

# PhD position 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 Troposphere Research (IMKTRO)

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 Troposphere Research (IMKTRO) 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. IMKTRO (<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 modelling*’ (<https://www.imk-tro.kit.edu/english/12204.php>)’ focus on development and application of regional climate models. Particular attention is given to the links between weather, climate, regionalisation and risk assessment perspectives associated with extreme events.

One of the large projects where we are involved in is the BMBF ‘*Updating the data basis for adaptation to climate change in Germany*’ (UDAG) consortium. The aim of UDAG is the provision of up-to-date regional climate projections for the use in the German adaptation strategy. The Shared Socioeconomic Pathways (SSPs) newly introduced in CMIP6 and the further development of the climate models make an update of the regional climate projections for Germany 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 at IMKTRO is involved in several work packages and coordinates the simulations of the climate projections for hydrological Germany (3km grid spacing).

We have an **open position for a PhD candidate for a period of 3 years** within the UDAG Project.

**Duties of the Position:** As a PhD, you will work on the representation of urban areas in ICON-CLM, more specifically on the optimization and validation of the urban parametrization scheme. These will happen in strong connection with the CORDEX Flagship Pilot Study on URbAn environments and Regional Climate Change (FPS URB-RCC). Here, the candidate will focus on both traditional downscaling and storyline simulations on climate change and analyze extreme events in urban environments in a warming world. Additionally, the candidate will contribute to the production and analysis of transient climate projections with ICON-CLM from 1961-2100 with 12 km (European domain) and 3 km (hydrological Germany) grid size, respectively.

The KIT PIs are Prof. Dr. Joaquim Pinto, Dr. Patrick Ludwig and Dipl.-Geophys. Hendrik Feldmann.

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

**Additional qualifications:** For this position, experience with numerical modelling (preferably ICON) would be advantageous. The candidate should also be experienced in scientific programming (e.g., linux, python, fortran, cdo, Matlab, R, etc...). German language skills are helpful but not mandatory.

**The application should contain:**

- 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:** 01-11-2024 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:** 75% (PhD position)

**For further information** about this position please contact:

Patrick Ludwig (patrick.ludwig@kit.edu)

Joaquim Pinto (joaquim.pinto@kit.edu)

Hendrik Feldmann (hendrik.feldmann@kit.edu)

Please send your application together with the documents requested above in one single pdf file by **September 3<sup>rd</sup> 2024** to the PIs e-mails listed above.

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](mailto:scholar@intl.kit.edu).