



Junior Research Group Lead Positions in the Cluster of Excellence SE²A - Sustainable and Energy Efficient Aviation (EXC 2163)

TU Braunschweig has defined one of its core research areas to create safe, efficient and sustainable mobility for the future (<https://www.tu-braunschweig.de/en/mobility-1>). In aviation research, we follow an interdisciplinary research concept, jointly with DLR and Leibniz University Hannover, within the Cluster of Excellence “SE²A - Sustainable and Energy Efficient Aviation”. The Cluster defines scientific and technological foundations for a sustainable future global air transport system to meet the mobility demands. It defines solutions for transformation needs of the air transport system by introducing new aircraft technologies, new energy storage and conversion approaches, and fundamental evaluations of the overall aviation system. (<https://www.tu-braunschweig.de/en/se2a>).

The Cluster of Excellence is structured into the three core research areas, namely “Assessment of the Air Transport System (A)”, focusing on Operations Research, technology assessment and life cycle analysis, “Flight Physics and Vehicle Systems (B)” for new aircraft technologies in flight physics and aircraft structures, and “Energy Storage and Conversion (C)”, focusing on vehicle energy storage and conversion systems and full- and hybrid-electric aircraft drive systems. The Cluster has established Junior Research Groups (JRG) as an effective means to generate effective thrusts in critical research fields. We therefore search for JRG leads with a doctoral degree and a strong research background in their respective fields.

A new JRG on **Analysing and Modelling the Atmospheric Impact of Novel Propulsion Technologies** shall be established.

The JRG shall develop and apply a methodology for estimating the impact of novel energy efficient aircraft equipped with new propulsion technologies on the earth climate in the coming decades. Future operational air traffic scenarios including a mix of conventional and energy efficient aircraft shall be considered.

The research shall start from inputs delivered by already ongoing interdisciplinary SE²A research on novel propulsion technologies, new aircraft designs, and future air traffic management concepts. The JRG shall develop valid scenarios from these inputs targeting an air transport system in the year 2050. Existing methodologies from partners for modelling e.g. atmospheric properties and responses to emissions can be utilized and further developed by own research. The overall outcome shall provide means of estimating the impact of new propulsion systems on the global earth climate in the context of a future air transport system.

The JRG will be comprised of the lead and at least 2 doctoral candidates in collaboration with the German Aerospace Center DLR e.V., funded initially for 3 years as part of the overall project.

Application Process

Please send a complete written application in English as a single PDF file to:

se2a@tu-braunschweig.de

Applications have to consist of a cover letter (statement of purpose, including your motivation), your idea of methodical and contextual contribution to the project (length about two pages), full CV, academic certificates and transcripts (bachelor, master, and PhD), and other supporting certificates.

The deadline for submitting applications is the 11th of September 2023.

Qualifications

In order to be eligible, candidates must hold a PhD and are expected to have an excellent record of publications in good venues in their fields, international exposure and have participated in competitive research projects.

Benefits

We offer a fixed-term full-time contract for a period of up to three years. The annual salary will be according to EntgGr. E14 TV-L. Contracts include health, retirement and unemployment benefits.

About the employer

In Cluster of Excellence SE²A we appreciate a team-oriented and communicative style of work. Gender Equality is an important factor for us. We would be pleased to receive applications from women. We support all our academics in their scientific and personality development and we offer a family-friendly workplace. Severely disabled persons with equivalent qualifications will be given preference. Please attach a form of evidence of your handicap to your application. Your personal data will be saved for the application procedures.