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. At the Helmholtz Institute Freiberg for Resource Technology (HIF), innovative technologies for the circular economy are developed to provide and use mineral and metal-bearing raw materials more efficiently and to recycle them in an environmentally friendly way. The Department of Modelling and Evaluation is looking for a

PhD Student (f/m/d) to work in Modelling ore fabrics along comminution to predict liberation

City: Dresden; Starting date (earliest): 15/08/25; Remuneration: TVöD-Bund; Reference number: 2025/88; Closing date: 22/06/25

Working field

Develop a methodlogy to predict breakage and liberation, including:
-Develoment and implementation of parametric, fast preferential breakage models, e.g. with stochastic tessellations
-Development and implementation of estimation methods for the model parameters, e.g. with machine learning or statistical methods
-Lab work and collection of samples and structured metadata along lab scale comminution experiments and validation of modelling results
-Evaluation of the forecasting capabilities of the methodology integrated within a flowsheet simulation with flotation
-Presentation of own results at international conferences, in peer-reviewed journal publications and in a PhD thesis
-Cosupervision of related MSc topics and cooperation with other associated PhD topics is highly encouraged

Requirements

-Completed university studies (Master/Diploma) in STEM fields with strong background on process modelling, applied mathematics, process engineering, geometallurgy or related field
-Experience in either stochastics, deep learning or minerals processing is needed
-Structured and solution-oriented working style, analytical thinking and above-average committment
-Excited about working in interdisciplinary teams in an international environment
-Very good English communication skills, written and oral
-Very good programming skills in at least one high level language (e.g. Julia, Python, R) are a requirement
-Good programming skills in a low level language (e.g. C/C++, Fortran) will be considered advantageous

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=74949

More information at https://stellenticket.de/195187/LUH/
Offer visible until 22/06/25