

The **Computational Geosciences group at the University of Cologne** invites applications for a

Research Assistant / PhD position

Discrete-Element-Simulations of wind-blown sand and dust emission

starting as soon as possible. The position is offered within the research project “Particle-based simulation of dust emission”, funded by the German Research Foundation, and is initially for 3 years with a weekly working time of 29.87 hours (75% position). The salary is based on the German TV-L E13 scale if terms and conditions under collective bargaining law are fulfilled.

Job description:

The candidate will develop a numerical tool, based on the Discrete-Element-Method (DEM), to simulate the transport of wind-blown sand particles along the surface and the concatenated emission of dust particles. To this end, an existing DEM open-source software for massive parallel DEM simulations of granular systems (LIGGGHTS/LAMMPS) shall be extended to incorporate a stochastic model for inter-particle cohesive forces as well as a description of hydrodynamics to model particle-fluid interactions. The candidate will collaborate closely with the Atmospheric Modeling group of the Institute of Geophysics and Meteorology, as well as with the Granular Matter group of the Physics Department and the DLR / Cologne. Moreover, the candidate will have the opportunity to actively participate in wind-tunnel or field experiments to validate the numerical simulations.

Requirements:

We expect strong interest in computational and physical modeling of granular systems and particle transport in turbulent surface flows. Applicants should have a Master-of-Science-equivalent university degree in physics, mathematics, computer sciences, geophysics or meteorology, and strong background in programming with C++ and MPI. Experience with DEM simulations, and in particular with LIGGGHTS/LAMMPS, is of great advantage. Candidates must have excellent communication skills both in written and spoken English.

The University of Cologne is an equal opportunity, affirmative action and diversity supporting employer. Handicapped persons will be given preference to other equally qualified applicants. Applications from women are particularly welcome and will be preferred in case of equal qualification and capacity.

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 eric.parteli@uni-koeln.de. Please clearly indicate which position you apply for. Review of applications will begin **after April 30, 2017** and continue until the position is filled.

For further information contact:

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Web: <http://www.geosciences.uni-koeln.de/parteli.html>