

# CEOAS Postdoctoral Scholar: Indian Monsoon Air-Sea Interactions for ASTraL/EKAMSAT

College of Earth, Ocean, and Atmospheric Sciences (CEOAS) at Oregon State University (OSU) seeks a postdoctoral scholar to analyze meteorological and ocean observations as part of the Office of Naval Research (ONR) Air-Sea Transition Layers (ASTraL)/EKAMSAT process study. The goal of ASTraL/EKAMSAT is to improve our understanding of air-sea interaction processes contributing to the Indian monsoon, and thereby to improve predictions of variability in the monsoon. To further this goal, in collaboration with Dr. Simon de Szoeke, the postdoctoral scholar will analyze observations of fluxes, stratification, and turbulence in the Air-Sea Transition Zone (ASTZ) comprising the atmospheric and ocean boundary layers, and will perform and/or analyze regional and cloud-permitting numerical model experiments. The scholar will be expected to publish data sets and analyses, and to write peer reviewed journal articles.

The postdoctoral scholar will work at the Corvallis OSU campus. CEOAS boasts a distinguished faculty comprised of leading experts in atmospheric science, oceanography, and related fields, whose groundbreaking work advances our understanding of air-sea interaction. As a premier institution, CEOAS provides unparalleled resources and opportunities for students and researchers. From field expeditions to numerical modeling, our multidisciplinary approach fosters a comprehensive understanding of the processes shaping the climate system. Diverse research initiatives span from regional to global scales, encompassing a wide range of phenomena such as ocean-atmosphere coupling, coastal processes, and climate variability.

## Position duties

### Research and Scholarship (85%)

Analyze data from models, reanalysis, satellite products, and observed from field experiments to test theories of tropical intraseasonal and monsoon circulations, intertropical convergence zones, atmosphere-ocean interactions, turbulence in the air-sea transition zone, and its interactions with cumulus clouds. Design, run, and analyze modeling experiments to test scientific hypotheses suggested by the observations. Lead and contribute to writing peer reviewed publications to communicate research findings. The postdoctoral scholar will work independently with regular consultation with the PI on the analyses, writing task prioritization, and team research activities. They will analyze and synthesize data sets, leading to publication primarily of peer reviewed journal articles, and secondarily datasets, code libraries, and other works.

### Professional development (15%)

The postdoctoral scholar will establish a record of recognized collaboration and peer-reviewed accomplishment with the goal of advancing to academic and research career positions in internationally recognized institutions. The postdoctoral scholar may further this goal by providing service to committees, working groups, and panels of professional organizations, CEOAS, and OSU; by participating in organizing professional meetings; and/or by reviewing abstracts, articles, and proposals.

## Required Qualifications

PhD in Atmospheric Science or Oceanography and/or related discipline such Physics, Mathematics, or Computer Science.

Record of peer reviewed publications in an established area of expertise related to Earth, Ocean, and Atmospheric Science.

Excellent data analysis skills.

Initiative to expand skills and expertise, and to publish in new areas.

Scientific computer programming and written and spoken English. Experience with software such as Julia, Python, MATLAB or similar.

Demonstrated commitment to promoting diversity, equity, and inclusion.

### **Preferred qualifications**

Experience configuring, running, and analyzing numerical ocean, atmosphere, or fluid dynamics models. Experience with high performance computing.

Familiarity with the ASTraL/EKAMSAT field campaign.

Demonstration of activities enhancing diversity, equity, and inclusion.

Interest in some of the following research areas:

- Theory of tropical intraseasonal and monsoon circulations
- Large eddy simulation or regional general circulation numerical modeling
- Boundary layer and turbulence theory and observations in different cloud and wind regimes
- Interactions of the tropical troposphere, clouds, turbulence, entrainment, subcloud layer, and upper ocean.

### **Compensation and Benefits**

Oregon State University offers vacation, medical leave, family leave, tuition, optional retirement plans, and competitive health insurance benefits. Compensation is commensurate with experience. Minimum stipend (salary) and benefits are described at

<https://gradschool.oregonstate.edu/postdocs/stipends-and-benefits>.

### **Application**

To apply, please send: (1) a cover letter describing academic experience, qualifications, and interest in the position; (2) a statement on diversity, equity, and inclusion; (3) a curriculum vitae, including current employment and contact information; and (4) names, addresses, telephone numbers, and email addresses of three professional references. Applications will be considered as they are received. Depending on the number of applicants, referees may be contacted only for a short list of top candidates. Please send these documents as one pdf file. We strongly encourage applicants from under-represented groups (including people of color, women, people with disabilities, and LGBTQ+ candidates) to apply. Application materials and questions regarding this position should be sent to Dr. de Szoeki [simon.deszoeke@oregonstate.edu](mailto:simon.deszoeke@oregonstate.edu).