Chair of Aircraft Design
TUM School of Engineering and Design
Technical University of Munich

To strengthen our team at the campus in Garching near Munich we search by the earliest possible data a full-time doctoral candidate / scientific researcher (m/w/d) in the area of

Aircraft Noise Analysis and Modeling UAM

About us

The Chair of Aircraft Design (CAD) is part of the department of aerospace and geodesy at the Technical University of Munich (TUM) and treats aircraft systems as a whole in its research. Among others, research is conducted in the fields of operational aspects of aviation as well as aircraft design which is based on numeric simulations and experimental tests.

At the CAD noise research focuses on Urban Air Mobility (UAM) applications like air taxis and cargo drones. Relevant activities in this area are noise optimization and noise modeling of aircraft systems. Noise measurement data are acquired during flight tests with an in-house developed noise measurement system. Numeric noise simulations are conducted utilizing a CFD/Ffowcs Williams-Hawking's based approach. Large simulations run at the HPC environment of the Leibnitz Supercomputing Centre.

Your tasks at the Chair of Aircraft Design:

- Noise measurement of electric, vertical take-off and landing cargo drones (eVTOL UAVs) during in-flight tests in hover, cruise and transition
- Propeller noise measurements at an aeroacoustic wind tunnel
- Numeric modeling (CFD/FW-H), validation and analysis of noise emissions from single propellers and whole aircraft configurations
- Derivation of high precision noise models from simulation data (and partly measurement data)

What we expect from you:

- You completed your studies (in aerospace, mechanical engineering, technical mathematics/physics with a main focus on aerospace) with above-average success (minimum overall grade "good")
- Fundamental basic knowledge and ideally first practical experience in aerospace disciplines
- Basic knowledge in theoretic aviation technology as well as aeroacoustics
- Programing knowledge (e.g. Matlab) and experience in numeric simulations (focus on CFD)
- Experience in measurement technique
- Knowledge in the area of aircraft noise modeling and Lighthill-based flow induced noise simulation are of advantage
- Interest and motivation to deal with aviation noise questions in the context of novel applications like cargo drones and air taxi operations in the urban air space

What we offer:

- A full-time position as research assistants with the opportunity to pursue a doctoral degree
- a fixed-term contract with a salary in accordance with the German state regulated public service salary scale (TV-L E13)
- TUM is an equal opportunity employer. TUM aims to increase the proportion of women and therefore particularly welcomes applications by women. Applicants with severe disabilities will be given priority consideration given comparable qualifications.

Further information:

Please send your application until 01.09.2022 to the following email address: **sekretariat.lls@ed.tum.de**

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