



Position Description

2 Post-Doctoral Researchers - CNRS

Level of recruitment: Post-Doctoral

Mission

Research in physical oceanography (process, modeling) - 2 positions.

Activities

The objective of this research is the study of **sub-mesoscale phenomena** at the surface and at the bottom of the oceans, and the design of **subgrid-scale parametrizations** for $\sim 1/12^\circ$ resolution ocean models (in this case, NEMO). Realistic $1/60^\circ$ North-Atlantic simulations recently carried out at IGE (see the links below) will be used in order to analyze the influence of submesoscale turbulence on kinetic energy budgets, tracer transport, and vertical exchanges within and across oceanic boundary layers. The design of submesoscale closures will include dynamic analyses; we also have an interest in data-driven approaches, based on Machine Learning.

This work will contribute to the "**Consistent Ocean Turbulence for Climate Simulators (CONTACTS)**" project, funded by the "Make Our Planet Great Again" program, initiated by Emmanuel Macron and administered by the National Research Agency (ANR). The selected postdoctoral fellows will work in close collaboration with W.K Dewar (Florida State University), T. Penduff, B. Barnier and J. Le Sommer, researchers at IGE (see links below). They will also be encouraged to develop their own research in the general context of the project.

More information on the CONTACTS project:

<http://meom-group.github.io/projects/contacts/>

More about the $1/60^\circ$ NEMO simulations (click on the HD option):

<https://www.youtube.com/watch?v=JmsWVgK9HTc>

<https://www.youtube.com/watch?v=yZio0kHMGcA>

Skills

Candidates must hold a Ph.D. in physical oceanography, atmospheric science or fluid mechanics (turbulence). A track record of publications on fine-scale ocean dynamics or scale interactions in turbulent flows will be most appreciated. A strong background in geophysical fluid dynamics and/or applied mathematics is also expected.

Affiliation

The Post-doctoral researchers will carry out their mission within the MEOM team of IGE and will closely collaborate with Bill DEWAR (Florida State University) and Thierry PENDUFF (IGE).

Constraints and risks

None.

Work environment

The Institute of Environmental Geosciences (IGE) is a public research laboratory under the supervision of CNRS/INSU, IRD, University Grenoble Alpes (UGA) and Grenoble-INP.

It gathers about 240 people including 145 permanent members (researchers, teacher-researchers, engineers), and about 95 PhD students, post-doctoral researchers and staff on fixed-term contracts. The Institute also hosts several dozen trainees and scientific visitors each year. The Institute is installed on three sites of the University Campus of Grenoble (sites Molière, OSUG-B, and Bergès). IGE is one of the main laboratories of the Observatory of Sciences of the Universe of Grenoble (OSUG) which is a federative structure of INSU.

More information on IGE's Multi-scale Ocean Modeling (MEOM) team:

<https://meom-group.github.io/>

General information

Type of contract: fixed term

Section: 19

Duration of contracts: 18 months (renewable once)

Planned hiring dates: March 1, 2019 (at the earliest)

Working time: Full time

Desired level of recruitment: PhD in physical oceanography, atmospheric science or fluid mechanics (turbulence)

Desired experience: 1 to 10 years after PhD

Monthly gross salary: between 2530 € and 3847 € (according to experience), including health insurance through the French national health care

Submission of applications on: <https://emploi.cnrs.fr/>