



## POST-DOCTORAL POSITION IN ECOSYSTEM MODELING

LSCE, Gif-sur-Yvette, 17/06/2016

The land-surface modeling group at the LSCE ([www.lsce.ipsl.fr/](http://www.lsce.ipsl.fr/)) is looking for a post-doctoral researcher or engineer interested in land surface and ecosystem modeling. The position is available for a fixed-term period of 2.5 years with a possible extension.

The scientific context is the quantification of CO<sub>2</sub> and CH<sub>4</sub> fluxes exchanged between the terrestrial vegetation and the atmosphere and the understanding of the underlying processes. Within the Copernicus Atmosphere Monitoring Service (CAMS), recently launched by the European Commission, the LSCE will directly contribute to the improvement of the global greenhouse gas monitoring and forecasting system of the European Center for Meteorological Weather Forecast (ECMWF). The main objective is to develop global statistical models (such as neural networks or model tree ensembles) for specific processes linked to CO<sub>2</sub>/CH<sub>4</sub> fluxes, to be inserted in the Compound Integrated Forecasting System (C-IFS) of ECMWF. The first component is a statistical model to compute CH<sub>4</sub> emissions from wetland and permafrost areas, trained with fluxes estimated from a process-based land surface model (such as the ORCHIDEE model) and forced with meteorological, topographic and productivity variables (from C-IFS). The second component is a statistical model to relate the Gross Primary Production (GPP) of the land surface model in C-IFS to newly available Solar Induced Fluorescence data (SIF) measured from space (such as GOSAT and GOME2 instruments). The candidate will insert in a team of researchers with the primary objective to help constructing these statistical models and to valorize them in collaboration with ECMWF researchers. He/She will also use the global land surface model ORCHIDEE (co-developed at LSCE), including recent developments related to natural CH<sub>4</sub> emissions and the simulation of canopy level vegetation fluorescence. Specific tasks of the position will be further adjusted following discussions between the applicant and the principal investigators, while taking into account the experience of the applicant. The activities will be located at LSCE (CEA, Orme des Merisiers, Gif/Yvette, France) on the plateau of Saclay, approximately 25 km south-west of Paris, with some travel to England (ECMWF).

### Home institution:

Laboratoire des Sciences du Climat et de l'Environnement (LSCE, Orme-les-Merisiers, Gif-sur-Yvette). LSCE is a joint research unit of Commissariat à l'Energie Atomique et des Energies Alternatives (CEA), Centre National de la Recherche Scientifique (CNRS) and Université de Versailles Saint Quentin-en-Yvelines (UVSQ). LSCE employs over 320 researchers covering 30

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different nationalities. Their research mission is to contribute to a better understanding of the interactions between human activities in the Earth System, environment and climate dynamics at different time scales. LSCE is a world-class institute and a thriving nexus for climate change research.

Qualifications required:

We are seeking highly motivated candidates with a degree (Master or PhD) in for example mathematics, physics, engineering, computer science, meteorology or theoretical ecology. Candidates should have preferably expertise in statistical or process-oriented modeling and strong desire to develop code and integrate scientific knowledge into numerical schemes. A broad interest in natural sciences and more specifically in terrestrial ecology is essential.

Required content of the application:

Applications and inquiries should be sent to:

Philippe Peylin ([peylin@lsce.ipsl.fr](mailto:peylin@lsce.ipsl.fr))

Frederic Chevallier ([chevallier@lsce.ipsl.fr](mailto:chevallier@lsce.ipsl.fr))

Applications should include (1) a curriculum vitae, (2) statement of motivation and (3) names, addresses, phone numbers, and email addresses of at least two references. The position is available from September 1st and will remain open until filled with a review of applications and interviews starting early July. Salary follows national directives and is adjusted for work experience.

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