

The Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany, offers the position of a

Ph.D./PostDoc Candidate

to fill a **three-year** position at the earliest convenience. The position is assigned to the Geodetic Institute (GIK) at KIT Campus South and is embedded in the DFG-funded cooperation project

“High-Resolution Atmospheric Water Vapor Fields by Spaceborne Geodetic Sensing, Tomographic Fusion and Atmospheric Modeling (AtmoWater)”

with cooperation partners from KIT (Institute of Photogrammetry and Remote Sensing; Institute of Meteorology and Climate Research) and ETH Zurich (Institute of Geodesy and Photogrammetry). By using GNSS and InSAR-based techniques in combination with high-resolution regional atmospheric weather modeling and geostatistical data merging techniques, the project AtmoWater aims at developing and evaluating new approaches to derive improved spatio-temporal estimates of the atmospheric water vapor distribution. In particular, tomography-based approaches in the evaluation of geodetic and remote sensing data will be further developed to improve the vertical and horizontal resolution of the atmospheric water vapor determination. The generated products will be used for comparison and assimilation with atmospheric model-based information to finally get an optimal estimation of the atmospheric water vapor distribution.

Main tasks

- Highly precise modeling of the electrically neutral atmosphere using GNSS to derive improved water vapor (IWV) products
- Mitigation of error sources in GNSS observations based on stacking approaches
- Development and implementation of an appropriate weighting strategy
 - Comparison and combination of the functional and stochastic approaches
 - Determination of IWV based on external sources e.g., WRF and surface meteorological data, using both PPP and DGNSS techniques
- Evaluation and validation of the estimated IWV using GNSS, WRF and/or other possible sources
- Rigorous hydrological fusion
- Synergy and integrated analysis of developed methods and derived water vapor products

Requirements

- Master's or Ph.D. degree in Geodesy or a related discipline
- Expertise in the geodetic use of GNSS observations and the processing of GNSS data, preferably with scientific evaluation software (e.g. Bernese GNSS Software)
- Good communication skills in English. Knowledge of the German language is an advantage.
- Proven programming skills
- Open mind and communication skills

Payment will be in accordance with the official agreement on tariffs for public-service employees TV-L, 100% of E13 (cf. <http://oeffentlicher-dienst.info/tv-l/west/>). The first contract will cover two years with an extension being possible.

Please submit your application until **16th of July 2017** by e-mail to bernhard.heck@kit.edu in one pdf file, including (1) cover letter, (2) curriculum vitae, (3) copies of academic degrees and transcripts of records, (4) contact address for one letter of recommendation, (5) statements regarding project-related skills and list of applications, if applicable.

The position remains open until a suitable candidate has been selected. Questions can be addressed to Prof. Dr.-Ing. Dr.h.c. Bernhard Heck by e-mail (bernhard.heck@kit.edu) or telephone (+49-721-608-43674).

KIT strives to achieve gender balance at all levels of employment. We therefore particularly encourage female candidates to apply for this position. With appropriate qualifications, applications from handicapped persons will be treated with preference. By participation in the Graduate School GRACE, Ph.D. students will be optimally prepared for a later career in science, business or potential entrepreneurship in disciplinary, interdisciplinary, and professional respects. Information about the KIT and the Geodetic Institute can be found at www.kit.edu and www.gik.kit.edu, respectively.



KIT – The Research University in the Helmholtz Association