

Postdoctoral researcher position (f/m/x) in “Data science for dislocation-based plasticity” within ERC Starting Grant “D

Online seit 29.10.2024 | 2024-10-29-897661 | Wissenschaftliche:r Mitarbeiter:in

Stellenbeschreibung

The Interdisciplinary Centre for Advanced Materials Simulation (ICAMS) is looking for a **Postdoctoral researcher position (f/m/x) in “Data science for dislocation-based plasticity” within ERC Starting Grant “DISCO-DATA”, full time, TVL E13, for 2.5 years**

The Interdisciplinary Centre for Advanced Materials Simulation (ICAMS) is a research centre at the Ruhr-Universität Bochum, focusing on the development and application of multi-scale simulation tools for advanced materials. ICAMS is embedded into a network of national and international collaborations. Researchers and students benefit from this top international and interdisciplinary environment. The ERC Starting Grant “DISCO-DATA” aims to address the longstanding challenge of understanding how individual dislocation properties translate into their collective behavior in metals. We will create data-centric methods based on data from discrete dislocation dynamics and molecular dynamics simulations. These models are based on a comprehensive dataset of dislocation ensemble trajectories and develop new models for plasticity connecting individual and collective dislocation behavior.

The tasks associated with the position include the creation of a representative data set of dislocation trajectories using molecular dynamics (MD), their postprocessing and conversion of the raw atomistic data to dislocation trajectories as well as their comparison with trajectories from discrete dislocation dynamics simulations.

Your tasks:

- Development and implementation of a high-throughput workflow for efficient simulation of dislocation trajectories using molecular dynamics
- Development and implementation of automated postprocessing workflows to extract dislocation trajectories using the dislocation extraction algorithm (DXA)
- Development and implementation of a conversion scheme for MD-derived dislocation trajectories into a “dislocation structure” format
- Development and implementation of representations for dislocation systems including their visualization and analysis.

Anforderungsprofil & Qualifikationen

Your profile:

- Outstanding, science-driven candidate with strong programming abilities and a Ph.D. in Materials Science, Physics, or Chemistry
- Experience in navigating and operating UNIX-like systems (workstations, high performance computing facilities, simulation data management)
- Demonstrated experience with molecular dynamics simulations of plasticity with LAMMPS
- Demonstrated experience in (semi-) automated atomistic defect analysis and characterization in molecular dynamics simulations (dislocations, grain boundaries, stacking faults, disclinations, etc.)
- Prior programming experience in Python is beneficial
- Prior experience with simulation-experiment comparison is beneficial.
- Fluency in German (at least C1 level, in word and writing – required for an effective communication and for teaching in German) (nur bei Lehrverpflichtung)

Our offerings:

- Team-oriented cooperation in a committed, international and appreciative team
- Options for flexible working
- Extensive training and further education opportunities
- a job in the heart of the lively Ruhr metropolitan region with its diverse cultural offerings
- a friendly and collegial environment

Additional information:

At the request of the applicant (m,f,x), the staff council may be involved in selection interviews. <https://www.wpr.ruhr-uni-bochum.de/>

If the position is funded by third-party funds the employee has no teaching obligation.

German language courses are offered by the University Language Center (ZfA) in the field of German as a Foreign Language (DaF).

<https://www.daf.ruhr-uni-bochum.de/sbgk/index.html.en>

You can find information about TVL at: <https://oeffentlicher-dienst.info/>

The Ruhr-Universität Bochum is one of Germany's leading research universities, addressing the whole range of academic disciplines. A highly dynamic setting enables researchers and students to work across the traditional boundaries of academic subjects and faculties. To create knowledge networks within and beyond the university is RUB's declared aim.

The Ruhr-Universität Bochum stands for diversity and equal opportunities. For this reason, we favour a working environment composed of heterogeneous teams, and seek to promote the careers of individuals who are underrepresented in our respective professional areas. The Ruhr-Universität Bochum expressly requests job applications from women. In areas in which they are underrepresented they will be given preference in the case of equivalent qualifications with male candidates. Applications from individuals with disabilities are most welcome.

Contact details for your application:

Prof. Dr. Markus Stricker, Phone: +49234 32 29377

Travel expenses for interviews cannot be refunded.

For information on the collection of personal data in the application process see: <https://www.ruhr-uni-bochum.de/en/information-collection-personal-data-application-process>.

We are looking forward to receiving your **application with the specification ANR: 3950 until 11.11.2024, send by e-mail to the following address: markus.stricker@rub.de**

Please get in touch with the contact person named above if you would like to use an alternative application channel.

Vorteile für Mitarbeitende

- Vergünstigtes Jobticket
- Arbeitsplatz in lebendiger Metropolregion


Stellenmerkmale

Beschäftigungsart

Wissenschaftliche:r Mitarbeiter:in

Beschäftigungsumfang	Vollzeit (befristet)
Home Office	Nein
Bewerbungslink	https://jobs.ruhr-uni-bochum.de/jobposting/b9d6d09ffdfef88d6d52db338440d2d3c1a3f4a62?ref=stellenwerk

Kontakt Daten

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