16-month post-doc offer on analysis of extreme events as simulated by climate models

The Laboratoire des Sciences du Climat et de l'Environnement (LSCE) is offering a 16-month post-doctoral position for the analysis of how ensembles of climate model simulations estimate changes in extreme weather and climate events, especially as a function of number of simulation members or model resolution. This analysis is done within the Copernicus Climate Change Service framework.

Context: Climate services are developing in many places around the world, using climate simulations and observations for adaptation to and mitigation of climate change. Ensemble climate simulations can help in particular to evaluate change in risks of damaging extreme events. European activities and stakeholders may need a specific processing of simulations that are carried out internationally, or may need dedicated simulations. The goal of the CRECP Project (Copernicus Roadmap for European Climate projections) of the Copernicus Climate Change Service is to establish a roadmap for research and simulation production in such a perspective. This requires preliminary analyses of existing simulations. The post-doc position offered aims at developing these analyses and participating to the roadmap writing.

Description of post-doc work: The post-doc work will consist in determining, from existing simulations ensembles, a suitable strategy concerning ensembles of climate simulations for Europe with a focus on risks due to extreme events. It will in particular compare benefits and drawbacks of large ensembles with a lower resolution versus smaller ensembles with a higher resolution. During the 15-month work period, the work will consist in:

- Reviewing published analyses done so far on the representation of extreme events by ensembles of climate simulations (using CMIP, CORDEX, decadal predictions or other ensemble sets)
- Selecting an ensemble of events relevant for adaptation of European countries and industry
- Selecting an ensemble of metrics in order to measure the skill of an ensemble to represent the extreme events and their potential impacts.
- Applying the analysis and comparing different strategies for ensembles
- Participating to the roadmap construction meetings
- Submitting at least one scientific article to a peer review journal

The work will require a climate and statistical scientific background. Most analyses will involve the use of statistical theories of extreme values, as well as analyses of atmospheric weather patterns such as weather regimes.

Start, duration and salary: The post-doctorate will be hired by CNRS for 16 months with a net monthly salary around 2000 euros, commensurate with experience. This includes social services and health insurance. The work will start in winter or early spring 2017.

Required experience: a PhD is required, preferably in atmospheric or climate sciences, with an experience in statistical analysis and statistical theory. Ease in using UNIX, shell scripting, and other programming languages (R, Python, FORTRAN, C, …) is necessary.

Contact for applications: Applications should be sent as soon as possible and before 1 January 2017. They should include a CV, a statement of research interests and the names of at least two references including e-mail addresses and telephone numbers. Applications should be submitted by e-mail to R. Vautard (robert.vautard@lsce.ipsl.fr) and S. Joussaume (sylvie.joussaume@lsce.ipsl.fr).