



In the research group *Theory of Atmospheric Dynamics and Climate* at the Institute of Atmospheric and Environmental Sciences of the Goethe University in the city of Frankfurt (<https://frankfurt.de/english/about-frankfurt>) there is a vacancy for a

Postdoctoral Scientist (E13 TV-GU)

to be filled as soon as possible. The initial appointment will be for two years, with the possibility for renewals for subsequent years.

Applicants should have a very good PhD in meteorology, physics, applied mathematics, fluid dynamics, astronomy, or a related field. Expected is a strong background in theory and/or modeling, and the readiness to also work with big computer codes.

The field of research shall be the theory of the nonlinear dynamics of atmospheric gravity waves and their efficient representation in models. The focus will be on mountain waves in the advanced parameterization framework MS-GWaM in the weather-forecast and climate code UA-ICON. The candidate will help developing and code a parameterization for the gravity-wave source due to mountains into UA-ICON/MS-GWaM, use machine learning (ML) for optimizing it in comparison with observations and wave-resolving simulations, and collaborate with other groups on the use of UA-ICON/MS-GWaM for training ML-based gravity-wave parameterizations. Contributions to related theoretical work in the group would be welcome. This work will be embedded in the collaborative project DataWave (<https://datawaveproject.github.io/>) with international partners including Stanford University, New York University, Rice University in Houston, the UK Met Office, the École Normale Supérieure in Paris, and the Max-Planck Institute for Meteorology in Hamburg, involving novel balloon-based observations, model simulations, theoretical work, and ML.

Information on the research group can be found at <http://www.goethe-university-frankfurt.de/45681958/Theory-of-Atmospheric-Dynamics-and-Climate>. Its focus is on scale interactions in atmospheric dynamics, applied e.g. to climate variability or gravity-wave dynamics. Middle-atmosphere dynamics is another field of work. Methods employed are e.g. multi-scale asymptotics, stochastics, and numerical simulations. Inquiries should be addressed to Prof. Dr. Ulrich Achatz (achatz@iau.uni-frankfurt.de).

Applications with the usual documents (CV, diplomas, list of publications, two contacts for a reference letter) should be sent by 30.4.21 to Prof. Dr. Ulrich Achatz, Goethe-Universität Frankfurt, Institut für Atmosphäre und Umwelt, Altenhöferallee 1, 60438 Frankfurt am Main, Germany. Applications will be considered beyond this date until the post has been filled.