



With around 17,000 students and 3,800 employees, the **Technische Universität Braunschweig** is one of Germany's leading institutes of technology. It stands for strategic and performance-oriented thinking and acting, relevant research, committed teaching, and the successful transfer of knowledge and technologies to the economy and society. We consistently advocate for family friendliness and equal opportunities.

Our research focuses are mobility, engineering for health, metrology, and city of the future. Strong engineering and natural sciences are our core disciplines. These are closely interconnected with economics, social and educational sciences and humanities.

Our campus is located in the midst of one of the most research-intensive regions in Europe. We work successfully together with over 20 research institutions in our neighborhood as we do with our international partner universities.

Starting from 01.02.2025, the Institute of Space Systems (IRAS) is looking for a

Research and Assistant position (m/f/d) in the field of “Space and Air Traffic Management” (EG 13 TV-L, full-time)

We are pleased to announce a fixed-term position available for a period of three years, providing the successful candidate with the opportunity to pursue a doctorate.

Airspace is a finite resource that has undergone significant changes in its usage over recent years. Traditionally dominated by aviation stakeholders, this domain is increasingly being shared with a growing number of space industry participants. While spaceflight has been around for several decades, it is now experiencing a monumental shift towards commercial ventures, introducing a new era of stakeholders. As a result, the existing frameworks for integrating spacecraft into the air transport system are no longer sustainable long-term. Currently, airspace is largely restricted for spacecraft launches and re-entries. However, with a rise in both aviation traffic and spaceflight activity, this restrictive approach is becoming unfeasible. Recent developments in spaceflight indicate a notable uptick in the frequency of launches and landings. The advent of reusable rockets, for instance, has dramatically lowered launch costs. Additionally, the burgeoning space tourism sector is likely to lead to a surge in manned spaceflight traffic. The situation is further compounded in Europe, where a host of new companies are emerging to develop and deploy small satellite launchers. Coupled with Europe's already congested airspace and high population density, this growth poses a risk of significant airspace bottlenecks in the future. Immediate attention will be required to address these challenges and ensure safe and efficient operations in both aviation and space travel.

In collaboration with the Institute of Flight Guidance, the IRAS is exploring this topic as part of a DFG-funded project. We are currently seeking candidates for a position dedicated to the final phase and further development of this initiative.

Your tasks

- You will carry out research in trajectory calculation and hazard area calculation.
- You will carry research on mission scenarios for reusable launchers.
- You will investigate fragmentations of rockets and upper stages.
- You will look at the impact of space traffic on the air traffic.
- You will apply for and work on research projects.
- You will publish research findings and participate in national and international conferences.
- You will be involved in teaching at the University (preparation and implementation of courses as well as supervision of students' work).

Your Qualifications

- You have a degree (Master's or equivalent) in Aerospace, Mechanical, Physics, or related engineering fields.
- You have very good knowledge of the German and English language.
- You have experience in Python, MATLAB and Ansys.
- You have experience in writing proposals and papers.
- You have background experience in orbital dynamics.
- You are flexible, can perform under pressure and work well in a team.
- You are aiming for a doctorate.

We offer

- Work on exciting future-oriented research topics in an inspiring work environment as part of the university community
- A vibrant campus life in an international atmosphere with lots of intercultural offers and international cooperations
- Pay in accordance with the collective agreement TV-L (a special payment at the end of the year as well as a supplementary benefit in the form of a company pension, comparable to a company pension in the private sector) including 30 days' vacation per year
- Flexible working and part-time options and a family-friendly university culture, awarded the "Family-friendly university" audit since 2007
- Special continuing education programs for young scientists, a postdoc program, as well as other offerings from the Central Personnel Development Department and sports activities.

Further notes

We welcome applicants of all nationalities. At the same time, we encourage people with severe disabilities to apply. Applications from severely disabled persons will be given preference if they are equally qualified. Please attach a form of evidence of your handicap to your application. We are also working on the fulfilment of the Central Equality Plan based on the Lower Saxony Equal Rights Act (*Niedersächsisches Gleichberechtigungsgesetz—NGG*) and strive to reduce under-representation in all areas and positions as defined by the NGG. Therefore, applications from woman are particularly welcome in this case.

The personal data will be stored for the purpose of processing the application. By submitting your application, you agree that your data may be stored and processed electronically for application purposes in compliance with the provisions of data protection law. Further information on data protection can be found in our data protection regulations at <https://www.tu-braunschweig.de/datenschutzerklaerung-bewerbungen> . Application costs cannot be reimbursed.

Questions and Answers

For more information, please call Prof. Dr.-Ing. Simona Silvestri on +49 (0) 531 391-9960.

Deadline for applications is 31.10.2024

Are you interested? Please send your application preferably via email to aerospace@tu-braunschweig.de

or via mail to

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