

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. The Institute of Radiation Physics conducts research for states of matter under extreme conditions and in very small dimensions. The Department of Department Laser Particle Acceleration is looking for a

Postdoc (f/m/d) Representation-Learning for Foundation Models and Latent Modeling of large-scale Laser-Plasma Simulations

City: Dresden; Starting date (earliest): 01/09/26; Duration: 24 Months;

Remuneration: TVöD-Bund 13; Reference number: 2026/79; Closing date: 12/07/26

Tasks

- Design and training of foundation models and latent surrogate models for problems in plasma physics
- Continued development and performance analysis of a distributed in-transit Trainingsworkflows

Requirements

- Completed PhD in the field of Physics (Computational Physics or related)
- Experience in adaptive problem-solving and critical analysis of approaches and results (scientific method)
- Several years' experience in designing and training modern neural network architectures, including transformers, vision transformers and diffusion models
- In-depth knowledge and practical experience in the field of numerical simulations in physics or related disciplines
- Advanced Programming Experience in one modern languages like Python, C++ or Julia and experience in at least one other
- Knowledge of modern deep learning frameworks (e.g. pyTorch, Tensor-flow, Jax, ...)
- Experience working in Linux shell/cluster environment and on shared resources
- Experience of collaborative software development tools: git, gitlab/github, CI
- Knowledge about Software Architecture
- An independent, analytical and scientifically rigorous approach to work
- An interest in interdisciplinary research and collaboration with academics from a range of disciplines

What we offer

- A vibrant research community in an open, diverse and international work environment

- Scientific excellence and extensive professional networking opportunities
- 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)
- Depending on the personal qualifications, the candidate may be classified in salary group 13 according to TVöD-Bund
- 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=77914>

More information at <https://stellenticket.de/204902/TUD/>
Offer visible until 12/07/26

