

The **Institute for Geophysics and Meteorology** at the University of Cologne (IGMK) invites applications for a

Post-doctoral position Development and application of a Statistic-Dynamic Aeolian-Biogenic Model

starting after September 1st, 2016 with a weekly working time of 39,83 hours (100% position). The initial contract is limited for 4 years. It is a qualification body with the possibility of promotion. The salary is based on the German E13 TV-L scale if terms and conditions under collective bargaining law are fulfilled.

We offer a productive and interdisciplinary working atmosphere including several possibilities for career development.

The position is related to the Collaborative Research Center SFB 1211 - "Earth - Evolution at the Dry Limit", which was recently approved by the German Science Foundation. Within the SFB 1211, IGMK together with the collaboration partners (Universities of Aachen, Bonn and Cologne, Jülich Research Center) will work at the intersection of landscape evolution and biological evolution – which are mutually dependent. The researchers will focus on dry and extremely dry regions because processes of biological activity unfold more slowly in these regions, which makes them easier to identify. In this phase, the focus will be on the Atacama desert.

Requirements

We expect strong interest in atmospheric science with specialization in global/regional modelling of the atmosphere. Applicants should have a Master-of-Science-equivalent university degree in meteorology, geophysics, physics or mathematics and preferably hold a PhD degree. Experience in scientific programming, preferably in a UNIX/LINUX environment, and knowledge in computational modelling is highly desirable. Candidates must possess excellent communication skills both in written and spoken English.

Detailed project description

Development and application of a Statistic-Dynamic Aeolian-Biogenic Model

Aeolian processes on geological time scales are closely related to both climate change and bio-ecological evolution. In the Atacama desert where fluvial/glacial processes are absent, aeolian processes virtually govern the evolution of the land surface and the proxies of planetary geomorphology. On the other hand, land-surface conditions (e.g. soil wetness, vegetation cover and surface crust) strongly influence the rate of aeolian transport. The central task of our research unit is to develop a conceptual framework for the investigation of interactions between aeolian and biological processes in the Atacama desert and to develop for the first time a numerical system for modeling such interactions on geological time scales.

The postdoc will perform high-resolution atmospheric simulations over the Atacama with the Weather Research and Forecast (WRF) regional model for present-day and paleoclimate conditions. Those simulations will be integrated within a Statistic-Dynamic Aeolian-Biogenic Model (SDABM). The dynamical core will consist of existing atmospheric and aeolian modules, as well as a new biogenic module to be developed in parallel within our research group. The statistical component consists in the identification of climate modes and frequency via Empirical Orthogonal Functions, the dynamic core simulations for each climate mode, and the recombination of modes to determine the climatologies. The simulations will be extensively compared against modern and paleoclimate data from the literature and from the field and remote sensing campaigns within SFB 1211.

Applications

Interested candidates should send a CV; a cover letter describing background, training and research interests; certificates; and the contact information of two referees as a single PDF to meteo-jobs@uni-koeln.de. Please clearly indicate which position you apply for. Review of applications will begin immediately and continue until **August 15, 2016**. The selected candidate is expected to start as soon as possible.

Selection

The selection for the position will be based solely on merit without regard to gender, religion, national origin, political affiliation, marital or family status or other differences. Among equally qualified candidates, handicapped candidates will be given preference.

The University of Cologne is an equal opportunities employer. Applications of women are thus especially encouraged; applications of disabled persons will be given preferential treatment to those of other candidates with equal qualifications.

For more information contact

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