

The **Karlsruhe Institute of Technology (KIT)** is a merger of a research center of the Helmholtz Association and the Universität Karlsruhe (TH). Research at KIT benefits society by building bridges between important scientific findings and their practical application. With 9400 employees and approx. 24500 Students, KIT is one of the major institutions for research and education. The division “Bio-Geo-Chemical Processes” of the **Institute of Meteorology and Climate Research / Atmospheric Environmental Research (KIT/IMK-IFU)** at Campus Alpin in **Garmisch-Partenkirchen, Germany**, invites applications for:

### **Research associate / Doctoral position (m/f/d):**

#### **Optimizing Nitrogen use efficiency in agricultural production systems**

The announced position is embedded in a BMEL-funded joint research project between KIT and Justus-Liebig-University Giessen. One PostDoc and one doctoral researcher from each institution will join forces to work on a research question of societal relevance, namely the impact of nitrogen (N) losses to the environment due to excessive fertilizer use. This is of importance because N losses have unintended but detrimental effects, such as nitrate pollution of water bodies, biodiversity loss and increased soil emissions of greenhouse gases. The project aims at the reduction of environmental N losses, while maintaining yields of agricultural food and feed.

Mitigating environmental N losses requires understanding and quantification of the various N transformation processes and N loss pathways that shape the terrestrial N cycle. The successful applicant will deploy state-of-the-art methods such as optical gas-phase analytics to determine fluxes of ammonia (NH<sub>3</sub>) and nitrous oxide (N<sub>2</sub>O) from soils, Helium/oxygen incubation to directly determine soil N<sub>2</sub> emission due to denitrification, and <sup>15</sup>N isotope labelling to quantify microbial N turnover processes in soils. These measurements will be conducted both in a conventional farming system and a farming system with increased share of legumes in the crop rotation, so as to study effects of alternative crop rotations on soil N cycling and environmental N losses.

**You** should be motivated to get to the bottom of things, enjoy working outdoors, not lack craftsmanship and have the following **qualifications**:

- University degree (master) in environmental sciences, geoecology, physics, chemistry, or related field
- Understanding of biogeochemical cycles of nutrients in plant-soil systems
- Experience in handling analytical scientific instruments
- Knowledge of stable isotope analysis is a plus
- English language proficiency and ability to write scientific publications
- Strong communication and teamwork skills
- Driver's license class B, since field experiments are partially located at Gladbacherhof of the University of Giessen

#### **We offer**

- International, interdisciplinary and friendly working environment
- Large international network
- Attractive research campus at the foot of Germany's highest mountain
- The gross salary will be equivalent to 65% of the public service TV-L13 (depending on personal requirements) initially for the duration of three years

## **Applications**

Applications should be sent by email to **Dr. Benjamin Wolf** (benjamin.wolf[at]kit.edu) and should include a detailed CV as well as a motivation letter. Specifically, the following points should be addressed

- What skill and abilities would you bring to the team?
- What skills and abilities would you hope to gain from working in this position? What is your specific research interest regarding agriculture and climate change?

We expect to fill the position by the beginning of **October 2020**, but the application will remain open until a suitable candidate has been found.

*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 persons with handicaps will be treated with preference.*