

International Energy Agency / ERCOFTAC
joint workshop on

“Gas engine combustion fundamentals”

June 13, 2016

ETH Zurich, Switzerland, ML building, room E12

The Aerothermochemistry and Combustion systems laboratory is pleased to announce the first workshop on “Gas engine combustion fundamentals”. The event is held jointly in the framework of the [Implementing Agreement for Energy Conservation and Emissions Reduction in Combustion of the International Energy Agency \(IEA\)](#) gas engine collaborative task, the [ERCOFTAC Special Interest Group on Reactive Flows](#) and the [Swiss Competence Centre for Energy Research](#).

The workshop seeks to address a broad variety of challenges pertaining to stoichiometric/lean burn natural gas mono-fuel engines and dual fuel configurations using (micro) pilot ignition for lean premixed charges or high-pressure direct gas injection in non-premixed mode. Specific topics of interest encompass ignition systems, early flame kernel growth, flame-wall interaction and chemical kinetics/knock for which experimental diagnostics and modelling efforts are discussed.

Sponsored jointly by the Swiss Federal Office of Energy Combustion Research programme and the Swiss Competence Centre for Energy Research Mobility, the workshop can be offered free of charge however registration is required (link below).

ERCOFTAC funding to support student participation is gratefully acknowledged: PhD candidates are requested to upload a ½ page description of their PhD research topic together with a publication list upon registration of which a selection of ten will be supported with € 200.

Venue	ETH Zurich (main campus), ML building, room E12, Sonneggstrasse 3, CH-8092 Zurich, Switzerland
Registration (deadline April 20th)	http://www.lav.ethz.ch/news-and-events.html
Inquiries	info@lav.mavt.ethz.ch / phone +41 (44) 632 36 68



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Swiss Federal Office of Energy SFOE



Programme

08:15	Registration starts	
9:00	Welcome address and Introduction/overview	Dr. Yuri M. Wright and Prof. Konstantinos Boulouchos, ETH Zurich
9:30	Coffee break	
10:00	Initial and boundary conditions	Numerical and experimental investigations of high pressure gas injection processes Prof. M. Pfitzner University BW, Munich, Germany
10:30		Tracers-LIF for quantitative imaging of methane/air-mixing Prof. Sebastian Kaiser University of Duisburg-Essen, Germany
11:00		Investigation of flame-wall interactions within an SI engine using optical diagnostics Dr. Benjamin Böhm Darmstadt University, Germany
11:30		DNS of flame propagation in confined geometries and flame-wall interaction Dr. Christos E. Frouzakis ETH Zurich, Switzerland
12:00	Lunch	
13:30	Ignitions systems	A CFD Lagrangian-Eulerian approach for flame-kernel development in SI turbulent premixed flames Prof. Gianluca D'Errico Politecnico di Milano, Italy
14:00		Simulation of early flame kernel development in turbulent flow and comparisons with asymptotic estimates Prof. Ananias G. Tomboulides Aristotle University, Thessaloniki, Greece
14:30		Fundamental aspects of pilot ignition in natural gas engines Prof. Epaminondas Mastorakos University of Cambridge, UK
15:00	Coffee break	
15:30	Kinetics / misc.	Study of CCV and knock on a downsized SI engine using Large Eddy Simulation Dr. Christian Angelberger IFPen, Rueil-Malmaison, France
16:00		Combined effects of hydrogen and dilution in an optical spark ignition engine fuelled with methane Prof. Christine Mounaïm-Rousselle Université Orléans/PRISME, France
16:30	Closing remarks	

