

**Are you looking for a new professional challenge?
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15.07.2021

The Modelling and Simulation of Complex Processes Department of the Zuse Institute Berlin (ZIB) aims to fill the temporary position until December 31, 2021, with a possibility of extension subject to the approval of further funding,

**Scientist “Agent-Based Modeling” (f/m/d)
Reference Code: IWA 40/21
E13 TV-L Berlin (50%)**

for the next possible date.

The Zuse Institute Berlin (ZIB) is an interdisciplinary research institute for applied mathematics and data-intensive high-performance computing. Its research focuses on modeling, simulation and optimization with scientific cooperation partners from academia and industry. As part of its scientific service, ZIB operates supercomputers at the top performance level and hosts one of the Centers of the German National Alliance for High Performance Computing.

Mathematical modeling and simulation of complex systems is one of the research fields of ZIB. In particular, modeling of complex socio-economic and socio-ecological systems is needed for decision support on societal challenges. For the case of sustainable mobility, a large-scale parallelized empirically-grounded agent-based model is being used in the Decision Theatre, a dialogue format in which scientists and stakeholders can draw on data and models in discussions. To support a research process in which this model can be refined and extended according to stakeholder feedback, the candidate shall extend and generalize the existing “Mobility Transition Model”, in particular, improving existing implementations so as to obtain a modular version which can be flexibly adapted to include new datasets as well as practical knowledge of stakeholders (such as experts from the worlds of policy, administration, business, but also citizens).

We are looking for a candidate who is highly motivated to work at the interface of mathematics of complex systems – that is, in particular, modeling and simulation – and dialogue processes with stakeholders for using and improving models.

Your Responsibilities:

- contribute to reconstructing the Mobility Transition Model using a modular architecture, in particular, by extracting essential elements and underlying structures from the existing model and identifying desirable modifications, defining modules and designing the respective interfaces, and implementing the resulting new model version
- through the abstraction of underlying structures and the specification of design patterns, collaborate on new mathematical developments for agent-based modeling on societal challenges more generally

Candidates need to provide:

- a university degree (master) in mathematics, physics, computer science or a related field,
- experience with agent-based modelling, preferably in a socio-economic/ecological systems context,
- a good technical background on programming methods for refactoring,
- good programming skills in Python, experience with object oriented programming languages is an asset,
- experience with stakeholder involvement in research is desirable,
- a strong focus on self-responsibility, pro-activity, the ability to work in a team and creativity.

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, flexible working hours (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,
- discounted BVG (public transport) ticket as part of the capital city allowance,
- and the use of canteens and sports programs of the Freie Universität Berlin (FUB) at reduced rates.

The candidature of women is encouraged. Since women are underrepresented in information technology, ZIB is trying to increase the proportion of women in this research area.

Persons with disabilities will be given preference when equally qualified.

Please send your application, quoting the reference code **IWA 40/21**, including a cover letter, a CV and further documents in pdf-format by **July 23, 2021** (date of receipt) to: jobs@zib.de.

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

For further information about the position, please refer to our website www.zib.de or contact Dr. S. Winkelmann (winkelmann@zib.de).

For further job offers please visit our website at www.zib.de/jobads.