




Starting from 1st August 2024, the Institute of Aircraft Design and Lightweight Structures of the TU Braunschweig within the collaborative research centre Transregio SynTrac is looking for a

## Research Associate (m/f/d) in the field of *Innovative fuselage structures for engine integration*

(Full time – 3.00 years fixed-term – Doctorate)

With the major goal of climate-neutral flying, we are exploring potentials and synergies through highly integrated aircraft development in numerous sub-projects at TU Braunschweig, University of Stuttgart, LUH Hannover and DLR Braunschweig in the new research centre SynTrac. We use interactions between the disciplines of aerodynamics, acoustics, flight physics, structural mechanics and thermodynamics through a multidisciplinary, cross-system view of the aircraft development process to develop future highly efficient aircraft through innovative approaches.



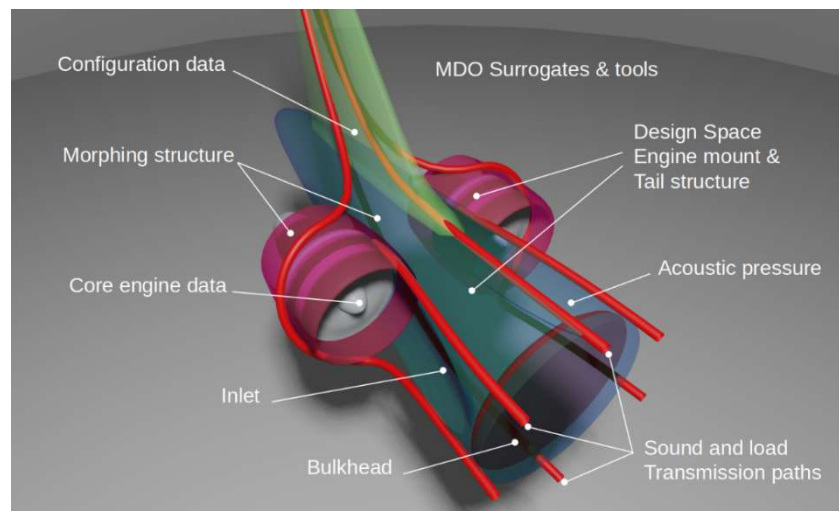
 SynTrac

In sub-project B06 "Structural design space and interfaces of the tail structure", you will design, analyse and optimise innovative fuselage structures for the high-level integration of empennage and engine at the tail of the aircraft. Your exciting challenge will be to develop novel synergetic solutions that will be forward-looking for new generations of aircraft, both methodologically and application-orientated.

Using methods of FEM-based structural analysis and optimisation, you will overcome the previous mono-disciplinary boundaries by successively considering multidisciplinary requirements (e.g. mechanical, dynamic, thermal). In doing so, you will explore the new design spaces that are opening up and systematically find optimal solutions. Take part in the development and application of new materials, which also enable a pioneering concept for morphing the aircraft tail.

Make a decisive contribution to creating the climate-neutral future of aviation with this project.

You will work in the Multidisciplinary Design and Simulation group at the Institute of Aircraft Design and Lightweight Structures at the TU Braunschweig, which has many years of experience in high-fidelity modelling of multidisciplinary problems, e.g. fluid-structure interaction. The project will be carried out in cooperation with the Institute of Statics and Dynamics at the University of Stuttgart. Embedded in a cooperation with other sub-projects, the feasibility will be demonstrated and the overall goals of the SynTrac transregio will be pursued.



Your path to a doctorate in an interdisciplinary and cross-location research team will be accompanied by an integrated research training group. New forms of collaboration will emerge through the concept of "New Work".

### Make a Difference

- You will carry out research in the collaborative research centre on the topic *Innovative fuselage structures for engine integration at the aircraft tail*
- You will publish research findings and participate in national and international conferences
- You will be involved in teaching at the University by supervision of students' work

## Your Qualifications

- Master's degree or equivalent in mechanical engineering / aerospace engineering with experiences in numerical simulation, e.g. finite element method, and / or structural design and optimization
- Strong oral and written communication skills and good knowledge of the English language
- You are enthusiastic about actively working on the challenge of climate-neutral flying and are open to work in an interdisciplinary, cross-location team
- You are aiming for a doctorate

## Our Benefits

- Pay in accordance with the collective agreement TV-L, pay grade 13, depending on the assignment of tasks and fulfilment of personal requirements.
- 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.
- Interesting and diverse tasks in a pleasant working atmosphere with a friendly and motivated team that works closely together across the locations.
- A workplace that is basically suitable for part-time work, although the position is to be filled full-time, as well as flexible working and part-time options and a family-friendly university culture, awarded the "Family-friendly university" audit since 2007.
- A wide range of continuing education and company health care programmes as well as a vibrant campus life in an international atmosphere.

## TU Braunschweig

With around 17,000 students and 3,800 employees, Technische Universität Braunschweig is the largest Institute of Technology in northern Germany. We are known for our strategic and performance-oriented thinking and acting, top-level research, highly committed lecturers and a successful transfer of knowledge and technologies into industry and society. We are dedicated to creating a family-friendly environment and advocate for equal opportunities.

Our core research areas are Mobility, Engineering for Health, Metrology, and the City of the Future. A strong focus is placed on engineering and the natural sciences, with a close link of our core disciplines to the economics, social and educational sciences as well as the humanities.

Our campus is located in the middle of one of Europe's research hotspots, where we have established a successful working relationship—both with the more than 20 research facilities in our neighbourhood and our international partner universities.

## What's more to know

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 women 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 Dr. Matthias Haupt on (0531) 391-9917.

## Apply by 30 July 2024

Are you interested? Please send your application preferably via email to [m.haupt@tu-braunschweig.de](mailto:m.haupt@tu-braunschweig.de) or via mail to

Technische Universität Braunschweig  
Institute of Aircraft Design and Lightweight Structures  
Hermann-Blenk-Str. 35  
38106 Braunschweig