

Einladung

Das Institut für Strömungstechnik und Thermodynamik (ISUT) veranstaltet im Rahmen der DFG-Forschergruppe 1447 "Physicochemical-based models for the prediction of safety-relevant ignition processes" am

Montag, dem 11. Juni 2012, 10:00 Uhr s.t.

im Gebäude 03, Raum 214 ein

Institutskolloquium,

mit dem Vortrag

„Turbulent Combustion Modeling and Simulation with the One-Dimensional Turbulence (ODT) Model”

Referent: Prof. Tarek Echekki

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Abstract: Turbulent combustion modeling often faces two important challenges: 1) the development of a reduced state-space description that relates the multi-component state to a reduced set of transported moments, and 2) the development of a statistical distribution of the state, which is often represented through a joint scalar probability density function (pdf). Traditional paradigms in turbulent combustion have enabled simplified descriptions of the state-space (e.g. the steady flamelet model) at the potential expense of simplified assumptions related to the combustion mode (e.g. premixed) or combustion regime (e.g. flamelet). Presumed pdf shapes are common in turbulent combustion modeling, but often fail under strong non-equilibrium effects, such as during extinction or (re-)ignition. The one-dimensional turbulence (ODT) model represents a computationally efficient approach to overcome inherent limitations of existing moment-based approaches. It may be used as stand-alone to simulate canonical flows, implemented off-line to construct closure models, or integrated within the context of 3D solutions, such as large-eddy simulation. The ODT formulation for turbulent combustion is introduced and different implementations of the ODT model are illustrated.

Über Ihre Teilnahme würden wir uns sehr freuen!

Prof. Dominique Thévenin

