

Postdoc in Convection, Rainstorms, and Climate at Stanford

The Department of Geophysics at Stanford University invites applications for a postdoctoral scholar to join the [Convection & Climate Group](#). Our research seeks to uncover the physical principles governing the organization of moist convection and atmospheric circulations across scales, including convective aggregation, tropical cyclones, the Madden–Julian Oscillation, and atmospheric rivers. We combine theory, observations, a hierarchy of numerical models, and machine-learning methods to understand their formation, dynamics, and predictability. The successful candidate will have substantial freedom to develop an independent research direction connected to one or more of the following themes:

1. Convective organizations across scales:

- What physical processes lead to convective organizations across scales?
- What is the minimum recipe to simulate convective self-aggregation, tropical cyclones, and the Madden-Julian Oscillation?
- What is the source of predictability for the Madden-Julian Oscillation?

2. The buoyancy effect of water vapor:

- How does vapor buoyancy affect the momentum balance and large-scale circulations in Earth's and other planetary atmospheres?
- How does vapor buoyancy regulate clouds and Earth's energy balance?
- Can vapor buoyancy delay the runaway greenhouse effect and help stabilize climate, in the context of paleoclimate and planetary atmospheres?

3. Atmospheric rivers:

- What environmental factors control the occurrence frequency of atmospheric rivers?
- What is the predictability source for atmospheric rivers at the sub-seasonal timescale?

The successful candidate will work closely with Professor Da Yang and will also have opportunities to collaborate with colleagues at Stanford, NCAR, PNNL, and beyond. Research support is provided by NSF, DOE, private foundations, and Stanford University. The initial appointment is for one year, with the possibility of renewal for up to two additional years, subject to satisfactory progress and funding availability. **The start date is flexible, from as early as October 1, 2026 to as late as fall 2027.**

The expected pay for this position is the Stanford University required minimum for all postdoctoral scholars appointed through the Office of Postdoctoral Affairs. The pay offered to the selected candidate will be determined based on factors including (but not limited to) the qualifications of the selected candidate, budget availability, and internal equity. The FY27 minimum is \$79,056.

Exceptionally strong candidates will also be encouraged and supported in applying for competitive postdoctoral fellowships at Stanford, including:

- Thompson Postdoctoral Fellowship: <https://geophysics.stanford.edu/thompson-postdoctoral-fellowship>
- Stanford Science Fellowship: <https://stanfordsciencefellows.stanford.edu/apply>
- Stanford Energy Postdoctoral Fellowship: <https://energypostdoc.stanford.edu/>
- Data Science Fellowship: <https://datascience.stanford.edu/programs/data-science-fellows>

Responsibilities:

- Develop testable hypotheses to advance our understanding of atmospheric convection, dynamics, and/or climate change.
- Conduct numerical simulations and analyze observations to test the hypotheses.
- Present research findings at conferences and seminars.
- Publish results in high-quality, peer-reviewed journals.

Minimum qualifications:

- Completed a doctoral degree in atmospheric science, climate science, fluid dynamics, or a related field at the time of appointment. However, we will seriously consider any outstanding candidates from other fields with rigorous training in mathematics and physics if they are strongly motivated to study the atmosphere and climate.
- Demonstrated ability to address significant scientific questions using the scientific method.
- Demonstrated excellence in written and verbal communication skills.

Preferred qualifications:

- Strong background in at least one of the following areas: atmospheric convection, radiative transfer, climate change, atmospheric/fluid dynamics, or machine learning.
- Proficiency in numerical analysis and high-performance computing.
- Experience with atmosphere/climate models of various complexities.
- Capacity to analyze large datasets such as output from high-resolution models or observations.
- Strong planning and organizational skills, with the capacity to effectively prioritize multiple tasks, set clear deadlines, and consistently meet them.

Applications/How to apply:

To submit your application, please complete the following form: <https://tinyurl.com/4fu7jy7m>.

Note that the following materials will be required: (1) a cover letter, (2) a curriculum vitae, and (3) the names and contact information of three references. We will begin reviewing applications on **September 15, 2026**, and the position will remain open until filled.

If you have any questions regarding this position, please reach out to Prof. Da Yang at dayang@stanford.edu.

Stanford is an equal employment opportunity and affirmative action employer, and consistent with its obligations under the law prohibits unlawful discrimination on the basis of any characteristic protected by applicable law.