

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



13 July 2022

The Zuse Institute Berlin (ZIB) is a non-university research institute under public law of the state of Berlin. We conduct research and development in applied mathematics and computer science as well as the analysis and processing of complex data in conjunction with high-performance computing.

For the *Visual Data Analysis* research group, which is part of the division *Mathematics of Complex Systems*, we offer a fixed-term contract at the next possible date until 30 June 2026 for a

**Research Position (m/f/d)  
(PhD student) Reference Code: WA 32/22  
Pay Grade: E13 TV-L Berlin (75%)**

#### **Job description – project goals**

The task is to develop methods of data visualization for the identification and visualization of spatiotemporal structures to achieve a better understanding of multiscale phenomena that occur during the formation of weather fronts, with a focus on cold fronts. This includes the development, implementation and testing of interactive methods

- for defining (formally and with visual support) spatiotemporal structures,
- for extracting such structures from large spatiotemporal data,
- for comparing multiple time-dependent fields – quantitatively and structure-based

as well as the use of these methods to compare meteorological data from various sources.

The work is part of the DFG Collaborative Research Center 1114 "Scaling Cascades in Complex Systems", which has been established at the Freie Universität Berlin and aims to investigate multiscale phenomena. Subproject C06 "Multiscale Structure of Atmospheric Vortices" seeks to model the complex multiscale processes involved in the development of meteorological phenomena such as tropical storms and weather fronts. For this purpose, the process interactions are modelled mathematically via the partially deterministic and partly chaotic or random cascades of scales. This research shall be supported by methods of data visualization.

#### **Ideally, you fulfill the following requirements**

- Master degree in computer science, mathematics, physics or a related subject
- very good knowledge in visualization and visual data analysis
- experience in software development with C++

- good communication and teamwork skills, both internally and across disciplines
- high degree of self-reliance and commitment
- good command of written and spoken English

**It would be favorable if, additionally,**

- you are interested and have prior knowledge in computer graphics;
- you are interested in meteorological questions.

The scientific publication of the results in English as well as the participation in international and national conferences is expected and made possible.

**We offer** a family-friendly working environment through flexible working and meeting times, excellent equipment and a challenging professional environment.

**Additionally, we offer**

- a multifaceted, future-oriented and demanding field of activity,
- 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,
- an end-of-year bonus,
- 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.

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 **WA 32/22**, including a cover letter containing a statement of your research interests, your CV with a list of publications, academic transcripts and contact details of two references, by **21 August 2022** (date of receipt) in pdf-format to: [jobs@zib.de](mailto:jobs@zib.de)

Our private policy statement regarding application data is available at [www.zib.de/impressum](http://www.zib.de/impressum).

For further information about the position, please refer to our website [www.zib.de](http://www.zib.de) or contact Dr. Daniel Baum ([baum@zib.de](mailto:baum@zib.de)).

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