Stellenbezeichnung: Postdoc in km-scale modeling of Earth-like exoplanetary atmospheres

The University of Vienna is a community of over 10,000 individuals, including approximately 7,500 academic staff members, who passionately pursue answers to the profound questions that shape our future. Fueled by curiosity and a deep sense of duty, they contribute invaluable insights to research and teaching, enriching our society. Are you inspired and driven by the desire to make a meaningful impact? We are currently seeking a

Postdoc in km-scale modeling of Earth-like exoplanetary atmospheres

53 Faculty of Earth Sciences, Geography and Astronomy
Job vacancy starting: | Working hours: 40,00 | Classification CBA: §48 VwGr. B1 lit. b (postdoc)
Limited contract until:
Job ID: **2932**

The research team “Climate Dynamics and Modeling” led by Prof. Aiko Voigt is part of the Department of Meteorology and Geophysics. We integrate innovative research, excellent teaching, and accessible outreach. One of our priorities is to find answers to fundamental questions in climate science, another one is to explore how our research can benefit practical applications. While we study a variety of topics ranging from climate change to Earth-like extrasolar planets, all of our activities are related to clouds, radiation and the circulation of the atmosphere. Climate models form the backbone of our work. This includes models that simulate the global climate system at kilometer-scale resolution.

We invite you to visit the website of our research team: https://klimadynamik.univie.ac.at/.

Your personal sphere of action:

We are looking for a postdoc to join our team. You will work in the recently funded FWF project “CloudEE: A less Cloudy View on Earth-like Exoplanets” that aspires to lift exoplanet modeling to a new level. In CloudEE, you will perform global atmospheric simulations of the Earth-like exoplanet Trappist-1e with explicit deep convection and improved cloud processes. Trappist-1e is considered one of the most promising candidates for a habitable planet. Together with Aiko Voigt, you will adapt the recently developed ICON-Sapphire model that forms the physical basis of digital twins of Earth to the atmosphere of Trappist-1e. You will then run and analyze simulations with horizontal grid spacings of 5 km to study the climate and habitability of Trappist-1e, with an emphasis on the role of clouds. The simulations will be linked to observations through synthetic spectral observations with the NASA Planetary Spectrum Generator.

CloudEE will serve as a blueprint that will spearhead applications of global kilometer-scale models for exoplanet studies and will foster collaborations between climate and exoplanet experts. As such, the position offers the chance for a young researcher to take a leading role in this dynamic field and make sure that the rapid progress in modeling Earth’s climate is also benefiting the search for a second Earth.

The position is available as soon as possible; the start date is flexible to accommodate the needs of the successful candidate. The position is limited to 2 years.

Your future tasks:

- Adapt the ICON model to Trappist-1e, with support from Aiko Voigt and other team members
- Run and analyze the ICON simulations to characterize the climate of Trappist-1e, the role of clouds, and the prospects for observations
- Comparison to previous low-resolution work from the THAI model intercomparison project
- Disseminate results through peer-reviewed publications and presentations at conferences
- Contribute to applications for HPC resources (e.g., at VSC and EuroHPC JU)
- Establish and foster collaborations, e.g., with the ICON and THAI modeling consortia
- Contribute to the vibrant social and intellectual culture of the research team and the department
- If wanted, the position offers possibilities for teaching and student supervision

What we expect from you:

- A Ph.D. in climate science, atmospheric sciences, meteorology, or a related field
- Profound experience with climate models or numerical weather prediction models on high-performance computers; experience with high-resolution models is a plus
- Strong skills in programming, data analysis; skills in software management are a plus
- Excellent communication skills in English
- Creativity and curiosity, as well as the ability to work toward deadlines
- Willingness to work interdisciplinary and collaborate with other actors at the University of Vienna and beyond, for example, with the Department of Astrophysics of the University of Vienna

What we offer:

- An exciting research topic at the forefront of climate modeling and exoplanet science, with close interactions between climate science and astrophysics
- Access to state-of-the-art computing facilities
- Work-life balance: you have flexible working hours and can also work remotely (part-time if necessary by arrangement)
- Inspiring and supportive working atmosphere: you will be part of an international team in a healthy and fair working environment with an excellent research infrastructure
- Training and coaching: we offer you the opportunity to develop your skills on an ongoing basis
- Fair salary plus health care and social benefits: the basic salary of EUR 4,752.30 (14 times per year) will be increased if we can credit professional experience
- Equal opportunities for everyone: we look forward to diverse personalities in our team
- The University of Vienna aims to become carbon neutral until 2030: we fully support low-carbon options for traveling

It is that easy to apply:

- A curriculum vitae including publications
- A description of your research interests and motivation for the position (max 1 page)
- Names and contact details of 2 persons that, upon request, can provide a recommendation letter
- Applications need to be submitted as one PDF to aiko.voigt@univie.ac.at.

Review of applications will start on Sep 2, 2024 and will continue until the position is filled.

If you have any questions, please contact:

Aiko Voigt
aiko.voigt@univie.ac.at

We look forward to new personalities in our team!
The University of Vienna has an anti-discriminatory employment policy and attaches great importance to equal opportunities, the advancement of women and diversity. We lay special emphasis on increasing the number of women in senior and in academic positions among the academic and general university staff and therefore expressly encourage qualified women to apply. Given equal qualifications, preference will be given to female candidates.

University of Vienna. Space for personalities. Since 1365.

Data protection
Application deadline: