Professorship for Land Surface-Atmosphere Interactions
School of Life Sciences
Technical University of Munich

The Professorship for Land Surface-Atmosphere Interactions at TUM School of Life Sciences Weihenstephan invites applications for a

Postdoctoral position for climate impact, mitigation and adaptation modelling

E13 TV-L, 100 %, for 3 years

About us

The professorship "Land Surface-Atmosphere Interactions" at the Department of Ecology and Ecosystem Management investigates impacts of global climate and land-use change on terrestrial ecosystems and potential mitigation and adaptation strategies. The goal is to gain a deeper knowledge of the functioning of ecosystem processes in a changing climate and provide guidance for sustainable management and adaptation of our ecosystems in the future. We develop and apply the well-established dynamic global vegetation model LPJ-GUESS (https://www.lsai.wzw.tum.de/lpj-guess/), which is a joint effort of an international developer team of which we are active members (http://web.nateko.lu.se/lpj-guess/credits.html). This model is the basis for exploring potential responses of the terrestrial biosphere to environmental changes and climatic extremes and for assessing scenarios of land management. You will work in the team of Prof. Anja Rammig in collaboration with partners from the BLIZ project (www.bliz-project.org) and from the LPJ-GUESS developer team at Lund University. For more information on our group and current projects, please see http://www.lsai.wzw.tum.de.

Your profile

- Ph.D. in a quantitative science, e.g., geo-ecology, environmental science, biology, meteorology, or systems analysis.
- Advanced knowledge of scientific programming (preferably R or Python and C++) and experience in ecosystem/atmospheric modeling is required.
- Experience with running simulations on a LINUX/UNIX cluster and handling large datasets is advantageous.
- You are interested in working independently and developing your own research agenda.
- You have excellent skills in communicating concepts and results in literate English, including writing publications and applying for third-party funding.
- You have good communication skills and are able to work in a team.

Tasks

Exploring potential land-based mitigation and adaptation strategies is urgently required in the current climate crisis. Mitigation options range from forest conservation and expansion to large-scale cultivation of bioenergy crops while adaptation strategies include selection of different species in agriculture and forestry, agroforestry, irrigation and fertilization, or changes in the harvest regime. Scenarios for the application of such strategies differ strongly at regional and global scale. Your tasks include the application and development of the dynamic ecosystem model LPJ-GUESS to assess the potential for climate adaptation and mitigation at regional, continental and global scale. A detailed representation of plant hydraulics and drought mortality in the Amazon region has recently been implemented into LPJ-GUESS. The goal is to extend and evaluate this model version for temperate and boreal forests and to conduct regional and global simulations to assess the impacts of future drought events on the climate mitigation potential of different land-based mitigation and adaptation options and associated impacts on ecosystem functioning. Candidates are invited to contribute own ideas and develop their own research agenda with regard to climate impact, mitigation and adaptation modelling.The contribution to university teaching (forestry and environmental sciences) is required (5 hours per week during the semester).

Our offer

We offer a stimulating working environment in an interdisciplinary research team with the opportunity to contribute to existing projects (see www.lsai.wzw.tum.de) and to develop your own research agenda. The position is full-time, and conditions of employment follow the rules of the German tariffs of public services (TV-L). Funding for travel, conference visits, stays abroad and personal development is available. TUM is an equal opportunity employer. Qualified women are therefore particularly encouraged to apply. Applicants with disabilities are treated with preference given comparable qualifications.

Contact

Please send your application as a single PDF file, including a cover letter, CV, a brief description of scientific achievements and interests, and contact information of two referees before September 15 to Dr. Andy Krause (andy.krause@tum.de). Please do not hesitate to contact us in case of questions regarding the position!