

## Postdoctoral position at LSCE

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Subject : Atmospheric circulation variability, climate extremes and their relation with external forcings

The Laboratoire des Science du Climat et de l'Environnement (LSCE) offers a postdoctoral position for the A2C2 (Atmospheric flow Analogues and Climate Change) project, funded by the ERC. The general goal of the project is to investigate statistical properties of climatic strange attractors, and their changes due to external forcings. A mathematical framework is being developed to measure attractor changes. This framework is based on the method of analogues of circulation.

The goal of the postdoctoral position is to investigate how/why the statistical properties of the atmospheric circulation have changed during the past millennium, and how this alters the probability of observing extremes events. The candidate will evaluate the probability distribution of climate variables from atmospheric flow analogues, in millennium climate simulations (from the CMIP5 and PMIP3 databases).

From this evaluation, we will determine how the atmospheric flow controls climate variables such as temperature, precipitation and wind speed. This will be done by comparing the probability distributions of flow analogues from control and forced simulations, in PMIP3 and CMIP5 databases.

We will then investigate the emergence of statistical changes in atmospheric flow. Simulations of future scenarios will be used to determine how and when changes in atmospheric circulation statistical properties appear, and how they relate to climate extremes. A particular attention will be given to unprecedented events (up to a certain time), the so-called "black swans", for temperature, precipitation and wind.

The candidates should preferably hold a PhD in atmospheric sciences (atmospheric dynamics), probability/statistics or applied mathematics. A good experience of R, linux and shell scripts is required. We encourage candidates with a good experience of nonlinear dynamics and statistical methods such as extreme value theory, statistical downscaling or time series.

The position is for 2+2 years. The salary is commensurate with experience. The position will start in June 2014. LSCE is located in the South West suburb of Paris. The candidate will work in the ESTIMR (Extremes, Statistics, Impacts & Regionalization) team.

Please send a CV (including list of publications), letter of motivation (stating how your experience is related to the postdoc offer) and two letters of recommendation before March 1<sup>st</sup> 2014.

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