The Institute of Applied and Numerical Mathematics is seeking to recruit, limited to 2 years, a 

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

for the Project “A new TEstbed for Exploring Machine LEarning in Atmospheric Prediction (TEEMLEAP)”

TEEMLEAP is funded in the framework of KIT’s Excellence Initiative “Future Fields”. Its goal is to establish a testbed based on the operational system of the German Weather Service (DWD) to explore potential improvements to weather prediction through machine learning.

Weather forecasting is ubiquitous in everyday life and can save lives and property. However, current predictions still suffer from systematic errors caused by simplified representations of physical processes, assumptions of linear behaviour and the inability of integrating all available observational data. **Weather services around the world are now realising that circumventing these deficits through machine learning could revolutionise the discipline in the next decades.** This requires a fundamental rethinking, interlinking meteorology much better with mathematics and computer science. TEEMLEAP aims to foster this new research culture at KIT involving in total 15 scientists from 7 different institutes. Regular workshops will be organised within TEEMLEAP and with external guests to develop a common interdisciplinary research vision in the area of atmospheric prediction.

We seek an ambitious postdoctoral researcher with an interest in mathematical and computational challenges of machine learning and its combination with numerical weather prediction. Main tasks of the position are to analyze the fundamental mathematical characteristics of the envisioned new testbed, to develop a strategy for optimisation using machine learning methods and to quantify forecast uncertainty. In particular experiments on the testbed will be done in close collaboration with a second postdoctoral researcher from a meteorology background. A novelty will be the attempt to consider the whole process chain of prediction from observation to postprocessing rather than optimisation of individual steps and components.

We provide an inspiring, attractive and internationally recognized scientific environment with access to the excellent computing facilities of KIT. Interactions with other disciplines will be possible through the dedicated TEEMLEAP workshops and activities of the KIT Centres for Mathematics in Sciences, Engineering, and Economics ([www.mathsee.kit.edu](http://www.mathsee.kit.edu)) and for Climate and Environment ([www.klima-umwelt.kit.edu](http://www.klima-umwelt.kit.edu)). You will have a wide range of advanced training options and the opportunity to attend national and international conferences and workshops. Funds for scientific guests are available through the project. TEEMLEAP is committed to provide equal opportunities to researchers from a diverse background and supports persons with child- or eldercare responsibilities as well as persons with disabilities.

The following qualifications are required:

- PhD in Mathematics, Computer Sciences or closely related subject
- Strong background in numerical analysis, statistics or mathematical aspects of machine learning
- Programming skills (e.g. python, MATLAB, C++, R)
- Good writing and oral communication skills in English
- The ability to work independently and within an interdisciplinary team

We offer an attractive and modern workplace with access to the excellent facilities of KIT, ample opportunity for interdisciplinary networking, a wide range of training options, a competitive salary with all social benefits, flexible working time models, a job ticket allowance, and a cafeteria.

Please apply via E-mail to **barbara.verfuerth@kit.edu** until **23/06/2021** including a detailed CV, scans of degree certificates, a letter of motivation, 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 **01/09/2021**.

For further information, please contact Dr Barbara Verfürth, **barbara.verfuerth@kit.edu**. Information about the Institute of Applied and Numerical Mathematics can be found at [www.math.kit.edu](http://www.math.kit.edu).