

Job Summary

The Department of Atmospheric Sciences at the University of Washington has a Postdoctoral Scholar position open to join our research team working on greenhouse gas emission (GHG) estimation using dense observing systems: geostationary satellites and urban monitoring networks. The focus of the project is on developing and implementing a machine learning model that can serve as a surrogate for computationally expensive atmospheric transport models. The work is funded by NASA and there will be opportunities to work with students and scientists across multiple universities, federal labs, and NGOs.

Responsibilities for the position include:

- Development of a high-fidelity emulator for atmospheric transport
- Application of emulator to dense observations of GHG sources
- Hyperparameter estimation in GHG flux inversions
- Communicate results in peer-reviewed literature and conference presentations.

The position will be funded for one year from the date of hire with a second year of funding contingent on performance. The position will be available beginning October 12, 2021 and will remain open until filled.

Project Summary

Current and future greenhouse gas emissions will have a profound impact on the future state of our climate. As such, quantifying their emissions is critically important for both projecting future climate and assessing the impact of environmental policy. Many of the human-caused greenhouse gas emissions come from point sources. Observing and quantifying these sources necessitates densely spaced measurements. In response to this, there has been a proliferation of dense observing systems (e.g., geostationary satellites) that allow us to study these sources. However, it becomes computationally intractable to relate the observations back to the sources for these dense observing systems. This project aims to develop a computationally efficient emulator of a full-physics model, allowing us to fully utilize the measurements from these dense observing systems. The combination of these of dense observing systems and our high-fidelity emulator will allow us to study greenhouse gas point sources that are critically important for future climate.

Minimum Qualifications

A Ph.D. in atmospheric sciences or related field (oceanography, environmental sciences, geosciences, chemistry, statistics, data sciences, computer sciences or other quantitative science or engineering field) is required at the time of hire. The successful candidate will have a demonstrated ability to conduct data analyses and communicate results in peer-reviewed literature and presentations. Experience using atmospheric models, computer programming (python or Fortran), high performance computing, or machine learning is strongly desired.

To apply, please submit the following by email to turneraj@uw.edu:

- CV or Resume
- Cover letter describing your qualifications, interest in this position, and professional goals.
- Contact information for three professional references who would be willing to write a letter of recommendation. (You don't need to include the letters with your application – we will request letters from your references if you are a finalist for this position)

The University of Washington values candidates who have experience working in settings with students from diverse backgrounds and possess a strong commitment to improving access to higher education for historically underrepresented students.

Individuals from historically underrepresented groups, such as minorities, women, qualified persons with disabilities and protected veterans are encouraged to apply. Veterans' preference is extended to qualified applicants, upon request and consistent with University policy and Washington state law. Upon request, reasonable accommodations in the application process will be provided to individuals with disabilities.

To inquire about this posting, email turneraj@uw.edu