



20.07.2017

The Zuse Institute Berlin (ZIB) is a non-university research institute under public law of the state of Berlin. Together with its partners from academia and industry, ZIB contributes to the solution of highly complex problems in science, technology, environment and society by developing mathematical models and efficient algorithms. The division of Mathematical Optimization and Scientific Information, the department of Mathematical Optimization, is offering a position within the research group „Energy Network Optimization“:

**research position (100%)**  
**reference Code: WA 26/17**  
**pay grade E13 TV-L Berlin**

The position is offered at the earliest possible date for two years, with the option to be extended.

#### **Work description:**

The Zuse Institute Berlin works in cooperation with other scientific research institutes as well as industrial partners on solutions of planning problems beyond the frontier of current feasibility. This position is part of the GasLab of Research Campus MODAL. In four mathematical labs, academia and industry join forces to work on data driven modelling, simulation, and optimization of complex real world processes from transportation, energy, medicine, and the development of general solver technology.

In this position, you will be part of the GasLab team that develops an automated decision support system for everyday operations of a natural gas transport network. Similar to car navigation systems, the objective is to provide foresighted recommendations on how to operate the network in the upcoming hours. This involves physical modelling of such a network as well as research on methods to compute actionable recommendations. Mathematically, an innovative combination of optimization methods from different areas such as mixed-integer nonlinear optimization and machine learning will be key in the solution. Together with researchers in the team you will work on the entire chain from solution concepts to the implementation of mathematical models in high-quality software to support natural gas dispatching. In this position, you have the opportunity to pursue a PhD project and publish your scientific results. You are expected to attend national and international scientific conferences.

We offer a friendly work atmosphere, excellent equipment and an ambitious professional environment. Embedded in the rich mathematical research landscape of Berlin, ZIB offers career perspectives on every stage including further qualification options and a strong support of research on award winning standards with high international visibility. Our team offers an attractive initial training process to train new team members in the knowledge and skills, you need for the success in our institute and your career. We offer a family friendly work environment including flexible working hours and meeting times. Although this position is offered full-time, a part-time position is also possible.

#### **Requirements:**

- excellent master or diploma in mathematics, computer science, or related disciplines
- a strong background in at least one of the following areas: linear and integer programming, combinatorial optimization, non-linear optimization

- experience in mathematical modelling of problems of the natural gas transport industry are of advantage
- good programming skills in at least one language (preferably C/C++, ADA, python, Java)
- good command of written and spoken English, proficient German skills are of advantage
- applicants are expected to be highly motivated, self-reliant, team-oriented

We particularly welcome the application of women, since women are generally underrepresented in information technology, mathematics and physics and ZIB strives to increase their proportion in this research area.

Persons with disabilities will be given preference when equally qualified.

Please send your application, quoting the reference code WA26/17 including

- a letter of motivation (max. 1 page),
- a CV including a description of previous research/thesis,
- certificates,
- contact of one or two references

to

Zuse Institute Berlin (ZIB)

- Administration -

Takustr. 7

14195 Berlin

or via e-mail to [jobs@zib.de](mailto:jobs@zib.de). Closing date for applications is August 18<sup>th</sup>, 2017 as date of receipt.

For further information about the position please see our website [www.zib.de](http://www.zib.de) or contact Dr. Janina Zittel ([zittel@zib.de](mailto:zittel@zib.de)) or Dr. Jonas Schweiger ([schweiger@zib.de](mailto:schweiger@zib.de)).

For further job offers please visit our website at [www.zib.de](http://www.zib.de).