

Post-doctoral position offered

## INVESTIGATION OF BISTABLE GEOPHYSICAL FLOWS IN ROTATING TANK EXPERIMENTS

**Where:** *Laboratoire des Ecoulements Géophysiques et Industriels - Plate-forme Coriolis (LEGI)*, CNRS-Univ. of Grenoble, France)

**Directed by:** Joël SOMMERIA and Freddy BOUCHET. Project ANR STATOCEAN, in collaboration with X. CARTON and Eric SIMONNET

**Description:** The organisation of turbulent geophysical flows into multiple equilibria is a striking dynamical property, relevant for climatic evolution at decennial scale. Bistability is observed in the Kuroshio oceanic current, as well as in the atmospheric circulation. A post-doc position will be hired to develop experiments aimed at reproducing such bistability phenomena in a rotating tank experiment. The effect of topography, density stratification, and boundaries, will be investigated. The candidate will also use existing numerical codes (few layers Quasi-Geostrophic) in order to perform numerical simulations of the dynamics. Fundamental questions on predictability of geophysical flows will be addressed in this system. The experiments will be designed in relation with statistical mechanics predictions and numerical simulations.

This work will be performed in the frame of the project STATOCEAN involving the *Ecole Normale Supérieure in Lyon* (ENS-Lyon, F. Bouchet), the *Laboratoire de la Physique des Océans* (LPO-Brest, X. Carton), the *Institut Non Linéaire de Nice* (INLN, E. Simonnet). Collaborations will be developed with another post-doc working on the statistical mechanics aspects of the project at ENS-Lyon. This multi-disciplinary scientific environment will offer opportunities of future research in fields ranging from oceanography to physics and applied mathematics.

More on the STATOCEAN project : <http://perso.ens-lyon.fr/freddy.bouchet/Statocean.html>

- PhD. in physics or in geophysical fluid dynamics required. Experience with turbulence, hydrodynamic instability and/or statistical mechanics will be appreciated, as well as skill in experimental fluid mechanics.
- The position can start any time in 2010 or 2011.
- Applicants should send a CV with two recommendation letters to Joel Sommeria: [joel.sommeria@coriolis-legi.org](mailto:joel.sommeria@coriolis-legi.org) and Freddy Bouchet: [Freddy.Bouchet@inln.cnrs.fr](mailto:Freddy.Bouchet@inln.cnrs.fr)
- Web:  
Statocean: <http://perso.ens-lyon.fr/freddy.bouchet/Statocean.html>  
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