

**Are you looking for a new professional challenge?
Then this is the place to be!
Become part of our international team!**



March 21st 2024

The Zuse Institute Berlin (ZIB) is a non-university research institute under public law of the state of Berlin. Within the research group “Mobility Lab” of the department “Network Optimization” we are offering a

**Research position (f/m/d)
Reference Code: IWA 11/24
Pay Grade: TV-L E 13 (100 %).**

The position is offered starting at the earliest possible date and will be a fixed-term contract (due to end of project) until 31.12.2025.

Background

Within an interdisciplinary, collaborative research project funded by the DFG Excellence Cluster MATH+, we develop advanced optimization methods for flight trajectory planning, combining discrete and continuous approaches for efficient global optimization. Minimum flight time trajectories are important for reducing fuel consumption and CO₂ emissions, such that airspaces increasingly turn towards free flight, allowing more flexibility in flight planning.

Job description

Your goals within the project will be

- development and implementation of Dijkstra-type solvers for Hamilton-Jacobi-Bellmann equations,
- derivation of a priori and a posteriori error estimates,
- adaptive combination of HJB shortest path approximations with optimal control methods,
- publishing the results in peer-reviewed journals and presenting them at international conferences.

Your profile

- Master's degree in mathematics or a related discipline
- Good knowledge of eikonal or HJB equations and their discretization
- Experience with discrete and continuous optimization methods
- Programming skills (C++, Python, or similar)
- Interest in interdisciplinary collaboration
- Good command of spoken and written English

We expect excellent communication and teamwork skills, a high level of independence and commitment, as well as the competence and willingness to write scientific publications on an international level.

We are offering a friendly working atmosphere with flexible work and meeting times, excellent equipment and a challenging professional environment

as well as

- comprehensive training in a competent and cooperative team,
- an additional pension scheme (VBL),
- 30 days annual leave, additionally free from work on December 24th and 31st,
- compatibility of work and family through flexible working hours, e.g. (flexitime),
- a salary in accordance with TV-L (Collective Agreement for the Public Service of the Federal States), taking into account the relevant professional experience,
- an allowance of up to €150 per month, alternatively a discounted BVG (public transport) ticket + difference amount,
- an end-of-year bonus
- and the use of canteens and sports programs of the Freie Universität Berlin (FUB) at reduced rates.

Although this position advertised is full-time, a part-time agreement is also possible.

Female applicants are highly encouraged to apply. Since women are underrepresented in information technology, the ZIB is trying to increase the proportion of women in this research area.

Applicants with disabilities will be given preference if equally qualified.

Please send your application, quoting the reference code **IWA 11/24**, including a cover letter, a CV and further documents as **one PDF file** by **March 27th 2024** (date of receipt) to: jobs@zib.de.

Our private policy statement regarding application data is available at www.zib.de/impressum.

For further information about this vacancy, please refer to our website www.zib.de or contact Ralf Borndörfer (borndoerfer@zib.de) or Martin Weiser (weiser@zib.de).

For further job offers please visit our website at <https://www.zib.de/jobadvertisement>.