



**INSTITUT FÜR GEOWISSENSCHAFTEN,
ABTEILUNG METEOROLOGIE,
DER RHEINISCHEN
FRIEDRICH-WILHELMS-UNIVERSITÄT BONN**



The Institute for Geosciences, Department of Meteorology, of the University of Bonn invites applications for a

Position as PhD student (75% E13 TV-L)

within the second funding phase of the DFG research unit 2589 „Near-Realtime Quantitative Precipitation Estimation and Prediction“ (RealPEP, <https://www2.meteo.uni-bonn.de/realpep>). RealPEP thrives to achieve significant improvements at all stages along the process chain from Quantitative Precipitation Estimation (QPE), Precipitation Nowcasting (QPN), numerical prediction of quantitative precipitation (QPF) and predicting discharge and potential flash floods in small- to meso-scale catchments (FFP). RealPEP will rely on a multi-sensor data exploitation platform to monitor the precipitation generating atmosphere and tackle urgent science questions to better identify mechanisms that determine the onset, location, intensity, and development of precipitating systems. Developments will be implemented for near-realtime processing in order to be able to mitigate risks to society and ecosystems.

The successful candidate will further develop, in close collaboration with the research unit, a novel precipitation ensemble nowcasting system, which exploits scaling properties of precipitation and precipitation-generating process information derived from polarimetric radars and satellites. A nationwide system based on the spatio-temporal scaling behaviour of precipitation has been implemented already and assessed. In the next step polarimetric radar signatures indicative for potential changes in precipitation generation (e.g. columns of enhanced differential reflectivity, so-called Z_{DR} -columns) will now be exploited for refinements of the approach. A predictive recurrent neural network (PredRNN) will be used to link satellite-based information on cell initiation with their subsequent development monitored by radars.

The position will be based at the Department of Meteorology of Bonn University, Auf dem Hügel 20, Germany, an internationally known facility for radar research operating in cooperation with Forschungszentrum Jülich GmbH two research polarimetric X-band Doppler weather radars.

Requirements

We welcome applicants preferably with a Masters degree in meteorology or physics and a background in radar polarimetry and/or cloud microphysics. Proficient English language skills in oral and written communication are required. It is expected that the candidate closely cooperates with other scientists in the research unit including also colleagues at the German national weather service (Deutscher Wetterdienst, DWD), Forschungszentrum Jülich GmbH, Free University Berlin, and KIT Campus Alpine in Garmisch-Partenkirchen. The position will be offered for 3 years starting as soon as possible.

Applications

Interested candidates should send a CV, a cover letter describing motivation, background, training and research interests, certificates, and the contact information of two persons, which can be asked for references, as a single PDF of less than 5MB to silke.troemel@uni-bonn.de.

Applications are reviewed until the position is filled.

Selection

The selection for the positions will be based solely on merit without regard to gender, religion, national origin, political affiliation, marital or family status or other differences. Among equally qualified candidates, handicapped candidates will be given preference.