UNIVERSITÄT
BERN

Climate and Environmental Physics, Sidlerstr. 5, CH-3012 Bern

Physikalisches Institut
Klima- und Umweltphysik

Scientific Programmer in Earth system modeling (80-100%)

The Climate and Environmental Physics division of the University of Bern, Switzerland, is searching for an outstanding and motivated Scientific Programmer in Earth system modeling to support the development, maintenance, and application of our climate model hierarchy. The position provides an excellent opportunity to specialize in the vibrating field of Earth system modeling and to get familiar with state-of-the-art Earth System Models and Earth System Models of Intermediate Complexity, representing physical and biogeochemical processes and the coupling of the ocean, atmosphere, land biosphere, and ice sheets. The work utilizes the Linux cluster of the University of Bern and the high-end systems of the Swiss National Supercomputing Centre (CSCS).

Responsibilities

- Implementing new features in NOAA GFDL's comprehensive, fully coupled carbon-cycle climate model, creating boundary conditions, conducting simulations at the CSCS, maintaining the model in a changing software environment, optimizing model performance, standardizing model outputs, and assisting with scientific analysis.
- Contribute to the advancement of the in-house Earth system Model of Intermediate Complexity Bern3D-LPX by supporting the development of a more modular design, exploring the possibility of coupling new sub-modules, and leveraging new Machine Learning techniques for bias correction and downscaling schemes.
- The role includes interacting with leading scientists in different Horizon Europe projects, such as TipESM, ClimTip, and Past-To-Future, as well as within the Climate and Environmental Physics Division, and the Oeschger Centre for Climate Change Research.

Requirements

- Master's degree in software engineering, data science, computer science, mathematics, physics, climate science, oceanography, or related fields. A PhD is preferred.
- Demonstrated proficiency in Fortran, Julia, C or other programming languages.
- Demonstrated proficiency in Python, Matlab or other scripting languages widely used for data analysis and processing.
- Experience with version control systems like Git, and familiarity with software testing and documentation practices.
- Familiarity with high-performance computing (HPC) systems, parallel data processing, and data formats such as netCDF is highly advantageous.
- Proficiency in English, both written and spoken, is essential.

The successful candidate will actively contribute to the dynamic and expanding groups of Ocean Modeling (head: Prof. Thomas Frölicher) and Global Biogeochemical Modeling (head: Prof. Frerk Pöppelmer). Employment conditions and remuneration are following the standards of the University of Bern, Switzerland. **The appointment is for four years** with an opportunity for extension if funding is available**.**

Interested candidates submit a single pdf file containing a motivation letter, a CV, Master/Diploma or PhD certificates, and contact details for two references. Applications should be sent to Prof. Thomas Frölicher (thomas.froelicher@unibe.ch). Questions can also be addressed to Prof. Frerk Pöppelmeier (frerk.poeppelmeier@unibe.ch). **The review of applications will begin as soon as they are received and continue until the position is filled. The start is preferably in January 2025 or upon agreement.**