Open Positions at the Thermodynamics Institute LRT-10

„Combustion modelling of turbulent flames"

PhD researcher / postdoc

Our institute:

We conduct fundamental research in the field of numerical modeling and experimental investigation of turbulent combustion, heat transfer, aerothermodynamics, as well as application-oriented investigations to support the development of e.g. jet engines, rocket engines, vehicle engines, stationary gas turbines and industrial burners.

At the institute you will find demanding and creative tasks and excellent support. Doctorate possibility is given for all positions. Female applicants and foreign students / scholarship holders with good German language skills are welcome! The PhD topics can be tailored to your specific interests / abilities. **Feel free to contact us !**

Your task:

In the simulation of flow and combustion in car engines, gas turbine and rocket combustion chambers, and other industrial burners, a very accurate consideration of the interaction of turbulent flow structures with chemical reactions during the combustion process is of great importance. So far, there are no standard models available for combustion with strong fluctuations of the local ratio of fuel and oxidizer.

The focus of this numerical work is on the development of accurate combustion models for these turbulent, partially premixed flames for RANS and LES CFD simulations. For the numerical investigation of possible combustion dynamics effects, transient CFD simulations with acoustic excitation must also be performed. The implementation of the models will be carried out preferably in the Institute's advanced research CFD code based on OpenFOAM. Also commercial CFD codes like FLUENT, CFX are available. Close cooperation with research partners at other institutes of the faculty as well as with the project partner at TU Munich is part of this demanding task.

Which profile do we expect:

In addition to a very good degree (diploma, master) in an engineering or natural science study or technical mathematics (Uni, TH / TU) and good knowledge of thermodynamics, combustion and fluid mechanics, you enjoy self-responsible work in the PhD researcher team and you are interested in issues that have both fundamental and application-relevant aspects. Programming experience (C, C++) and enjoyment in the development and numerical implementation of mathematical models as well as knowledge of CFD technology, with commercial CFD solvers and especially OpenFOAM as well as the associated pre- and post-processing tools are beneficial.

Start / Duration: from 1st May 2018 or later in 2018

Payment: TVÖD E13 (full PhD or postdoc position)

We look forward to your application!

Contact: Please send your complete documents to the University of the Bundeswehr Munich, Prof. Dr.rer.nat. Michael Pfitzner, Thermodynamics institute LRT-10, Faculty of Aerospace, Werner-Heisenberg-Weg 39, 85577 Neubiberg (letter or email).

For more information, please call +49-89-6004-2103 or email *michael.pfitzner@unibw.de*. Institute homepage: *https://www.unibw.de/thermodynamik*