Two Post-Doc positions at KIT within “Updating the data basis for adaptation to climate change in Germany” (UDAG) consortium

Karlsruhe Institute of Technology (KIT), Institute of Meteorology and Climate Research

KIT is a distinguished research university that combines three core tasks – research, education and innovation – into a single mission. With 9,300 employees and almost 25,000 students, it is one of the largest institutions of research and higher education in natural sciences and engineering in Europe. KIT was awarded the title "University of Excellence" within the German Excellence Strategy launched by the federal and state governments on 19 July 2019. In the area of Atmospheric Science, KIT was ranked #1 in Germany and #8 worldwide in the 2019 Shanghai Ranking.

The Institute of Meteorology and Climate Research (IMK) participates in the KIT Centers "Climate and Environment" and "MathSEE (Mathematics in Sciences, Engineering, and Economics)" and contributes significantly to the program "Changing Earth" of the Helmholtz Association. The department “Troposphere Research” IMK-TRO (http://www.imk-tro.kit.edu/english/index.php) focuses on troposphere research, climate variability and change, water cycle and trace substance budgets. The Working Group "Regional Climate and Weather Hazards" (http://www.imk-tro.kit.edu/english/7144.php) focusses on an integrated analysis of extreme weather and climate events, climate change, climate variability and risk assessment. This includes both fundamental and applied research. Particular attention is given to the links between the weather, climate, regionalisation and risk assessment perspectives associated with extreme events.

One of the large projects where we are involved in is BMBF “Updating the data basis for adaptation to climate change in Germany” (UDAG). The aim is the provision of up-to-date regional climate projections for the use in the German adaptation strategy. The new CMIP6 scenarios and global simulations make an update of the regional climate projections necessary. UDAG will therefore provide a quality-checked ensemble of regional climate projections for Europe (12 km) and for “hydrological Germany” (3 km). Our team is involved in several work packages, partly in a leading role.

We have two open position for postdoctoral candidates for a period of 3 years within the UDAG.

**Duties Position #1 (model set up, simulations):** As a Post-Doc, you will work within UDAG, Work Packages 1 and 2. WP1 focuses on the preparations for the implementation of the new regional climate projections. Optimal model configurations for the ICON-CLM will be developed for both the 12 km and the 3 km simulations. The Post-Doc will coordinate the selection of global climate projections from the pool of CMIP6 models for downscaling, as well as the provision of suitable forcing data for the ICON-CLM preprocessor using a suitable converter. WP2 is dedicated to the implementation of transient climate projections with ICON-CLM from 1961-2100 with 12 km and 3 km grids, respectively. The Post-Doc will coordinate the climate projections for hydrological Germany (3km grid size).

**Duties Position #2 (evaluation, post-processing, analysis):** As a Post-Doc, you will work within UDAG, Work Package 3. WP3 focuses on the development of post-processing methods, quality control, analysis of the new ensembles, and publication of the data. The Post-Doc will be responsible for the calculation of extreme value statistics for temperature and precipitation, comparison to observations for the historical period, and analysis of possible changes of the frequency of certain circulation weather patterns. Finally, the UDAG ensemble as well as other available Euro-CORDEX CMIP6 simulations will be analyzed based on various aspects in comparison to previous studies. The Post-Doc will be responsible for the comparison of the occurrence of certain climatological events such as blocking, heat waves, and storms between the CMIP6 ensemble and the EURO-CORDEX CMIP5 ensemble.
The KIT PIs are Prof. Dr. Joaquim Pinto, Dr. Patrick Ludwig, and Dipl.-Geophys. Hendrik Feldmann.

The project is planned to start on September 1st, 2023, pending the formal acceptance letter from the BMBF.

Requirements: A PhD in Meteorology, Climate Science, Earth Sciences, or related disciplines. The applicant must be proficient in spoken and written English.

Additional qualifications (Position #1, WP1+2): For this position, extensive experience with numerical modelling is required. Experience with ICON would be advantageous. The candidate should also be experienced in scientific programming (e.g., linux, python, fortran, ncl, cdo, Matlab, R). German language skills are helpful but not mandatory.

Additional qualifications (Position #2, WP3): For this position, extensive experience in statistics, extreme event diagnostics and scientific programming (e.g., linux, python, fortran, idl, ncl, cdo, Matlab, R) are required. German language skills are helpful but not mandatory.

The application should contain (all in one PDF):

- A Curriculum Vitae.
- A cover letter stating your scientific interests and what motivates you to apply for this position.
- A list of scientific publications.
- Contact details (incl. email and telephone number) of two references.

The candidates will be short-listed based on the materials in the application, the top ranked candidates will be interviewed digitally and the references will be collected.

Salary: The remuneration is based on the collective agreement of the public service in the remuneration group TVL E13.

Starting date: 01-09-2023 or as otherwise agreed.

Terms and conditions of employment: The group is based on the research campus of KIT located about 10 km to the North of Karlsruhe city centre.

Scope of employment: 100%

For further information about this position please contact: Joaquim Pinto(joaquim.pinto@kit.edu), Dr. Patrick Ludwig (patrick.ludwig@kit.edu), Hendrik Feldmann (hendrik.feldmann@kit.edu).

Please send the documents requested above for the application all in one pdf file by 09 June 2023 to the PIs to the above e-mail, clearly stating in the subject which position you are applying to.

KIT actively supports equality, diversity and inclusion, and as an equal opportunity employer, KIT explicitly encourages applications from women as well as from all others who will bring additional diversity to the university’s research and teaching. Applicants with disabilities will be preferentially considered if suitably qualified.

Are you considering moving to Germany to work at KIT? If so, you will find a lot of information about working and living in Germany at http://www.intl.kit.edu/ischolar/index.php. You are also welcome to contact the International Scholars & Welcome Office at scholar@intl.kit.edu.