

Helmholtz-Zentrum Dresden-Rossendorf e.V.



With cutting-edge research in the fields of ENERGY, HEALTH and MATTER, around 1,500 employees from more than 70 nations at Helmholtz-Zentrum Dresden-Rossendorf (HZDR) are committed to mastering the great challenges facing society today. Two institutes of HZDR, the Helmholtz Institute Freiberg for Resource Technology (HIF) and the Institute of Resource Ecology (IRE) are developing innovative science and technologies to contribute to our resource management in society. The HIF is improving extraction and recycling of mineral and metal-bearing raw materials in an environmentally friendly way and the IRE is conducting research on improving safety for long term nuclear waste repositories. For both fields, a sound knowledge of mathematical modelling is the basis to upscale research findings from lab experiments to nature scale systems. The Department of Modelling and Evaluation of the HIF is looking for a PhD Student (f/m/d) Microstructure modelling and upscaling. This is a joint position with the Department of Actinide Thermodynamics of the Institute of Resource Ecology.

PhD Student (f/m/d) in microstructure modelling and upscaling

City: Freiberg; Starting Date: 01/02/25; Duration: 36 months; Remuneration: TVöD-Bund; Reference number: 2024/157; Closing date: 28/11/24

Working field

- Development of methods for the mathematical and computational modelling of rock microstructure
- Learning or fitting of microstructure models from measured data
- Methods for upscaling models for usage in reactive transport codes
- Preparation of publications to scientific journals and presentation of results in conferences
- Cooperation within the two supporting departments, institutes and the center

Requirements

- Completed university studies (Master/Diploma) in the field of Applied Mathematics, Statistics, Mathematical Geosciences, Geophysics or related field
- Understanding of stochastics, ideally knowledge of stochastic geometry, geostatistics and/or spatial statistics
- Basic knowledge of (geo)chemical processes will be of advantage
- Good interdisciplinary communication skills
- Excited about working as a team player in a group of multidisciplinary scientists
- Structured and solution-oriented working style, analytical thinking and aboveaverage commitment
- Good programming skills in a high-level data science language (e.g. R/python/julia)
- Sufficient programming skills in a low-level programming language (e.g. C/C++/Fortran/java...)

- Excellent English skills

What We Offer

- A vibrant research community in an open, diverse and international work environment
- Scientific excellence and extensive professional networking opportunities
- A structured PhD program with a comprehensive range of continuing education and networking opportunities - more information about the PhD program at the HZDR can be found here
- Salary and social benefits in accordance with the collective agreement for the public sector (TVöD-Bund) including 30 days of paid holiday leave, company pension scheme (VBL)
- We support a good work-life balance with the possibility of part-time employment, mobile working and flexible working hours
- Numerous company health management offerings
- Employee discounts with well-known providers via the platform Corporate Benefits
- An employer subsidy for the "Deutschland-Ticket Jobticket"

Application

We look forward to receiving your application documents (including cover letter, CV, diplomas/transcripts, etc.), which you can submit via our online-application-system: <https://www.hzdr.de/db/Cms?pNid=490&pLang=en&pOid=73137>

More information at <https://stellenticket.de/188946/>
Offer visible until 28/11/24

