

CALL FOR APPLICATION
18-MONTH POSTDOCTORAL FELLOWSHIP AT CNRM-GAME
(TOULOUSE, FRANCE)

Applications are invited for a 18-month postdoctoral position starting on September 1st 2014, in the climate research group of the CNRM-GAME in Toulouse (France) to work on the following subject: "Attribution of extreme weather events". The deadline for application is May 31th 2014.

Framework:

This position is funded by the french ministry in charge of ecology, sustainable development, and energy, through the Extremoscope research project. The ultimate objective of this project is to describe and qualify extreme weather events in the context of a changing climate. The project involves two research entities (IPSL-LSCE and CNRM-GAME), with a contribution from the Climatology Department of Météo-France.

Work description:

The proposed work will mainly consist in assessing how much the occurrence probability of some extreme weather events has been / will be affected by climate change. This assessment will be based on simulations performed by several global climate models in the framework of the CMIP5 project. One final objective will be to apply such a diagnosis to a few recently observed extreme events. The following tasks should be considered :

- 1) Define a suitable methodology to estimate a non-stationary probability to exceed a given threshold in an univariate time series. For moderate extreme events, this could be done by considering non-stationary quantiles; for more intense extreme events, non-stationary GEV-GPD distributions might be used. This first task could be viewed as the main key point of the proposed work. It may benefit from previously proposed statistical methods.
- 2) Apply this method to a small set of recently observed extreme events, based on time series derived from historical and 21st-century (under RCP scenarios) simulations provided by CMIP5 climate models. This part of the work could include some thinking on how to define these extreme events (e.g. in terms of duration, spatial extent, exceedance threshold, etc).
- 3) Depending on the work progress, introduce a statistical method in order to properly account for multi-model uncertainties (different climate models may provide different responses), as well as uncertainties related to the (subjective) definition of the event (duration, spatial extent, exceedance threshold, see point 2).

As a part of this scientific task, the applicant will be asked to write scientific publication(s) and to contribute to the final report of the Extremoscope project.

Desirable qualifications:

- 1) A Ph.D. either in applied mathematics (statistics) or in atmospheric sciences, or an engineer diploma.
- 2) An experience with the linux operating system, the R statistical software, and netcdf file format.
- 3) A good practice in English and, conveniently, French language.

Practical information:

The successful applicant will be contracted by Météo-France and will be based at the “Centre National de Recherches Météorologiques” (Toulouse, France; <http://www.cnrm.meteo.fr/>) within the climate research group. The opened position will start on September 1st 2014 for a 18-month duration. The net salary will be between **1800 and 3000 euros per month**, depending on the qualifications and experience of the candidate and according to the CNRS (Centre National de la Recherche Scientifique) salary scales.

For full consideration, an application letter including a detailed statement of research interest, along with a curriculum vitae (including research experience, publications and conferences, computing skill and different language practises) and the names, telephone and email address of 2 referees should be sent by email before May 31th 2014 to:

aurelien.ribes@meteo.fr

and:

julien.cattiaux@meteo.fr

For more details about this call, please contact:

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For more details about CNRM-GAME climate research activities, please visit :

<http://www.cnrm.meteo.fr/?lang=en>