



Two Postdoctoral Scholar Positions Atmospheric Modeling at Cloud-Resolving Scales & Atmosphere-Ocean-Land Coupling

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<http://climate.ucdavis.edu>

The climate and global change group at the University of California, Davis is seeking creative and motivated applicants for **two** postdoctoral scholar positions in Earth-system model development and analysis. The start date is negotiable, with both positions anticipated to be filled as early as possible. Funding is available for at least one year, with later funding contingent on performance. Salary is commensurate with qualifications and experience.

The successful candidates will work closely with Dr. Paul Ullrich to advance the US Department of Energy's Energy Exascale Earth System Model (E3SM), a cutting-edge Earth-system model that leverages investments in leadership class supercomputing at the DOE. The successful candidates are expected to have the following minimum qualifications:

- completed a doctoral degree in atmospheric science, oceanography, applied mathematics, computer science, physics, or a related field at the time of the appointment;
- demonstrated technical experience working in a high-performance computing environment, running climate modeling systems, and analyzing climate datasets with Python, C++, or R;
- demonstrated written and verbal communication skills.

Atmospheric Modeling at Cloud-Resolving Scales: The successful applicant for this position will be responsible for evaluating the newly developed E3SM non-hydrostatic dynamical core at extremely high horizontal grid spacing (~3km). Outstanding questions to be investigated include: What processes and features require a non-hydrostatic model to be properly captured and at what resolutions? If applied selectively, where does high horizontal resolution provide the most benefit to the simulated meteorology? And what insights can numerical weather prediction provide on the behavior and accuracy of the model at cloud resolving scales? Given the many open questions related to modeling at cloud-resolving scales, new questions may be pursued as time allows.

Atmosphere-Ocean-Land Coupling: The successful applicant for this position will be responsible for analyzing the performance of the atmosphere-land-ocean coupler in E3SM, including issues related to energy/mass conservation and accuracy in the regridder. Key questions include: Can high-order accuracy in the coupler improve the performance of the climate model? Can curl or divergence preservation in the coupler improve biases related to atmosphere-ocean forcing? And how is the stability of the model impacted by the choice of coupling strategy?

Application materials include (1) a cover letter, (2) a curriculum vitae, (3) and the names of three references. Please submit the complete application as a single PDF to Prof. Paul Ullrich at paulullrich@ucdavis.edu with the subject line "Application for postdoctoral research position in XXX", where XXX is one of the position titles above. Review of applications will start on **January 21, 2020**, and the position will remain open until filled. The start date is expected to be in **Early Spring 2020**.

Term of Appointment: The position is 100% for 1 year initially, *reappointment contingent upon satisfactory progress and availability of future funding*.

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