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

Kontakt

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