven National Laboratory Association of Students & Postdocs (2023/01-2024/08)

Chair of the “Azure Space” Graduate Student Forum of the Department of Atmospheric and Oceanic Sciences, Peking University (2018/09-2020/09)

SKILLS

Technical Skills: Python, Julia, MATLAB, NCL, Fortran

Models: E3SM land model (ELM), CESM, GEOS-Chem, WRF-Chem

Links

Website: <https://zhongjingjiang.github.io>

Google Scholar: https://scholar.google.com/citations?user=73N_824AAAAJ&hl=zh-CN&oi=ao

ResearchGate: <https://www.researchgate.net/profile/Zhongjing-Jiang>