Anbieter

Universität
Universität Stuttgart

Institut/Einrichtung
Institut für Technische Verbrennung

Kategorie
Wissenschaftl. Stellen

Angebot

Titel
Stochastic Approaches for the modelling of turbulent flames

Einsatzort
Herdweg 51
70174 Stuttgart
Deutschland

Beschreibung
The focus of this project will be the development of a Multiple Mapping Conditioning (MMC) method that ensures the consistent modelling of all physical and chemical processes and their interactions with the hydrodynamics in a turbulent flame. MMC is a stochastic particle based approach and provides some advantages for closure of the turbulence-chemistry interactions, but all two-point statistics need to be modelled. Diffusion requires the knowledge of spatial gradients and therefore requires such two-point statistics. The researcher will conduct direct numerical simulations (DNS) of simple and more complex flame geometries to aid the development of MMC models for differentially diffusing species in a turbulent flow. The new combustion model will then be validated with LES and experimental data. The tasks will involve programming in C++.

We offer excellent potential for scientific development in the Institute for Combustion Technology (ITV) at the University of Stuttgart with state-of-the-art computer facilities and access to the University’s supercomputing centre. The Institute’s scientific language is English, but willingness to study German is expected.

Anforderungsprofil

Applications are invited for a Research Assistant/Associate position in the field of fluid dynamics, combustion and/or process/chemical engineering. Research assistants may register for a Ph.D.

You will be an enthusiastic and self-motivated person with a solid background in engineering mathematics, computational fluid dynamics and programming. Enthusiasm for computational projects is essential. A very good first MSc, MEng or equivalent degree in Mechanical Engineering, Chemical Engineering, Physics, Mathematics or any related subject is required. For applications at postdoctoral level, a PhD degree on a relevant topic, extensive experience in e.g., numerical techniques (such as the implementation in the context of Direct Numerical Simulation and/or Large-Eddy Simulation) and a proven track record in the field of fluid flow modelling or modelling of two-phase flows are expected. The ability to contribute to fundamental research will have been demonstrated.

Please send an up-to-date CV and copies of all transcripts of your degree(s) to Prof. A. Kronenburg. Electronic applications are welcome.

Vergütung

The pay scale is according to TVL-E13. The grade and therefore the final salary will depend on your relevant experience.

Art der Beschäftigung
nach Vereinbarung
Zeitraum der Beschäftigung
nach Vereinbarung

Bewerbungsfristende
Dienstag, 31. März 2020 - 23:59

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