

Data Assimilation Postdoctoral Position

Center for Western Weather and Water Extremes (CW3E)

Scripps Institution of Oceanography, University of California San Diego

Job Location: La Jolla, California

To apply: Send CV, cover letter, and three references to Dr. Minghua Zheng (mzheng@ucsd.edu) and Dr. Luca Delle Monache (ldellemonache@ucsd.edu).

Open date: Aug 28, 2025

Most recent review date: Friday, Sep 19, 2025 at 11:59 pm (Pacific Time)

Applications received after this date will be reviewed by the search committee if the position has not been filled.

Final date: Friday, Oct 3, 2025 at 11:59 pm (Pacific Time)

Applications will continue to be accepted until this date, but those received after the review date will only be considered if the position has not yet been filled.

About Us: The Center for Western Weather and Water Extremes (CW3E; <https://cw3e.ucsd.edu/>) is a research and applications center established in 2014 at the Scripps Institution of Oceanography by its Director, Dr. F. Martin Ralph. CW3E focuses on the physical understanding, observations, and predictions of extreme weather and water events to support effective policies and practices to improve resilience in the Western U.S. CW3E carries out its goals with a diverse network of research and operational partners at several other institutions across the U.S. and internationally. A key activity of the CW3E will be to develop methods and systems to aid future reservoir operations for flood control, water supply, and ecosystems. The new hire will join a collaborative group of postdoctoral scholars and experienced researchers, faculty, and staff at CW3E and Scripps.

Salary Range: A reasonable salary range estimate for this position is \$70,000-75,000/yr based on level of experience. The posted UC academic salary scales set the minimum pay determined by level at time of appointment. See the following table for the salary scale for this position:

https://www.ucop.edu/academic-personnel-programs/_files/2024-25/oct-2024-scales/t23.pdf.

Position Details: CW3E seeks a postdoctoral researcher to help develop the data assimilation system for the Model for Prediction Across Scales (MPAS) leveraging the Joint Effort for Data Assimilation Integration (JEDI) framework. We specifically aim to use this system to evaluate the impact of Atmospheric River Reconnaissance data across various temporal scales, including short-range, medium-range, and extended-range assessments. Furthermore, the development of MPAS-JEDI

tailored to northeast Pacific extreme events will allow us to better understand the dynamics and predictability of landfalling atmospheric rivers and their cascading impacts.

The successful candidate will work with the team to implement the MPAS-JEDI system on HPCs and apply the system to atmospheric river case studies. The candidate will work closely with the team to understand how field observations such as dropsondes and ocean drifters improve initial conditions over the North Pacific Ocean and subsequent forecasts of landfalling atmospheric rivers and other high-impact events in multiple downstream regions. Understanding the potential observation impact in Week-2 is a key focus of the work being carried out at CW3E as well as the collaborative effort between CW3E/Scripps and several operational centers.

Applicants should be self-motivated and hold a Ph.D. degree (by the hiring date) in Atmospheric Science, Physical Oceanography, Climate Science, or a related discipline. Familiarity with data assimilation systems (e.g., JEDI, GSI, WRFDA, or DART) and numerical models (e.g., MPAS, WRF, GFS) is highly desirable. A strong interest in learning data assimilation, combined with a solid background in atmospheric science, will also be considered. Proficiency in programming languages such as Fortran and C/C++, as well as scripting languages like Python, Matlab, or R, is required, along with experience working on high-performance computing (HPC) platforms. Strong written and verbal communication skills are preferred, including the ability to produce scientific publications and presentations and to meet project milestones. Applicants should be comfortable working independently with large code libraries and datasets, incorporating atmospheric observations, developing visualizations, and collaborating effectively within a team environment.

Per normal postdoctoral appointment policies, all positions are envisioned as being initially for 2 years, with extension possible contingent upon performance and availability of funding.

About UC San Diego: The University of California is an Equal Opportunity Employer. All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, disability, age, protected veteran status, or other protected status under state or federal law.

University employees are required to comply with all applicable University policies and/or collective bargaining agreements, as may be amended from time to time. Federal, state, or local government directives may impose additional requirements.

The University of California prohibits smoking and tobacco use at all of its university-controlled properties.

The UC San Diego Annual Security & Fire Safety Report is available online at:

<https://www.police.ucsd.edu/docs/annualclery.pdf>. This report provides crime and fire statistics, as well as institutional policy statements & procedures. Contact the UC San Diego Police Department at (858) 534-4361 if you want to obtain paper copies of this report.

As a condition of employment, the finalist will be required to disclose if they are subject to any final administrative or judicial decisions within the last seven years determining that they committed any misconduct, are currently being investigated for misconduct, left a position during an investigation for alleged misconduct, or have filed an appeal with a previous employer.

Click for more information on Assembly Bill-810:

https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202320240AB810

Click for more information on Senate Bill-791:

https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202320240SB791

- “Misconduct” means any violation of the policies or laws governing conduct at the applicant’s previous place of employment, including, but not limited to, violations of policies or laws prohibiting sexual harassment, sexual assault, or other forms of harassment, discrimination, dishonesty, or unethical conduct, as defined by the employer.
- UC Sexual Violence and Sexual Harassment Policy: [<https://policy.ucop.edu/doc/4000385/SVSH>]
- UC Anti-Discrimination Policy for Employees, Students and Third Parties:
[<https://policy.ucop.edu/doc/1001004/Anti-Discrimination>]
- APM - 035: Affirmative Action and Nondiscrimination in Employment :
[https://www.ucop.edu/academic-personnel-programs/_files/apm/apm-035.pdf]