06.12.2018

The Zuse Institute Berlin (ZIB) is a non-university research institute under public law of the state of Berlin. The division "Mathematics for Life and Materials Sciences" is offering a

PhD position (f/m)
Reference code: WA 66/18
Pay grade E 13 TV-L Berlin (75 %)

in the department *Numerical Mathematics*. The position – subject to the approval of funds –will start at the earliest possible date and will be a fixed-term contract for two years with the option of extension.

Background

The position is part of the research project "Data-driven Modeling of the Romanization Process of Northern Africa" of the Cluster of Excellence MATH+ at ZIB. The main goals of this project are the development of network-based models for describing cultural spreading processes in the ancient world in application to the Romanization of Northern Africa as well as the construction of efficient algorithms for network and process inference from archaeological data. Problems to be addressed include the extension of available spreading path models as well as Bayesian uncertainty quantification on path space. The research will be carried out in close collaboration with the German Archaeological Institute (DAI) and Freie Universität Berlin (FUB) and aims at shedding light on the mechanisms underlying cultural transformation processes. The successful candidate shall be included in a larger research team based at ZIB, FUB, and DAI.

Tasks

The tasks related to the position include:

- Extension of available spreading models from archaeology and epidemiology in cooperation with experts from FUB.

- Development and analysis of Bayesian network inference methods allowing uncertainty quantification on spreading paths.

- Prototypical implementation in Python or Matlab.

- Validation of models and algorithms based on archaeological data in close cooperation with experts from DAI.

- Publication of results in peer-reviewed journals.

We expect creativity and a high degree of commitment in solving problems. We offer a friendly working atmosphere, excellent equipment, and a challenging professional environment. We offer scientists in all career stages opportunities for further qualification and support and expect

research on top level with international visibility. Through the cooperation with the DAI, this project also offers the opportunity to work in an inter- and transdisciplinary context.

Requirements

- University master degree/diploma in mathematics, computer science, or related disciplines

- good programming skills (preferably Python and Matlab)

- experience in some or all of the following areas is essential: dynamical systems (modeling, stochastic processes, dynamics on networks), statistical inference, numerical mathematics

- applicants are expected to be highly motivated, self-reliant, and open-minded to interdisciplinary collaboration

- good command of written and spoken English is a must

Applications by women are specifically 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 WA 66/18, including CV in tabular form and all relevant documents until 31st of December 2018 (date of arrival) to

Zuse Institute Berlin (ZIB)
- Administration -
Takustr. 7
14195 Berlin-Dahlem

or electronically as pdf-form to: jobs@zib.de.

You can find our privacy policy on our website at www.zib.de/impressum.

Further information about the position can be obtained on our website www.zib.de or from Prof. Dr. Christof Schütte (schuette@zib.de).

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