Post-Doc position at KIT to assess the impact of global warming in the characteristics of extreme extra-tropical cyclones (CyclEx, ClimXtreme 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 2019F 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 focuses on troposphere research, climate variability and change, water cycle and trace substance budgets. The Working Group "Regional Climate and Weather Hazards" 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 the BMBF “Climate Change and Extreme Events” (ClimXtreme) consortium, which examines the not yet unambiguously determined relationship between climate change and extreme weather events (see here for KIT contributions: https://www.imk-tro.kit.edu/english/7148_10042.php).

We have an open position for a postdoctoral candidate for a period of 12 months within the ClimXtreme sub-project “A6 CyclEx: Intensity and structural changes of Extreme mid-latitude Cyclones change in a warming climate”.

**Duties:** As a Post-Doc, you will work within the BMBF ClimXtreme sub-project CyclEx, which aims to provide robust estimates of the impact of global warming on the characteristics of extreme extratropical cyclones. In particular, you will address to what extent and by which mechanisms model resolution affects small-scale diabatic processes and thereby the warming response of extreme cyclones, and what this implies for predictions from coarse-resolution global models.

The main scientific objectives of CyclEx are to assess how extreme mid-latitude cyclones and associated extreme wind and precipitation are affected by climate change. This includes both changes associated with the large-scale dynamics and small-scale diabatic processes. With this aim, we compared the climate change signal in extreme cyclones between low-resolution (CMIP6) and high-resolution simulations (ICON simulations down to 2,5km), and focus on the regional impacts for Europe in terms of strong winds and precipitation. The project is run in close collaboration with the other ClimXtreme projects at KIT and several other German research institutions. The project is run in close collaboration with Prof. Dr. Aiko Voigt from University of Vienna.

While the contract is initially for 12 months, we would like to mention that a project proposal within the same topic is already in preparation. If successful, the position can be extended accordingly.

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

- 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:** 01-04-2022 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: Prof. Dr. Joaquim Pinto, e-mail: joaquim.pinto@kit.edu.

Please send the documents requested above for the application all in one pdf file by 22 February 2022 to Prof. Dr. Joaquim Pinto under the above e-mail.

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.