



## **Postdoctoral research position in Oceanic Circulation**

### **Department of Mechanical Engineering University of Rochester**

August 25, 2021

We are soliciting applications for a postdoctoral position to join the Turbulence and Complex Flow group in the Department of Mechanical Engineering at the University of Rochester. More information about the group can be found at <http://www.me.rochester.edu/~haluie/>

The project relies on novel multiscale analysis techniques we have been developing to map out the oceanic energy pathways over the *entire globe*, for the first time. Large-scale currents, eddies, and waves pervade the Ocean and play a prime role in the general circulation and climate. The coupling between scales ranging from  $O(10^4)$  km down to the  $O(1)$  mm scale presents a major difficulty in understanding, modeling, and predicting oceanic circulation and climate.

The main objective of the project is to study several distinct pathways that couple the mesoscales and sub-mesoscales to the larger-scale general circulation and to the atmosphere. We will pursue an integrated analysis of satellite and model data within a novel multi-scale diagnostic framework our group has been developing. The project is a collaboration among Hussein Aluie (UofR), Ben Storer (UofR), Stephen Griffies (Princeton/GFDL), Alistair Adcroft (Princeton/GFDL), Michele Buzzicotti (U. Rome, Italy), Mat Maltrud (LANL), and Matthew Hecht (LANL).

We welcome applications from candidates with a background in GFD, applied math, engineering, physics, or related disciplines with a strong interest in fluid dynamics. Previous experience with satellite datasets and/or oceanic GCMs is desirable but not required. We are keenly interested in increasing the diversity of our group and encourage applications from women and members of historically underrepresented groups.

Evaluation of applications will begin on October 22, 2021 and continue until the position is filled. The start date is flexible so we encourage interested candidates to apply now, regardless of their availability in the near future.

The position is initially for 2 years, renewed annually subject to satisfactory performance. Salary and benefits are competitive and will be commensurate with qualifications and experience.

Applications should be emailed as a single pdf file to Hussein Aluie ([hussein\\*\\*At\\*rochester.edu](mailto:hussein**At*rochester.edu)) and must include (i) a brief one- or two-page letter describing the candidate's academic background, interests, and their future research/career plans, (ii) CV, and (iii) contact information of three references.



### **About the University of Rochester (UofR) and the City**

Founded in 1850, UofR is a highly competitive private research university which enrolls approximately 6,000 undergraduate and 3,500 graduate students. It has historical links to pivotal US social movements, including women's suffrage (Susan B. Anthony) and abolitionism (Frederick Douglass).

Fluids and Plasma research at UofR has a dynamic and growing collaborative group involving several professors: Hussein Aluie, Riccardo Betti, Eric Blackman, Gilbert Collins, Adam Frank, Valeri Goncharov, Pierre Gourdain, Douglas Kelley, Lee Murray, Alice Quillen, Chuang Ren, Ryan Rygg, Adam Sefkow, Jessica Shang, and Thomas Weber. The department offers a friendly and stimulating research environment. We enjoy strong ties to a leading DOE fusion research facility, the Laboratory for Laser Energetics, which is adjacent to campus, and to the UofR medical school, one of the top in the US.

The city of Rochester is a thriving and affordable, low-stress, medium sized metropolis (metro area population ~1 million) with excellent public services and amenities. It enjoys a vibrant performing arts culture thanks in-part to UofR's Eastman School of Music, often ranked as the top music school in the US, and several small colleges that focus on the arts. For outdoors enthusiasts, there are many well-maintained parks that offer sanctuaries within the city and many gorgeous state parks that are less than a 1 hour drive. Many of the beaches along lake Ontario are within 15-30 minutes from the city, and the Adirondack mountains are within a 3 hour drive.