TROPOS
Leibniz-Institut für Troposphärenforschung

Scientist for Innovative HPC-Methods in Cloud Modelling (m, f, d)

The Leibniz Institute for Tropospheric Research is a research institute of the Leibniz Association and an internationally renowned institute in the field of aerosol and cloud research.

In the **BMBF-funded project consortium "IFCES2 - With Intra-model Functional Concurrency towards Efficient Exascale Earth System Predictions",** innovative HPC methods are being developed to optimize the national weather forecast and Earth system model ICON for future exascale supercomputers. The work will be carried out in close cooperation with leading supercomputing centers TU Dresden, Deutsches Klimarechenzentrum and Jülich Supercomputing Centre and represents an important contribution to a highly relevant area of climate research. To this end, TROPOS is contributing its expertise in the detailed modeling of clouds to the project consortium and plans to apply functional concurrency and dynamic load balancing to make novel model simulations of tropical cyclones possible for the first time.

For the following **tasks** TROPOS is looking for a scientific employee (m, f, d):

- *Design and development of parallel, highly scalable HPC methods for the efficient execution of atmospheric simulations.*
- *Analysis of the efficiency and stability of the numerical methods currently applied and development of appropriate improvements*
- *Creation of detailed cloud simulations and their combination with observational data for improved interpretation of cloud processes in tropical cyclones*
- *Compilation and publication of the scientific results in scientific journals and presentation of the results at science conferences*

We are looking for a scientist with the following **qualifications**:

- *completed PhD in the field of meteorology, physics, mathematics, computer science or an equivalent scientific or mathematical discipline*
- *very good knowledge in FORTRAN programming, UNIX/Linux and Shell Script*
- *knowledge of server-based computer structures and high-performance computers (e.g. HLRE at DKRZ)*
- *competent handling of analysis and visualization software (e.g. CDO, Python)*
- *very good knowledge of written and spoken English is required*

- *furthermore the following qualifications are advantageous*
    - *Knowledge of parallelization of scientific applications*
    - *Experience in the use of the ICON model and the scientific exploitation of ICON data*
    - *German language skills*

The ideal starting date would be 1 Feb. 2023, with a fixed term of three years.

We **offer** you:

- an exciting job with a varied activity in an interdisciplinary working environment and a variety of work and family offers as well as flexible working hours and daycare places.
- an attractive living environment with Leipzig as an interesting and culturally diverse city
- The employment is temporary and includes a full-time position with 40 hours / week.
- Remuneration is provided at TV-L pay group 13, including the attractive social benefits of the public sector.

In order to increase the proportion of female employees in scientific and science-related positions, we hereby specifically invite female candidates to apply. People with severe disabilities have priority in the hiring process if they have the same suitability, aptitude and professional qualifications.

If you are interested, please send your complete and informative application documents (including references) **by 1 Dec. 2022** exclusively by e-mail in one coherent PDF document to:

bewerbung@tropos.de

Please contact us if you have any questions regarding this job offer:

Fabian Senf (senf@tropos.de)

By submitting the application documents by e-mail, the applicant agrees to the storage/processing of personal data in accordance with Art. 13 DSGVO for the purpose of selection for this job advertisement. The risks of sending documents electronically are hereby pointed out.

You can find more information about TROPOS on the homepage: www.tropos.de