

Announcement: Doctoral researcher (part time 75%, 3 years) within the Hans Ertel Centre project ICON-SmART

The Hans Ertel Centre for Weather Research (Hans-Ertel-Zentrum, HErZ, www.hans-ertel-zentrum.de) carries out fundamental research to improve weather forecasting and climate monitoring in a network between Deutscher Wetterdienst and leading meteorological research institutions in Germany. The HErZ research group “ICON-SmART”, located at KIT, addresses the role of aerosols and atmospheric chemistry for the simulation of seasonal to decadal climate variability and change. To this end, the project will enhance the capabilities of the coupled composition, weather and climate modelling system ICON-ART (ICON, icosahedral nonhydrostatic model – developed by DWD, MPI-M and DKRZ with the atmospheric composition module ART, aerosols and reactive trace gases – developed at KIT, see www.icon-art.kit.edu) for seamless seasonal to decadal predictions and climate projections in global to regional model configurations with ICON-Seamless-ART (ICON-SmART). A group of four postdoctoral/doctoral researchers deals with the coupling of ART to the land surface and ocean models, a comprehensive (tropospheric and stratospheric) chemistry scheme, scale-aware parameterizations and speed-up of process submodules with machine learning methods, and the evaluation of ICON-SmART

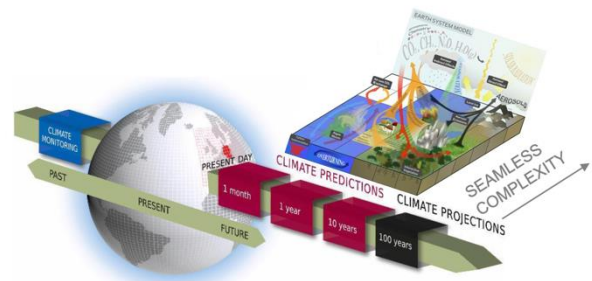


Figure adapted from Heavens et al. 2013 & Barbara Früh, ICON-Seamless presentation, 2022

To support this exciting project, we are looking for a doctoral researcher to

- Run multi-year simulations with and without complex treatment of aerosols and chemistry;
- Contribute to developing an automatized model evaluation workflow;
- Conduct continuous and in-depth evaluation of aerosol and chemical tracer distributions and budgets (global and regional), and column integrated and surface temporal evolution in ICON-ART/SmART model runs against a wide range of observational and multi-model references;
- Analyze the contributions of natural and anthropogenic aerosol to aerosol-radiative effects in decadal model simulations;
- Engage in ICON-SmART related collaborations within KIT, HErZ and beyond;
- Present results in workshops, conferences, scientific journals, etc.

You will be given the opportunity to obtain a doctoral degree. The successful candidate will have the opportunity to contribute to and gain experience in teaching.

We are looking for a highly motivated candidate with a Master of Science in meteorology, physics, or a similar field, knowledge of the physics of the atmosphere, and very good programming skills (e.g. Fortran, C++, Python, shell script, etc.). Advantageous are also experience with numerical modeling, experience with high-performance computing, and

previous knowledge in atmospheric aerosols and chemistry. Very good English language skills and communication skills, the ability to work independently and in a team, and a proactive attitude complement your profile.

We offer a dynamic work environment at one of Germany's largest research institutes for atmospheric sciences, ranked #1 in Germany in the Shanghai Ranking of Academic Subjects in Atmospheric Sciences. KIT, the research university within the Helmholtz Association, combines three core tasks — research, education and innovation — into a single mission. With 9,400 employees and 25,000 students, it is one of the largest institutions of research and higher education in natural sciences and engineering in Europe. KIT actively supports equality, diversity and inclusion, and as an equal opportunity employer, KIT explicitly encourages applications from women as well as from others with diverse backgrounds and perspectives. Applicants with disabilities will be preferentially considered if suitably qualified. Payment of the position is according to TV-L E13, depending on the fulfillment of professional and personal requirements.

Please submit your application including a letter of motivation, CV, certificates/transcripts of records, and preferred starting date **as a single pdf file** by email to Dr. **Martina Klose** (martina.klose@kit.edu) to whom you can also direct questions regarding the position.

Review of applications for the position will start on **7 April 2024**, and will continue until the position is filled.