UNIVERSITÄT
LEIPZIG

The Leipzig Institute for Meteorology (LIM) at Leipzig University, Germany, invites applications for a

Postdoc Position
Using inverse retrievals for quantifying riming and secondary ice production processes from spectral, polarimetric cloud radar measurements.

Position & project description

In mid-latitudes, most precipitation is generated through the ice phase in mixed-phase clouds, but the exact pathways through which ice, liquid water, cloud dynamics, orographic forcing, and aerosol particles are interacting during ice, snow and rain formation are not well understood. This is particularly true for riming and secondary ice production (SIP) processes that are likely related to the largest uncertainties with respect to quantitative snowfall formation. Filling the gaps in our understanding of SIP and riming is especially crucial for mountainous regions that are particularly vulnerable to changes in precipitation and the water budget such as the ratio between rain and snowfall. CORSIPP (Characterization of orography-influenced riming and secondary ice production and their effects on precipitation rates using radar polarimetry and Doppler spectra) is a research project dedicated to understanding riming and SIP processes in complex terrain. For this, we will operate an innovative simultaneous- transmission-simultaneous-reception (STSR) scanning W-band cloud radar together with a novel in situ snowfall camera for one entire winter season in the Colorado Rocky Mountains as part of the Atmospheric Radiation Measurement (ARM) Surface Atmosphere Integrated Field Laboratory (SAIL) campaign. The Postdoc will be responsible for extending the Passive and Active Microwave radiative TRAnsfer model (PAMTRA) with additional polarimetric variables and state of the art scattering capabilities and develop an advanced Bayesian inverse retrieval based on spectral, polarimetric measurements for quantifying riming and SIP processes. Further, the Postdoc will support deploying a novel optical snowfall instrument and develop a machine learning riming retrieval. The position is funded by the German Research Foundation (DFG, Deutsche Forschungsgemeinschaft) Priority Program "Fusion of Radar Polarimetry and Numerical Atmospheric Modelling Towards an Improved Understanding of Cloud and Precipitation Processes".

Terms of employment

The **full time position** (100% of the TV-L E13 pay scale of the German public sector) is awarded for **2 years and 5 months** on January 1st 2023 but the exact start date is negotiable. We offer a productive and interdisciplinary work environment including comprehensive supervision.

Qualification requirements

Applicants should have a PhD in Meteorology, Physics or a related field. We expect strong interest in atmospheric science, in particular in cloud physics, remote sensing, radar forward operators, microwave single particle scattering properties, and inverse retrieval methods. Previous experience with these subjects would be highly advantageous for the position. Experience in high-level scientific programming for data analysis e.g., with Python is required. Candidates must possess excellent communication skills in written and spoken English.

Applications

Interested candidates should send applications including a motivation letter, a CV, PhD certificates, other qualifications and the contact information of two referees as a single PDF to Dr. Maximilian Maahn

maximilian.maahn[at]uni-leipzig.de

Applications will be accepted until the position is filled; the review of applications starts **August 15th, 2022**.

Selection

The selection for the position will be based solely on scientific 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.