

RESEARCH POSITION IN MODELLING STAND-LEVEL FOREST DYNAMICS

BACKGROUND: We are seeking a RESEARCH ASSOCIATE (PhD or postdoctoral) to i) further develop a process-based global land surface model (ORCHIDEE) used within the IPSL Earth system model for climate simulations (IPCC-AR5) and ii) strengthen a recently established ERC research team (2 post-docs, 2 PhD's and 1 PI) that aims to quantify and understand the role of forest management in mitigating climate change. To this aim, the team is working towards a more detailed and process-based description of forest stands in ORCHIDEE and wants to start developing a model-module that bolts together earlier developments. This module will implement a computational efficient scheme to model stochastic processes (i.e. gap dynamics) and the resulting multi-layered canopy structure. A similar scheme called SAS has been proposed by Mooncroft et al 2001. A method for scaling vegetation dynamics: the ecosystem demography model. *Ecological applications*, 71(4):557-586.

HOME INSTITUTION: Laboratoire des Sciences du Climat et de l'Environnement (LSCE, Ormeles-Merisiers, Gif-sur-Yvette). LSCE is a joint research unit of Commissariat à l'Énergie Atomique et des Énergies 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 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.

DESCRIPTION OF RESPONSIBILITIES: The major focus of the position is placed on research and code development. The successful candidate will reinforce and widen the expertise of the team while strengthening synergies within the LSCE. Research duties include all of the following: literature study, model development (ORCHIDEE land surface model), data processing, and model validation (ORCHIDEE), participation in scientific conferences and publication in peer reviewed international journals. The position is available for up to 24 months (with a likely 1 year extension).

QUALIFICATIONS: Given the interdisciplinary nature of the research we are seeking for a highly motivated individual with a degree (Master or PhD) in for example mathematics, physics, engineering, computer science, meteorology or theoretical ecology. A broad interest in natural sciences more specifically forest ecology is essential. Rather than for a specific training, we are looking for a candidate who is able to demonstrate her/his ability to develop code (Fortran 90), solve (partial) differential equations and solve numerical schemes. Priority will be given to individuals who published peer-reviewed papers but it is not a strict requirement.

REQUIRED CONTENT OF THE APPLICATION

There are no specified application forms. Applications and inquiries should be sent to Sebastiaan Luyssaert (Sebastiaan.Luyssaert@lsce.ipsl.fr). Applications should include (1) a curriculum vitae, (2) statement of motivation, (3) a short description (½ page no more than 1 page) of a recent problem you successfully solved making use of differential equations (or other advanced mathematical tools) and (4) names, addresses, phone numbers, and email addresses of at least two references. The position is immediately available and will remain open until filled with review of applications and interviews starting on October 21st. Salary follows national directives and is adjusted for work experience. A dual position may be explored in case the partner has a competitive cv and background in line with the research activities at LSCE.