## Helmholtz-Zentrum Dresden-Rossendorf e.V.

**HZDR**
HELMHOLTZ ZENTRUM
DRESDEN ROSSENDORF

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 Center for Advanced Systems Understanding (CASUS) is a German-Polish research center for data-intensive digital systems research. The Department of AI4Quantum – Machine Learning for Quantum Simulation and Computing is looking for a

# PhD Student (f/m/d) in Quantum Algorithms for Fluid and Environmental Flow Modelling.

City: Görlitz; Starting date (earliest): 01/03/26; Duration: 3 years; Remuneration: TVöD Bund; Reference number: 2026/14; Closing date: 28/01/26

## Working field

- Development and implementation of numerical and algorithmic methods for the simulation of fluid-dynamical or environmental systems
- Experiences with research on quantum and hybrid quantum–classical algorithms for solving partial differential equations
- Implementation, testing and benchmarking of computational methods on high-performance computing and quantum computing platforms
- Analysis and validation of results using classical reference models and simulation data
- Documentation of research results and contribution to scientific publications and project reports

## Requirements

- Completed university studies (Master/Diploma) in the field of Physics, Applied Mathematics, Computer Science, Computational Modeling and Simulation or related field
- Numerical solution of partial differential equations
- Scientific computing / high-performance computing
- Algorithmic modeling and simulation
- Fundamentals of machine learning or quantum computing
- Ability to work independently and in a structured manner
- Strong analytical thinking and problem-solving skills
- Willingness to collaborate in interdisciplinary research teams
- Good written and oralommunication skills
- Motivation to engage in scientific research and method development
- Programming skills in Python and/or C/C++
- Experience with scientific software tools and numerical libraries
- Familiarity with Linux-based computing environments

- English language proficiency (written and spoken)

**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=76350

More information at https://stellenticket.de/200622/HTWB/
Offer visible until 28/01/26

**Stellenticket**