



# Heat transfer and fluid-structure interaction in acoustic flows

A workshop in the framework of, and sponsored by the FP7 project LIMOUSINE,  
a Marie Curie initiative.

September, 26<sup>th</sup> & 27<sup>th</sup>, 2012

German Aerospace Centre (DLR)

Institute of Combustion Technology

Pfaffenwaldring 38-40, 70569 Stuttgart, Germany

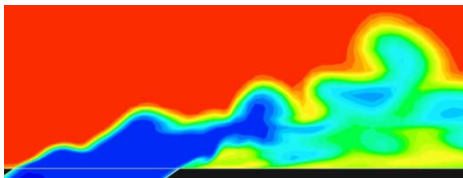


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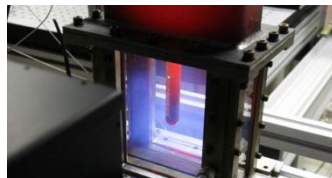
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Effusion cooling: temperature distribution



LIMOUSINE combustor

In technical combustors, heat transfer to combustor walls and fuel sprays plays an important role. The thermal interaction between a turbulent hot gas flow and a solid wall or a fuel spray is rather complex and becomes even more complicated in unsteady combustion processes like thermo-acoustically pulsating gas turbine combustors. In this workshop different aspects of heat load and cooling of combustor liners as well as the thermal interaction with fuel sprays will be treated. Modern experimental techniques as well as sophisticated numerical approaches in this field will be presented in the lectures.



## Venue

The workshop will take place in the lecture hall (“Hörsaal”) of the DLR in building A, Pfaffenwaldring 38-40, 70569 Stuttgart, Germany

## Travelling to DLR

Travel information and a map can be found under [www.dlr.de/en/Portaldata/1/Resources/standorte/stuttgart/en.pdf](http://www.dlr.de/en/Portaldata/1/Resources/standorte/stuttgart/en.pdf)

## Registration

A workshop fee applies to non-LIMOUSINE participants (VAT incl.). PhD students 100,- €, other 150,- €. Registration includes lectures, refreshments, lunches and workshop dinner. A registration form is attached to this program. Deadline for registration is **August 29<sup>th</sup>, 2012**.

## Accommodation

Suggested hotels are *Hotel Rieker Novum Stuttgart Hauptbahnhof*, <http://www.hotel-rieker.de/> or *Motel One Stuttgart-Hauptbahnhof* <http://www2.motelone.com/de/hotels/stuttgart/hotel-stuttgart-hauptbahnhof/>.

Alternatively, follow the link: <http://www.stuttgart-tourist.de/>. Book your hotel as soon as possible to get lower prices.

## Contact

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Program - Wednesday, September 26<sup>th</sup>, 2012

- 09:30 **Welcome and Registration**
- 10:00 **Radiative Heat Transfer in Gas Turbine Combustors**  
*Werner Krebs*  
Siemens AG, Mülheim
- 11:00 **Coffee Break**
- 11:30 **Coupling of Combustion Dynamics to Structural Vibrations in Gas Turbine Combustors**  
*Jim Kok*  
Laboratory of Thermal Engineering, University of Twente, Enschede
- 12:30 **Lunch**
- 14:00 **Advanced Combustor Liner Cooling Technology**  
*Achmed Schulz*  
Institut für Thermische Strömungsmaschinen, KIT, Karlsruhe
- 15:00 **Heat Transfer in Multiphase Flows**  
*Patrick Le Clercq*  
Institut für Verbrennungstechnik, DLR Stuttgart
- 16:00 **Coffee**
- 19:00 **Dinner**



Program - Thursday, September 27<sup>th</sup>, 2012

- 09:00 **Modelling of Effusion Cooling for Combustor Liners**  
*Stefan Voigt*  
Institut für Verbrennungstechnik, DLR Stuttgart
- 10:00 **Temporal Resolution of Heat Flux Measurement Techniques**  
*Tim Rödiger*  
Institut für Verbrennungstechnik, DLR Stuttgart
- 11:00 **Coffee Break**
- 11:30 **Thermographic Phosphors for Surface Thermometry**  
*Jan Brübach*  
HEAG Südthessische Energie AG (HSE)
- 12:30 **Lunch and Coffee**
- 14:00 **End of Workshop**

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A lab tour will be offered on Tuesday afternoon, September 25<sup>th</sup>, 2012.

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