

Postdoctoral Position in Plume-in-Grid Modeling at UChicago

Description:

The Wang Aerosol Lab (PI: Prof. Mingyi Wang) at the University of Chicago invites applications for a postdoctoral scholar to lead innovative research on aerosol dynamics in subgrid plumes, such as aircraft wakes during stratospheric aerosol injection. The project aims to resolve the roles of chemistry, aerosol microphysics, and dynamics in aerosol formation and evolution, using a plume-in-grid (PiG) framework that couples a Lagrangian plume model to chemical transport models (CTMs) or global climate models (GCMs).

The successful candidate will collaborate with multiple research teams, including Prof. Hongwei Sun (University of Hawaii) and Prof. Jeff Pierce (Colorado State University), and work on the following areas:

- Development of the PiG framework, such as coupling Kinetic PreProcessor mechanisms with aerosol microphysical modules in PiG, based on CTMs and GCMs.
- Optimizing turbulence parameterizations to more accurately represent filamentary plume dispersion in the upper troposphere and stratosphere.
- Using PiG to simulate stratospheric aerosol formation from SAI and its natural analogs, evaluating their climatic impacts.
- Exploring other advanced modeling approaches, such as dynamic adaptive mesh refinement, for resolving plume-scale processes.

The initial position is for one year, with the possibility of renewal for one to two additional years, contingent on satisfactory progress and funding availability. While the start date can be flexible, the position is available beginning October 1, 2026. Applications will be reviewed starting September 4, 2026, and the position will remain open until filled. Starting salary is \$64,000 with benefits.

Qualifications:

- Ph.D. in atmospheric science, climate science, or a related field.
- Strong background in atmospheric chemistry and/or aerosol microphysics.
- Experience in model development using chemical transport models or Earth system models preferred.
- Excellent communication and scientific writing skills.

Applications:

To apply, email Prof. Mingyi Wang (mingyiw@uchicago.edu) with the following:

1. Curriculum vitae.
2. Cover letter (maximum 2 pages) describing research interests, plans, and qualifications.
3. Names and contact information of three references.

Please use the subject line "Postdoc Position in Plume-in-Grid Modeling".

Equal Employment Opportunity Statement:

All University departments and institutes are charged with building a faculty from a diversity of backgrounds and with diverse viewpoints; with cultivating an inclusive community that values freedom of expression; and with welcoming and supporting all their members.

We seek a diverse pool of applicants who wish to join an academic community that places the highest value on rigorous inquiry and encourages diverse perspectives, experiences, groups of individuals, and ideas to inform and stimulate intellectual challenge, engagement, and exchange. The University's Statements on Diversity are at <https://provost.uchicago.edu/statements-diversity>.

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Job seekers in need of a reasonable accommodation to complete the application process should call 773-834-3988 or email equalopportunity@uchicago.edu with their request.