GFZ

Helmholtz-Zentrum
POTSDAM

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DEUTSCHES
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The Helmholtz Centre Potsdam – GFZ German Research Centre for Geosciences is the national research centre for Earth sciences in Germany. With approx. 1260 employees (including visiting scientists), the GFZ is conducting interdisciplinary research on the “System Earth” and the influence of humans on the planet. As a member of the Helmholtz Association, it is part of Germany’s largest science organization.

For Section 2.3 "Geomagnetism" we invite applications for a

PhD Position in Geomagnetism

Job Vacancy No. 2650

Bayesian inversion for a global lithospheric magnetic field model based on satellite magnetic field measurements

The position is a 3 years PhD position and is funded in the framework of the DFG (German Research Foundation) priority program "Dynamic Earth", SPP1788: https://www.spp-dynamicearth.de/ (https://www.spp-dynamicearth.de/)

Studying Earth’s lithospheric magnetic field is an effective way to infer information about the composition, structure and tectonic evolution of Earth's lithosphere. The aim of this project is to develop a global lithospheric magnetic field model that will be broadly used by the scientific community. It will be based on satellite magnetic field measurements from the CHAMP and Swarm missions and supported by data from the AMPERE satellite project. Particular weight will be placed on methodological advances concerning two current challenges in lithospheric magnetic field modeling: i) how to reduce leakage of non-lithospheric magnetic field signal into the model and ii) how to achieve a robust estimate of the model's uncertainties. This high-performance model is expected to lead to significant advances in the study of Earth’s magnetic environment and Earth’s lithosphere.

The PhD candidate will be co-supervised in the fields of geomagnetism, satellite data processing and inversion techniques by scientists of GFZ and University of Potsdam. Applicants should upload a letter of motivation, a CV and a copy of the certificate (Master's degree or equivalent) that qualifies them for a PhD position and ask two referees to send a letter of recommendation to foteini@gfz-potsdam.de (mailto:foteini@gfz-potsdam.de) by the deadline.

Your responsibilities:

- explore the various spatiotemporal characteristics of Earth's magnetic field, both of internal and external origin
- analyze measurements from the Swarm, CHAMP and AMPERE satellites in order to best separate the magnetic signal of lithospheric origin from non-lithospheric contributions
- develop a Bayesian inversion technique that will yield a global lithospheric magnetic field model associated with model uncertainties
- present the results at international conferences
- publish the results in scientific, peer-reviewed journals

Your qualifications:

- Master's degree (or equivalent) in physics, geophysics, mathematics or engineering
- strong background in mathematics and signal processing is considered an advantage
- good programming skills
- proficiency in written and spoken English

- passion for research, self-motivation, critical, rigorous and creative way of thinking, good communication and collaboration skills

Starting date: 01/10/2019
Fixed term: 36 months
Salary: This position has been assessed as being salary group 13 according to “TVöD Bund (Tarifgebiet Ost)”. The salary group will be determined by the conditions of the collective wage agreement and the appropriate personal qualifications.
Working hours: 75% (currently 29.25 h/week)
Location: Potsdam

You can expect a very diverse and challenging job in an international work environment that is characterized by exciting research projects. The compatibility of work and family life is of particular concern to the GFZ. Therefore, it offers the opportunity for flexible working time and workplaces. Moreover, there is a kindergarten located on the research campus.

The GFZ is a partner with Geo.X (www.geo-x.net), and as such it is well connected with other geoscience institutions in Potsdam und Berlin. Geo.X forms the largest regional cluster of geoscientific expertise in Europe and offers excellent opportunities for cooperation and development.

Please submit your application online by **30th June 2019** using the "Apply" button.

Equal opportunity is an inherent part of our personnel policy. Therefore we are particularly welcoming applications from qualified women. Severely disabled persons will be given preferential treatment in the case of equal qualification.

We will retain your application documents for at least three months, even if the application is not successful.

If you have any questions regarding this job offer, please feel free to call Ms Buge at +49 (0) 331-288-28878.