

*Institut für Energietechnik: Prof. R.S. Abhari (LEC), Prof. K. Boulouchos (LAV)
Prof. Ch. Müller (ESE), Prof. H.G. Park (NETS), Prof. D. Poulidakos (LTNT)
Prof. H.-M. Prasser (LKE), Prof. A. Steinfeld (PRE)
Institut für Fluidodynamik: Prof. P. Jenny, Prof. T. Rösgen
Computational Science & Engineering Laboratory: Prof. P. Koumoutsakos*

06/11/2014

EINLADUNG

zu einem Vortrag im Rahmen des

Kolloquiums Thermo- und Fluidodynamik

Datum: >> **Freitag, 28. November 2014** <<

Zeit: >> **11:15 Uhr** <<

Ort: Maschinenlaboratorium ETH Zürich
Hörsaal ML H 44

Referent: **Prof. Nicolas Noiray**
Laboratory of Combustion and Acoustics for Power Systems, ETH Zürich

Titel: **Thermoacoustic Instabilities in Gas Turbine Combustion Chambers**

Major technology improvements are required to meet the targets of next generation gas turbines in terms of performances, pollutant emissions and operational flexibility. One of the recurring problems to be dealt with is the coupling between flames and combustion chamber acoustics. Constructive nonlinear acoustic-flame interactions can yield high amplitude dynamic pressure limit cycles which reduce the lifetime of the hot gas path parts or in the worst case which destroy them during a sudden catastrophic event.

The only way to avoid these unwanted consequences is to narrow the gas turbine operating window to regions where the acoustic level is acceptable. The particular case of annular combustion chambers in which standing or spinning azimuthal modes establish will be discussed during this presentation. Emphasis will be put on the stochastic aspects of the thermoacoustic coupling, which are due to the intense forcing from the turbulent reacting flow. Modelling strategies and practical mitigation measures will also be presented.

Host: PD Dr. D. Meyer-Masseti, Prof. P. Jenny

Gäste sind willkommen!