

The Institute for Applied Geosciences at the
Technical University Darmstadt invites applications for a



TECHNISCHE
UNIVERSITÄT
DARMSTADT

Postdoc position (m/f/d)

funded within the Transregional Collaborative Research Centre 301

TPChange – The Tropopause Region in a Changing Atmosphere

by the German Research Foundation (DFG, Deutsche Forschungsgemeinschaft).

Within TPChange we aim to improve the understanding of relevant multiscale processes in the tropopause region and to specify their impact on composition, dynamics and ultimately on future climate and climate variability. The postdoc will work in project B02:

Cross-seasonal Investigation Regarding the Composition of atmospheric trace matter Up to UTLS heightS

The CIRCUS (B02) project investigates the seasonal variability and origin of atmospheric refractory trace particles in the Upper Troposphere–Lower Stratosphere (UTLS) above Central Europe. Besides a general aerosol characterization, it targets the differentiation of meteoric particles (MPs) and spacecraft-induced particles (SiPs), which may influence cirrus formation and radiative forcing and its temporal variability in the UTLS. A cross-seasonal balloon sounding program will be conducted from a stationary launch site in Mainz over 18 months, with ~30 launches spanning at least a full seasonal cycle plus a subsequent winter period. This is complemented by an intensive 3-week campaign focusing on frontal uplift events in the polluted Rhine–Main region. The balloon platform is upgraded with high-resolution in-situ instruments (POPS, Partector-2, modified N3) and thermophoretic samplers for aerosol microphysics and composition. Online measurements and offline SEM-EDX analyses are split between JGU (Mainz) and TUDa (Darmstadt). Project leaders are Dr. Ralf Weigel (JGU) and Prof. Konrad Kandler (TUDa). The successful applicant will be employed at TUDa with a focus on aerosol composition. B02 is tightly embedded in the Collaborative Research Centre via modelling support from B01/A03 and campaign integration into TPEx-II. Collaborations extend internationally, including NOAA (US), e.g. for instrument provision.

Requirements

The ideal candidate holds a PhD in meteorology, atmospheric physics, physical chemistry, or a closely related field, and has a strong background in radiative interactions with particles and physical optics and / or electron microscopy. They are familiar with atmospheric thermodynamics, aerosols, and cloud microphysics, and are proficient in Python as well as in the fundamentals of statistics and applied mathematics. Experience working in Linux environments is an advantage. Prior fieldwork experience is highly desirable, and the position requires the willingness to perform regular outdoor measurements. Skills in basic electronics or instrumentation handling are considered a plus.

Employment conditions

The place of employment will be Darmstadt, the work will be distributed as needed between Darmstadt (SEM analysis) and Mainz (balloon operation). The targeted starting date is 1st January 2026 and the project will last until 30th June 2029.

Applications and deadline

Please send applications with reference to the code **B02-PD-TUDa** as one single pdf file to **tpc_jobs@uni-mainz.de**, including a motivation letter, CV, and copies of relevant certificates.

Review of all applications will start on **4th December 2025** and will continue until the position is filled.

For further information, please contact kandler@geo.tu-darmstadt.de.

TPChange offers a comprehensive and structured training for early career researchers. In addition to self-organised activities such as workshops, trainings and a guest program, the successful candidate will have the opportunity, if desired, to pursue international research visits. The consortium conducts an ambitious program to gradually enhance gender equality on all career levels.

The Technical University Darmstadt actively supports equality, diversity and inclusion, and as an equal opportunity employer, the Technical University Darmstadt explicitly encourages applications from women as well as from all others who will bring additional diversity to the university's research and teaching. Applicants with disabilities will be preferentially considered if suitably qualified.

We look forward to your application!