

Postdoctoral position at Ecole Normale Supérieure in Paris in 2019 (for 2.5 years) in atmospheric science

Where? Laboratoire de Météorologie Dynamique, Ecole Normale Supérieure, Paris France.

When? The postdoctoral position is for two and a half years, starting after June 2019, ideally in September 2019 though the starting date is somewhat flexible.

How to apply?

In order to apply, please send to Caroline Muller muller@lmd.ens.fr :

- a detailed CV (including list of publications and conference presentations, and a preferred starting date if you have one),
- a research statement,
- the names of 3 referees. Please also arrange for the 3 recommendation letters to be sent separately to muller@lmd.ens.fr

There is no formal deadline to apply, but the review of applications will start in January, 2019.

More information:

A two and a half years postdoctoral position in atmospheric science is available at Ecole Normale Supérieure in Paris, to work on the spatial organization of deep convective clouds in the tropics. Problems of particular interest are i) what are the physical processes responsible for the spatial organization of deep clouds in the tropics, and ii) what implications for tropical cyclogenesis, in our current and in a warming climate.

Convective organization at mesoscales (hundreds of kilometers) is ubiquitous in the tropics, with important impacts on extreme weather and on the large-scale climate. Arguably, the most spectacular example of organized convection is the tropical cyclone, with its eye devoid of deep clouds, surrounded by a cloudy eyewall with rotating winds among the strongest and most devastating on the planet. Other forms of organized deep convection include mesoscale convective clusters, or squall lines. Despite its strong societal and climatic impacts, convective organization at mesoscales is still poorly understood, and is typically not accounted for in global climate models. Improved fundamental understanding of convective organization and its sensitivity to warming is hence an area of priority to achieve accurate rainfall projections in a warming climate, and is one of the goals of this research project.

More precisely, the goal of this research project is to clarify the physical processes leading to convective organization, and assess their sensitivity to warming. We will use a synergy of theory, high-resolution cloud-resolving numerical simulations, in-situ and satellite observations in order to address these scientific questions. We will investigate the implications of our results for tropical cyclogenesis and rapid intensification of tropical cyclones. Indeed, although the prediction of tropical cyclone tracks has improved in recent years, cyclogenesis and cyclone intensification remain major scientific challenges, which will be addressed here.

This project is part of a large collaborative effort, including notably Ecole Normale Supérieure Paris, where the successful applicant will work, New York University, and the University of Reading. It is funded by the ERC, which also includes funding for the successful candidate to attend national and international conferences. The successful applicant will ideally have a PhD in atmospheric science, but PhDs in related fields including computer science, applied mathematics, or fluid dynamics, are also encouraged to apply. Prior numerical modeling experience, and good communication skills, are desirable.