The **Karlsruhe Institute of Technology (KIT)** and its I**nstitute of Meteorology and Climate Research / Atmospheric Environmental Research (KIT/IMK-IFU)** at Campus Alpin in **Garmisch-Partenkirchen**, **Germany**, invites applications for:

PhD position: Nitrogen biogeochemistry of permafrost soils

The division of "BioGeoChemical Cycles" at IMK-IFU has a vacancy for a PhD position to study nitrogen cycling and associated N gas emissions in continuous permafrost soils in Northern China.

The position is for three years starting July 1, 2019 and is funded by the German Science Foundation (DFG) within the Sino-German **NIFROCLIM** project (**Soil nitrogen turnover and nitrous oxide emissions in continuous permafrost landscapes of Northern China in a changing climate)**.

Permafrost soils of the Arctic regions including those situated in Northern China store vast amounts of soil organic carbon and nitrogen. These stocks are at risk to become mineralized and volatilized in a warming climate. While turnover and release of carbon from thawing permafrost soils in a warming climate in form of carbon dioxide and methane have been intensively investigated, much less is known on nitrogen release, which is likely to occur partially in the form of the potent greenhouse gas nitrous oxide (N_2O). NIFROCLIM therefore aims at the quantification of soil N_2O emissions from typical Permafrost landscapes in Northern Asia. We hypothesize that with climate warming the thickness of the active layer increases and more soil N becomes available which is partly lost as gaseous nitrogen. In order to predict N_2O emissions under the auspices of climate warming, it is the goal to achieve a process-oriented understanding of soil N_2O formation and consumption across different permafrost soil types, and across vertical soil profiles including the thawing front of the active layer.
The focus of the PhD project will be on a) field greenhouse gas flux measurements at the soil-atmosphere-interface, b) stable-isotope-based biogeochemical process studies to quantify the underlying N cycling processes, and c) molecular approaches to characterize and quantify the structure, diversity and activity of the soil microbiome involved in N cycling. Field studies are complemented by targeted laboratory experiments under controlled conditions in China and Germany, where the depth of the active layer, the water table and temperatures are manipulated.
Work will be done in close cooperation with the partners from Institute of Atmospheric Physics, Chinese Academy of Sciences (Beijing) and Technical University of Munich (Germany). The PhD position is based at KIT Campus Alpin in Garmisch-Partenkirchen and involves stays in China of ca 2-3 months per year. Further work is foreseen to be conducted in the molecular ecological laboratories of the NIFROCLIM partner Prof. Dr. Michael Schloter in Munich.

Requirements

The candidate should have strong interest in biogeochemistry and molecular ecology of ecosystem N and C cycling as well as practical experience in these fields, preferably including the use of stable isotope labelling for quantification of microbial processes in soils. The candidate should hold a MSc degree (or equivalent) in a relevant discipline. Good lab skills and an aptitude for research expeditions and fieldwork in remote permafrost regions are required.

We offer

State of the art technical research infrastructure, advanced training, close cooperation and interaction with interdisciplinary partners, and a vibrant and friendly, international research environment in the beautiful surroundings of Garmisch-Partenkirchen, Germany. The salary will be equivalent to the public service TV-L13 (65%).

For more information please contact **PD Dr. Michael Dannenmann** (michael.dannenmann(at)kit.edu)

Applications

Applications should be sent by email to PD Dr. Michael Dannenmann (michael.dannenmann(at)kit.edu) by **April 28, 2019.**

Applications must be made in the form of a Declaration of Interest including the following:

- A letter stating your specific interest, motivation and qualifications for the project in question (max. two pages)
- Detailed CV, including personal contact information
- Copies of diplomas, Bachelor as well as Master's degree, including transcript of notes/grades
- At least two signed reference letters. Should your referees wish to send their letters directly to us, please have them use the following e-mail: michael.dannenmann(at)kit.edu mentioning your name and the title of the position in the subject line

All information should be made available before the deadline.

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.