

Job Advertisement 2025-06

23.07.2025

At the Leibniz Institute of Atmospheric Physics (IAP), a full-time position (40h/week) in the Department “Modelling of Atmospheric Processes” is available as

Postdoctoral scientist “Coupled ionosphere-thermosphere modelling” (f/m/d)

The position is initially offered for three years with a start date as soon as possible. The employment is according to the collective labour agreement for public service of the federal states (TV-L EG13).

The Leibniz Institute of Atmospheric Physics advances the scientific knowledge of the coupling between space and atmosphere by developing and exploiting expertise in atmospheric physics, instrumentation, analysis and modelling to serve emerging societal needs. The department Modelling of Atmospheric Processes develops the upper-atmosphere version of the general circulation model ICON, i.e. UA-ICON, a state-of-the-art high-resolution model of the neutral atmosphere with a model top at 250 km height. UA-ICON includes a deep-atmosphere dynamical core and supplementary parametrizations for relevant physical processes, such as molecular diffusion, ion-drag and Joule heating, frictional heating and radiation.

The Thermosphere Ionosphere Electrodynamics General Circulation Model (TIE-GCM) is a global 3D numerical model that simulates the coupled ionosphere-thermosphere system from ~97 to ~600 km height. It self-consistently solves the fully coupled nonlinear, hydrodynamic, thermodynamic and continuity equations of the neutral gas, the ion and electron energy equations, the O⁺ continuity equation and ion chemistry, and the neutral wind dynamo. The lower boundary at the mesopause allows conducting controlled experiments to delineate the effects of lower-atmospheric forcing.

To achieve this, the successful candidate will set up TIE-GCM to be driven with output of the neutral atmosphere dynamics and chemistry of UA-ICON. A requirement will be to install TIE-GCM at the supercomputer of the German Climate Computing Centre, where UA-ICON is running. Scientific studies focusing on the ionospheric electric current systems including comparisons with observations will be conducted in close collaboration with the working group Satellite Data Analysis.

Your Qualifications / Experience:

- A PhD in Physics, Geoscience or a related field
- Proven expertise in numerical modelling using super computing clusters
- Excellent knowledge of atmospheric physics
- Proficiency in English as a working language
- A concept for best practices regarding code documentation
- Strong communication skills

What we offer:

- an attractive working place near the Baltic Sea
- modern computational and experimental facilities
- engagement in an international work environment
- participation in the company pension scheme (VBL)
- employment relationship in accordance with the provisions of the Collective Labour Agreement for Public Service of the Federal States (TV-L)
- flexible working hours and mobile working within the framework of the applicable regulations
- Pedelec bike leasing options are supported by the institute

Who we are: Our mission is to advance the scientific knowledge of the mesosphere and lower thermosphere by developing and exploiting expertise in atmospheric physics, instrumentation, analysis and modelling to serve emerging societal needs – such as questions regarding atmospheric change. At the regional level, we maintain a close partnership with the University of Rostock and play an integral role in the teaching program of its Institute of Physics. Nationally and internationally, we are well connected within the research community. As member of the Leibniz Association, we are committed to being a modern, innovative employer that values family friendliness, equal opportunities, and flexibility.

Interested?

Please send your application as one combined pdf with complete, informative documents, including

- motivational letter
- curriculum vitae
- educational degree certificates

- copy of certificates, possibly testimonies and references

under indication of the keyword **2025-06**

to: personal@iap-kborn.de

Applications received before Sep 15, 2025 will receive full consideration, but the position will remain open until filled. Unfortunately, application and travel costs cannot be covered by the state of Mecklenburg-Vorpommern. By submitting your application, you consent to the processing of your personal data for the purpose of the application process.

Equal Opportunities: We are committed to a family-friendly personnel policy and actively promote diversity and equal opportunities. We particularly encourage qualified women to apply. Applicants with disabilities will be given preference if they are equally qualified.

Contact: For further information, please contact Prof. Dr. Claudia Stephan (CCStephan@iap-kborn.de) or inform yourself under www.iap-kborn.de.