

PhD student: "Seamlessly simulating climate from the past into the future"

(4 years)

Climate and Environmental Physics is a division of the Physics Institute of the University of Bern, Switzerland. We are committed to understand the processes of Earth System on time scales from seasons to a million years.

In the framework of the HORIZON EUROPE funded project "Past to Future: towards fully paleo-informed future climate projections (P2F)" the Division of Climate and Environmental Physics at the Physics Institute, University of Bern, Switzerland, invites applications for the vacant PhD students position opening 1st March 2025.

Tasks

The P2F project aims to create a framework that uses new knowledge of past climatic conditions to project future climate change on spatio-temporal scales relevant for societies, ecosystems, and the planet as a whole. The PhD student will perform and analyze long-term transient climate model simulations of key periods (e.g., glacial-interglacials of the last 800 000 years, Mid-Pleistocene Transition) with an intermediate complexity Earth system model. The model will be paleo-calibrated by direct constraints from climate reconstructions, for which also new paleo-proxies will be implemented. These simulations will seamlessly continue into the future, and will be analyzed in detail especially with regard to the occurrence of abrupt transitions, previously unknown tipping points, and the quantification of committed climate change.

This project offers the opportunity to work with experts in past and future climate modeling, proxy reconstructions, and climate impact studies within the P2F project, the Climate and Environmental Physics division, and the Oeschger Centre for Climate Change Research (www.oeschger.unibe.ch), providing an inspiring environment for Early Career Scientists in this field. The successful candidate will actively contribute to the new Global Biogeochemical Modeling Group, presenting results at international scientific conferences and publishing in the peer-reviewed literature.

Requirements

The successful candidate holds a MSc degree in Oceanography, Climate Science, Physics, or a related field, or will have completed the degree before the start of the project. The candidate should have a deep interest in climate modeling and possess advanced programming skills (e.g., in Python, Fortran, R) and data handling skills. Additionally, the candidate should have a passion for interdisciplinary and collaborative research and be proficient in both written and spoken English. Knowledge of past climate and how its reconstructed would be considered an advantage.

We offer

The envisaged starting date is 1st March 2025 or upon agreement. Employment conditions and remuneration are in accordance with the standards of the University of Bern, Switzerland. Secondments to the other project partners are planned.

For further information please contact Dr. Frerk Pöppelmeier (frerk.poepelmeier@unibe.ch).

All applications received before 22nd November 2024 will be reviewed, and further applications will be considered until the position is filled. Please send your application documents in a single PDF-file including a motivation letter, CV, degree certificates, and contact information for two references by e-mail to Dr. Frerk Pöppelmeier (frerk.poepelmeier@unibe.ch).