Leibniz Universität Hannover

The Institute of Turbomachinery and Fluid Dynamics (TFD) invites applications for the position of a

Research Assistant (m/f/d) for the investigation of rotor vibrations in aircraft engines (Salary Scale 13 TV-L, 100 %)

starting as soon as possible. The position is limited to 24 months, with the possibility of extension. The scope of the position corresponds to 100% of the regular weekly working hours. The possibility of a doctorate is given.

The research focuses of the TFD are the investigation of flow-physical issues and thermal turbomachinery. These include, for example, wind turbines or gas and steam turbines operated with renewable fuels. Within the working group Aeroelasticity/Aeroacoustics and Wind Turbines, questions are addressed that ensure the sustainable operation of modern and future energy supply systems in a wide range of applications. The working group conducts interdisciplinary research in the field of fluid mechanics and structural mechanics. State-of-the-art design methods are not only applied, but also developed with the participation of industrial partners and integrated into their design processes. Examples of such successful collaborations of the institute are the Collaborative Research Centres 871, 880 and 1463, the Centre of Competence with industrial partners in aeronautics, the research network Dynamics of Energy Conversion DEW and the Cluster of Excellence 2163 SE^2A.

Responsibilities and duties

In order to make aircraft engine maintenance sustainable and cost-efficient, rotordynamics plays a crucial role. It is essential to detect and characterize imbalances or rubbing at an early stage in order to ensure the safe operation of aircraft engines. Since this characterization has so far been based purely on empirical values, a model-based approach is developed and validated as part of a research project in collaboration with an industrial partner in the aviation sector. On the basis of the results the damage mechanisms can be detected and localized in the engine tests.

At TFD, a simplified test rig, for which an initial concept already exists, is to be set up and put into operation to investigate rotor vibrations. The test rig will be integrated into the institute's state-of-the-art test park. Subsequently, independent tests with specific excitation mechanisms will be carried out to simulate typical damage cases. In addition to tests on the simplified rotor test rig, engine tests will be carried out together with the industrial partner. The knowledge gained from the rotordynamic test rig will be used to provide targeted support to the industrial partner.

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Employment conditions

To qualify for the position, applicants must have a university science degree in mechanical engineering or a comparable course of study, for example with a focus on structural dynamics, rotordynamics, flight engines, or similar.

Desired in addition are:

- very good to excellent academic results
- experience in rotordynamics
- knowledge in the application of CAD methods
- experience in performing experimental investigations
- knowledge in Matlab or Python for data analysis
- very good knowledge of German and/or English
- enjoyment of scientific and independent work

We offer you

- a position at the newly built Mechanical Engineering Campus in Garbsen CMG which has a state-of-the-art test park with realistic test benches and an excellent cluster infrastructure for the numerical simulations
- the opportunity to become part of a diverse and interdisciplinary team in which you can work on your tasks independently
- the chance to present your research results yourself to partners from international industry and at international specialist conferences and to build a personal network
- an interesting and varied workplace with a collegial working atmosphere
- early scientific independence, e.g. through the Caroline Herschel Fellowship for young female scientists
- flexible working time models (e.g. family-friendly working hours and childcare).
- Further education and training opportunities as well as participation in university sports

Leibniz University Hannover considers itself a family-friendly university and therefore promotes a balance between work and family responsibilities. Part-time employment can be arranged upon request.

The university aims to promote equality between women and men. For this purpose, the university strives to reduce under-representation in areas where a certain gender is under-represented. Women are under-represented in the salary scale of the advertised position. Therefore, qualified women are encouraged to apply. Moreover, we welcome applications from qualified men. Preference will be given to equally-qualified applicants with disabilities.

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For further information, please contact Mr. Niklas Maroldt (Tel.: 0511 762-4234).

Please submit your application with supporting documents by January 31st, 2024 to

E-Mail: maroldt@tfd.uni-hannover.de

or by postal mail to:
Gottfried Wilhelm Leibniz Universität Hannover
Institute for Turbomachinery and Fluid Dynamics (TFD)
For the attention of Mr. Maroldt
An der Universität 1
30823 Garbsen
http://www.uni-hannover.de/jobs

Information on the collection of personal data according to article 13 GDPR can be found at https://www.uni-hannover.de/en/datenschutzhinweis-bewerbungen/.