



UNIVERSITÄT  
LEIPZIG



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

### **PhD Position**

#### **Characterising the spatial variability of ice water content in mixed-phase clouds**

The position is funded within the Transregional Collaborative Research Center TR172 on “Arctic Amplification: Climate Relevant Atmospheric and Surface Processes, and Feedback Mechanisms (AC)<sup>3</sup>” ([www.ac3-tr.de](http://www.ac3-tr.de)) by the German Research Foundation (DFG, Deutsche Forschungsgemeinschaft). Within the TR172, LIM together with the collaboration partners (Universities of Cologne and Bremen, TROPOS and Alfred Wegener Institute) aim to better observe, understand, and simulate processes leading to the current drastic climate changes in the Arctic.

#### **Position & project description**

The processes determining spatial variability of ice water content (IWC) in mixed-phase clouds are not sufficiently understood. The project is targeted at better understanding and quantifying these processes. While it is challenging to observe cloud processes directly, the PhD student will advance techniques for quantifying ice water content with low uncertainty from airborne radar measurements. The student will use data collected during the Arctic aircraft campaign ACLOUD in 2017 and data from the upcoming HALO-(AC)<sup>3</sup> in 2022 where collocated in-situ and cloud radar observations are available from aircrafts flying in a tandem formation. For these flights, a Bayesian machine learning algorithm will be developed that can combine radar and in situ observations for obtaining ice water content along a flight track ‘curtain’. This will allow to observe the vertical and horizontal spatial variability of ice water content in clouds with high accuracy and high spatial resolution. Based on the improved observations, the student will link the observed ice water content variability to other microphysical and macrophysical cloud properties such as dominating particle growth process, cloud type, liquid water content, cloud depth, cloud top phase variability, and surface coupling.

#### **Terms of employment**

The funded PhD position (65% of the TV-L E13 pay scale of the German public sector) is awarded for 3 years and is open immediately. We offer a productive and interdisciplinary work environment including comprehensive supervision and integration into the thriving Leipzig Graduate School on Clouds, Aerosol and Radiation (<http://www.lgs-car.tropos.de/>).

#### **Qualification requirements**

Applicants should have a Master in Meteorology, Physics or a related field. We expect strong interest in atmospheric science, in particular in cloud physics, remote sensing, inverse retrievals and polar meteorology. Previous experience with these subjects would be advantageous for the position. Experience in high-level scientific programming for data analysis e.g., with Python is

desirable. Candidates must possess excellent communication skills in written and spoken English.

### **Applications**

Interested candidates should send applications including a motivation letter, a CV, BSc and MSc transcript of records, other qualifications and the contact information of two referees as a single PDF to

maximilian.maahn[at]uni-leipzig.de

Applications will be accepted until the position is filled.

### **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.