



UNIVERSITY
OF COLOGNE

Faculty of Mathematics and Natural Sciences

PhD Position (f/m/x) on Geophysical Imaging in Antarctica

Institute of Geophysics and Meteorology



Photo: Thomas Jössel

We are one of the largest and oldest universities in Europe and one of the most important employers in our region. Our broad range of subjects, the dynamic development of our main research areas and our central location in Cologne make us attractive for students and researchers from around the world. We offer a wide range of career opportunities in science, technology, and administration.

We invite applications for a funded (36 months) PhD position (f/m/x) as part of the German Research Foundation's priority program 'Arctic Research with Comparative Investigations in Arctic Ice Areas'. In this project, we aim to better understand and characterize the crust and subglacial sediments under the Antarctic Ice sheet by means of electromagnetic observations and in combination with seismic and potential field data, with implications for the long-term Ice Sheet dynamics. Specifically, the successful candidate will process and model a new Magnetotelluric data set measured near the grounding zone of the Ekström Ice Shelf. The position is located at the University of Cologne, including close collaboration and planned research visits to partners at the Alfred Wegener Institute for Polar Research, the GFZ German Research Centre for Geosciences and the University of Swansea.

YOUR TASKS

- » Estimate and validate broadband magnetotelluric transfer functions from new observations from the ice shield in East Antarctica
- » Develop an electrical conductivity model of the subglacial sediments and the crust by inverting the Magnetotelluric observations
- » Interpret the model in combination with seismic, geodetic and potential field data from the area
- » Analyse results and understand implications for the long-term ice shield evolution, processes at the grounding line and heat transport within the crust
- » Help with the planning of future geophysical campaigns in Antarctica
- » Present findings at the project meetings, workshops and international meetings
- » Publish results in peer-reviewed scientific journals

YOUR PROFILE

- » Completed Master's degree (or equivalent) in Geophysics, Physics, Earth or Planetary Sciences, or a related field
- » Strong background in at least one, preferably several of the following topics: solid Earth geophysics, electromagnetic induction, inverse problems, computational methods, polar research

- » Proven programming skills in Python (and/or C++). Knowledge of the modern research technology stack (e.g. Linux/Git/Jupyter/Paraview/MPI) is an advantage
- » Demonstrated ability to work in an international team and excellent communication and writing skills in English. Knowledge of the German language is an advantage.
- » Excellent analytical and problem-solving skills, with a passion for an interdisciplinary Earth science research

WE OFFER

- » Interdisciplinary research project
- » A diverse working environment with equal opportunities
- » Support in balancing work and family life
- » Extensive advanced training opportunities
- » Occupational health management offers
- » Flexible working time models

The University of Cologne promotes equal opportunities and diversity. Women will be considered preferentially in accordance with the Equal Opportunities Act of North Rhine-Westphalia (Landesgleichstellungsgesetz – LGG NRW). We also expressly welcome applications from all suitable candidates regardless of their gender, nationality, ethnic and social origin, religion, disability, age, sexual orientation and identity.

The position is available for 36 months starting from 01.10.2024 on a part-time basis (29,87 hours per week). If the applicant meets the relevant wage requirements and personal qualifications, the salary will be based on remuneration group 13 TV-L of the pay scale for the German public sector.

Please apply online with proof of the required qualifications without a photo under: <https://jobportal.uni-koeln.de>. The reference number is Wiss2407-26. The application deadline is 01.09.2024. For further inquiries, please contact PD Dr Alexander Grayver (agrayver@uni-koeln.de).



HR EXCELLENCE IN RESEARCH