Job Announcement

The University of Potsdam was founded in 1991 and has firmly established itself within the scientific landscape and developed into an outstanding economic factor and growth engine for the region. The University of Potsdam excels in acquiring third-party funds, has received multiple teaching awards, has a very service-oriented administration, and has been honored several times for its family-friendly culture. About 21,000 students and 3,000 employees study and work at three campuses – Am Neuen Palais, Griebnitzsee and Golm – at one of Germany’s most scenic institutions of higher education.

The Faculty of Science, Institute of Physics and Astronomy, Computational Physics at the University of Potsdam invites applications for the following position limited to three years, which will be filled as soon as possible:

Academic Staff Member
Postdoc in Computational Physics/Climate Physics
Convective Self-Organization and Extreme Events
ID no. 407/2023

The successful candidate will work 40 hours per week (100%). The position is classified within remuneration group 13 of the collective wage agreement among the German states (TV-L). The fixed term of employment is in accordance with Section 2 subsection 1 of the German Act on Limited Scientific Contracts (Wissenschaftszeitsvertragsgesetz or WissZeitVG). If necessary, an extension is possible if personal and legal requirements are met.

Your Field of Work/Research scope

**Background:** Improving the understanding of climate processes, such as those leading to extreme events or irreversible transitions, is one of the key scientific challenges of the current time. The climate physics working group seeks to uncover fundamental feedback processes within Earth’s climate system. A special focus is the self-organization of convective-type cloud and precipitation, in particular deep convective thunderstorm clouds, which are abundant in the tropics and during mid-latitude summer. Thunderstorm clusters can give rise to extreme precipitation and conditions of storminess, such as in mesoscale convective systems (MCS). These are currently not well predicted by state-of-the-art climate models but impact strongly on human populations. A current shortcoming is that the interaction between convective thunderstorm cells is not sufficiently described by climate models. By better capturing the interaction mechanisms, also the emergent larger-scale organization can be modeled more realistically.

**Methodology:** The working group makes use of high-resolution numerical models to simulate the fluid dynamics and thermodynamics of Earth’s atmosphere. We use approaches from nonequilibrium statistical physics and complex systems research, such as agent-based modeling or cellular automata, to capture emergent aspects of the interacting system. We aim to build simplified conceptual models and thereby gain improved process and causal understanding. In addition, we make use of advanced data analysis techniques, including machine learning, e.g., to segment satellite observations or high-dimensional simulation data.

**Opportunities:** We are seeking a highly motivated and dedicated academic staff member to join our interdisciplinary team of researchers. You will be working closely with the principal investigator and the research team to conduct curiosity-driven research. You will be able to...
collaborate within the lively climate research community in Potsdam and Berlin and will have the option of international exchange, e.g., within a temporary research visit. You may become engaged within the CIEWS international MSc program within your teaching activities. An observational pilot field campaign is currently underway, which you may optionally get involved in.

**The Scope of Your Responsibilities:**
- Independent scientific research in atmospheric self-organization and relevant climate feedback processes
- Participation in B.Sc., M.Sc. or Ph.D. student supervision
- Preparation of scientific publications for peer-reviewed journals and dissemination at scientific conferences
- Preparation of third-party funding proposals

Further scientific qualification (habilitation) is possible. At least one-third of working hours is available for in-depth scientific work.

The teaching load is based on the currently valid requirements of the Teaching Obligations Ordinance (LehrVV) of the State of Brandenburg and the regulation for calculating teaching load that was passed by the Senate of the University of Potsdam. This position is assigned to the group of academic employees “qualification possibility (habilitation)”.

**Your Qualifications:**
- MSc/Doctoral degree in a quantitative field, e.g., physics, environmental science, mathematics or engineering
- Previous experience with climate or fluid dynamics models and distributed computing and/or mathematical modeling, documented by a relevant publication record
- Proficiency in at least one state-of-the-art programming language, e.g., python, c/c++, julia, fortran, and the willingness to read and modify existing software, e.g., climate simulations written in fortran
- Strong command of the English language, German language skills are welcome
- Self drive and ability to work both independently and within a research team
- Potential interest in a field campaign on tropical climate (optional)

We are also looking for the following competences:
- strong personal drive and a keen interest in complex systems, especially the climate system
- enthusiasm to work in a research team
- excellent verbal and nonverbal communication skills
- interest in traveling and interacting with other researchers in an interdisciplinary environment

**What We Offer:**
As a university, we combine the developmental strength of a teaching and research institution with the attractive working conditions of the public sector. The University of Potsdam is a reliable employer that supports its employees with a variety of offers and benefits:
- Develop yourself and your professional as well as interdisciplinary competencies in various continuing education and networking opportunities offered by the University of Potsdam.
- All locations have good transport connections. They can receive a monthly subsidy for the public transport job ticket and use campus bicycles.
- Benefit from a company pension plan, a special annual payment and asset-building services.
- Take advantage of the diverse offers from occupational health management as well as university sports.
- To improve work-life balance, the University of Potsdam offers its employees flexible working hours and proportional home office hours. You have 30 vacation days per year and are
also exempt from work on December 24 and 31. Our service for families can advise you on issues relating to the reconciliation of work and family life.

You can find more information about working at the University of Potsdam at https://www.uni-potsdam.de/de/arbeiten-an-der-up/arbeitgeberin/uebersicht

For more information about this position, please contact Prof. Dr. Jan O. Haerter by email: jan.haerter@uni-potsdam.de

**Your Application**

Your application should include (i) an academic CV including a list of three professional references, (ii) transcripts of B.Sc. and M.Sc. courses, (iii) a 1-2 page research proposal. Please send us your application by the deadline of October 1, 2023 and provide the ID no. 407/2023, by email to jan.haerter@uni-potsdam.de

The University of Potsdam values the diversity of its community and pursues the goals of equal opportunity regardless of gender, nationality, ethnic and social origin, religion/belief, disability, age, and sexual orientation and identity. Applications from abroad and from persons with an immigrant background are expressly encouraged. The university strives for a balanced gender ratio in all employment groups; in areas where women are underrepresented, women are given preference in case of equal suitability (Section 7 paragraph 4 of the Brandenburg Higher Education Act). People with disabilities are given preferential consideration in cases of equal qualifications. In aptitude tests and selection interviews, individual disadvantage compensations are granted that are appropriate to their disability. If a person with a disability would like to make use of individual disadvantage compensation, please state this in the application letter.

Potsdam, 31.08.2023