The Hydrology group of Prof. Dr. Erwin Zehe at the Institute of Water and River Basin Management is seeking to recruit a

**Doctoral Researcher (f/m/d)**

for the project

"**InfraStructure for dAta-BasEd Learning in environmental sciences (ISABEL)**"

During your PhD you will explore new avenues in hydrological modelling, particularly the opportunity of using physics-informed data-driven models for improved predictions of hydrological extremes and their recurrence in time. Specifically, you will explore synergies between data-based and process-based hydrological modelling, key emphasis is on how to use today’s manifold datasets such as operational rain gauges, rainfall radar, private weather stations and commercial microwave links for improved flood predictions, or on using Regional Climate Model outputs for an improved assessment of drought risks.

Your research will be embedded in the Project ISABEL, which aims at the expansion and optimization of the virtual research environment V-FOR-WaTer. V-FOR-WaTer already contains generic tools for pre-processing and statistics of hydro-meteorological data and an advanced geostatistics toolbox. One aim of ISABEL is to connect the worlds of hydrological models and machine learning models, and to facilitate their joint use as much as possible. ISABEL rests on a close collaboration between the Institute of Water and River Basin Management (IWG) and the Steinbuch Computing Centre (SCC) at KIT. You will complement the existing team of computer scientists and hydrologists and work together closely with another PhD student at IWG. The technical implementation of models and tools into the V-FOR-WaTer infrastructure will be supported by a software developer.

**We expect:**
- A Master’s degree in hydrology, geocology, or in a subject related to environmental systems sciences, geoinformatics or physics.
- Good analytical skills.
- Strong interest in applying physics-informed ML to hydrological challenges; previous experience in machine learning methods is preferred (but not mandatory).
- Strong interest in programming, either in Python (preferred), Matlab or R.
- Good writing and oral communication skills in English.

**We offer** the opportunity to pursue a PhD in an internationally leading respected group, exciting opportunities for interdisciplinary collaboration, networking, and training, and with access to the excellent computing facilities of KIT. The position is initially limited to 3 years. Salary is competitive and with all social benefits (75% TVL-E13). We offer flexible working time models and a job ticket allowance.

Please apply via E-mail to Erwin.Zehe@kit.edu and Sibylle.Hassler@kit.edu until 1/12/2022 including a detailed CV, scans of degree certificates, a letter of motivation, and contact information for two referees. We aim to balance the number of employees from diverse backgrounds (f/m/d) and therefore particularly invite female researchers to apply. If qualified, disabled persons will be preferred. Planned start date is 01/01/2023. For further information, please contact Dr. Sibylle Haßler, sibylle.hassler@kit.edu.

KIT - The Research University in the Helmholtz Association