

Updated dates: 11/20/2022

Lixu Jin

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Research interests

Air quality and atmospheric chemistry; Volatile organic compounds (VOCs); VOCs emission and chemistry; Ozone; Aerosol; 3D chemical transport modeling (CTM) from local to global scale; Box modeling; Machine learning; Field observations;

Education

Ph.D. Chemistry, University of Montana (expected 2024)

(Honor) B.S. Meteorology/Atmospheric sciences, Lanzhou University

Programming skills

Programming languages: Python | MATLAB | IDL | R | Fortran 90 | bash | Unix shell | NCL

I was born in Fortran 90, adopted by NCL, fed IDL. I have crush on Python, and write MATLAB for a living. I also occasionally play with R when compelled to use some dinosaur-age packages. Once I have one project done, I commit scripts to git them away of my sights.

Other skills

Science: data visualization | statistical analysis | quantitative reasoning | 3D CTM (GEOS-Chem) | box model (F0AM)

Interpersonal communication: writing | public speaking | teamwork | leadership | project management | version control

Research experiences

University of Montana, Missoula, MT

Teaching and Graduate Research Assistant with Lu Hu: 2019 – presents

- Developed the interface between 3D GEOS-Chem CTM and 0D F0AM box model.
- Led on model simulations (i.e., GEOS-Chem and F0AM with multiple mechanisms) for air quality within wildfire targeted observational constraints.
- Developing wildfire-targeted 3D GEOS-Chem CTM, provided organic carbon emission budgets, assessed air quality and induced human health implications.

University of Washington, Seattle, WA

Visiting student at Dan Jaffe's group 2018

- Developed and designed F0AM to simulate traffic emissions at Boise, ID

Lanzhou University, Lanzhou, China

Undergraduate Research Assistant with Jiankai Zhang/Jiali Luo: 2016-2019

- Designed data analysis experiments and investigated the interaction between tropopause folds and extreme weather in China physically and statistically.

Honors and awards

Fred Shafizadeh Memorial Scholarship, University of Montana 2022

Stewart Scholarship, University of Montana 2019

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Outstanding Graduate Award, Lanzhou University 2019

Excellent Student Scholarship, Lanzhou University 2016, 2018, 2019

Leadership, professional activity and services

Journal reviewer: Atmos. Environ (2021).

President, Chinese student and scholar association, University of Montana, 2021-present

Teaching and leading the lab experiments for CHEM 142 and CHEM 144, University of Montana, 2021 Fall

Participated in formal teaching training (CHMY 501 Teaching University Chemistry, UM)

Contributed to textbook review and proof (Wenyu Zhang, Yuan Tie. Principle and Method of Doppler Weather Radar Detection [M]. China Meteorological Press, 2017)

Student internship in Beijing and Neimeng Meteorological Bureau, China 2016, 2018

Student internship in Future Weather Company, China 2016

Publication

Jin, L., Permar, W., Selimovic, V., Ketcherside, D., Yokelson, R.J., Hornbrook, R.S., Apel, E.C., Ku, I., Collett Jr, J.L., Sullivan, A.P. and Jaffe, D.A., 2022. Constraining emissions of volatile organic compounds from western US wildfires with WE-CAN and FIREX-AQ airborne observations (in review). *EGUsphere*, pp.1-39.

Permar, W., **Jin, L.**, Peng, Q., O'Dell, K., Lill, E., Selimovic, V., Yokelson, R.J., Hornbrook, R.S., Hills, A.J., Apel, E.C. and Ku, I.T., 2022. Atmospheric OH reactivity in the western United States determined from comprehensive gas-phase measurements during WE-CAN. *Environmental Science: Atmospheres*.

Conferences

“Improving Biomass Burning Representation of Volatile Organic Compounds (VOCs) in GEOS-Chem”, AGU Fall Meeting, Dec. 2022 (poster)

“Constraining VOC emission from western US wildfires with WE-CAN and FIREX-AQ airborne observations”, IGC10, Jun. 2022 (talk)

“Constraining volatile organic compound emissions from western US wildfires with WE-CAN airborne observations”, AGU Fall Meeting, Dec. 2020 (poster)