

The German Climate Computing Center (DKRZ) is one of the leading facilities for climate and Earth system modelling. DKRZ operates supercomputers in the highest performance class, modern high-performance clusters and visualization systems as well as one of the largest data and archive systems worldwide. DKRZ participates in many national and international projects aiming to improve the infrastructure for climate modelling. Through its research group on scientific computing, DKRZ is linked to the department of informatics of the University of Hamburg. We look for a

Computer Scientist or Scientific Programmer (m/f/d)

who, within the research theme

High-Performance Computing and Data-intensive Science

of the excellence cluster

Climate, Climate Change and Society (CliCCS)

will contribute to the technical improvement of

World-leading Weather and Climate Models

Our offer:

We offer a challenging position at the interface of high performance computing and climate science.

The contract is limited to the project duration of six years. The salary is according to your personal qualification based on German regulations for the Civil Service (TVöD).

The framework you will be working in:

CLICCS is an ambitious research program at Universität Hamburg and its partner institutions. Funded by the German Research Foundation (DFG), it is part of Germany's Excellence Strategy. The program aims to understand climate changes, taking into account internal variability, extreme events, and unexpected side effects, addressing the natural and social spheres as well as their interactions. Thus CLICCS' overarching research question is which climate futures are possible and which are plausible? The advertised position is part of a "cross-disciplinary lab", where three CliCCS computer and data scientists collaborate with climate scientists, model developers and HPC-specialists in the areas of (i) climate model software engineering, (ii) high-volume data visualization, (iii) data management for simulations and observations.

The goals of this particular position in the area of software engineering (i) are

- Evaluation and application domain-specific-languages (DSL) in order to maximize flexibility, programmability and performance portability to heterogeneous hardware solutions across different climate models.
- Investigate further approaches to the concept of separation of concerns for the efficient development of climate models. This includes also initiation of collaboration with other research projects in the area of software engineering.

Your responsibilities:

- You participate in the design and development of a high-level DSL for the ICON climate and weather model.
- You evaluate the usability of the DSL and the performance of the DSL-generated code for algorithms implemented in ICON
- You foster the dialogue between CliCCS domain scientists and computer scientists to establish cooperations for improving performance portability and maintainability of ICON

Your qualifications:

- A university degree in Computer Science, Applied Mathematics, Computational Physics/Engineering or related fields
- Basic knowledge about parser concepts and software engineering
- Expert knowledge in programming C/C++, Python or FORTRAN
- Experience in complex software development and familiarity in software version control systems (preferably Git)

Your personal skills:

- Fluency in English (spoken and written)
- Capacity for teamwork in an interdisciplinary environment

For further information about this position, please contact Dr Joachim Biercamp (biercamp@dkrz.de). To find out more about CliCCS please refer to <https://www.cliccs.uni-hamburg.de>.

The call is open until the position is filled. The review of applications will start on September 1st, 2019. Please submit your informative application containing a cover letter, detailed curriculum, and supporting material as pdf file via email to bewerbungen@dkrz.de using the identifier *DKRZ15*.