



Postdoctoral position :

Large deviation theory and computation of rare events in climate dynamics

We are looking for top quality young researchers to join our research team. This position will be part of the ERC project TRANSITION led by Freddy Bouchet at the laboratoire de physique of ENS de Lyon.

The research project TRANSITION aims at developing statistical mechanics tools, mainly based on large deviation theory, in order to compute rare events which are essential in the understanding of some specific aspects of climate dynamics. The problems studied span a complete range between academic turbulence problems and applications to climate dynamics, bridging theoretical studies from first principles with empirical computation of rare events through dedicated algorithms in realistic models of atmosphere and ocean dynamics.

Our current research projects include: 1) the computation of the probability and dynamics of extreme heat waves using rare event algorithms, which provide a tool to sample rare heat waves with a gain of several orders of magnitude in computational cost, 2) the study of rare transitions in atmosphere jet dynamics, aimed at understanding rare transitions between attractors in turbulent flows, of relevance for the Earth atmosphere dynamics, 3) application of rare event algorithms to study abrupt paleoclimate transitions. The post-doc will take part on one of these three ongoing research projects by developing the numerical computation of rare events for the relevant models.

The postdoctoral candidate should have a solid background in either physics, applied mathematics, or climate dynamics. Although not strictly required, a strong experience in running idealized or comprehensive GCM (General Circulation Models) or climate models would be highly appreciated.

The working conditions will be very good, in the scientific environment of ENS de Lyon, with a very strong expertise and some of the leading researchers in turbulence, geophysical turbulence, climate, and statistical physics.

The position duration could extend from one to two years, and could start either in the fall of 2017 or in september-october 2017.

If you are interested please send a simple application e-mail, including a CV to Freddy Bouchet: Freddy.Bouchet@ens-lyon.fr