Professur für Thermofluiddynamik
Dept. of Engineering Physics and Computation
School of Engineering and Design
Technische Universität München

Opportunities for Talents

Doctoral Student Position (m/f/d) – CO_2-Neutral Aircraft Propulsion

Professorship for Thermo-Fluid Dynamics, Dept. of Engineering, Physics and Computation, School of Engineering and Design, TUM

The research at the Thermo-Fluid Dynamics Group focuses on thermoacoustic combustion instabilities. These instabilities affect the safety and reliability of aircraft engines, rocket motors, gas turbines for power generation, and industrial combustion processes. Introducing hydrogen or ammonia as CO_2-neutral energy carriers poses numerous technological challenges, particularly when emissions of nitrogen oxides (NO_x) or noise must also be reduced.

To analyze and control thermoacoustic instabilities, we combine fluid mechanics, acoustics, and combustion with methods from control engineering, nonlinear dynamics, and data-driven modeling (machine learning). We collaborate closely with research institutions and industry partners within and outside Europe.

As part of a BMWK-funded research project on climate-neutral aviation propulsion technologies (LuVI Klima VII-1), we have an open doctoral researcher position (m/f/d).

Your Profile

- A university Master's degree (Aerospace Engineering, Mechanical Engineering, Chemical Engineering, Applied or Numerical Mathematics, etc.) with excellent academic performance.
- Strong English language skills.
- Interest in our research topics and high motivation for independent scientific work within an excellent team.
- Background and/or knowledge in at least one of the following areas: Fluid Mechanics, Acoustics, Combustion, Control Engineering, Dynamic Systems, Numerical Methods.
- Experience in scientific computing and numerical simulation, especially with Python, Matlab, OpenFOAM, FENICS, ANSYS, etc.
- Proven commitment and talent for university teaching.

What we offer

- A full-time research position (40 hours a week) with the opportunity to pursue a Ph.D. (starting in the summer of 2025).
- The position is limited to a maximum of four years.
- Employment will be under the public sector pay scale (TV-L, salary group E13).
- The university aims to increase the proportion of women in research and strongly encourages qualified female candidates to apply.
- The position is suitable for people with disabilities, who will be given preference in hiring if equally qualified.

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Data Privacy Information

You provide personal data by applying for a position at Technical University of Munich (TUM). Please refer to our data protection notice under Art. 13 GDPR: https://portal.mytum.de/kompass/datenschutz/Bewerbung/.

Application

By submitting your application, you confirm that you have read and understood TUM's privacy policy.

Please send your complete application by E-mail in one **single** PDF file to **office.tfd@ed.tum.de** with the subject: **‚Application-LuFo-TFD'**

Do not hesitate to contact the office for any administrative questions (+49.89.289-16217).

The application deadline is **15 April 2025.**