



FLOW Autumn School on Aeroacoustics and Thermoacoustics of Propulsion Systems

October 23-27, 2017
Linné FLOW Centre, KTH Mechanics
Royal Institute of Technology
Stockholm, Sweden



<https://www.flow.kth.se/?q=node/290>

Scope:

The aerodynamic and combustion related noise generated by propulsion systems is a very important topic within today's engineering world. Facing the need for noise reduction enforced by worldwide authorities, researchers have to develop suitable experimental, numerical, and modelling strategies to understand, accurately predict, and eventually suppress at the source the noise associated with propulsion systems. The FLOW Autumn School is aimed to provide from the perspective of physical laws governing fluid flows, advanced knowledge concerning the noise generation mechanisms, the origin of the acoustic sources and associated physical phenomena. Practical problems involving noise production by turbulent flows (non-reacting /reacting), with and without fluid-structure interaction, will be examined with emphasis on acoustic sources, noise propagation, characterization and sound reduction strategies at source.

Aspects concerning the physical mechanisms for noise generation and transmission in propulsion systems, state-of-the-art numerical approaches, modelling and experimental methods, as well as noise suppression technologies, will be discussed in our school with distinguished speakers. At KTH, the research and education within this field of research is associated with the Linné FLOW Centre.

Topics and invited lecturers:

Phillip Joseph, *Turbomachinery Aeroacoustics*, Univ. of Southampton, UK

Oliver C. Paschereit, *Thermoacoustics in Gas Turbine Combustors*, TU Berlin, Germany

Aimee Morgans, *Modeling and Suppressing Thermoacoustic instabilities*, Imperial College London, UK

Christophe Bogey, *Fundamentals of Subsonic and Supersonic Jet noise*, Ecole Centrale de Lyon, France

André V. G. Cavalieri, *Jet Noise Modeling and Control*, Instituto Tecnológico de Aeronáutica (ITA), Brazil

The Autumn FLOW School is intended to give an overview of both general and more specific topics relevant to aeroacoustics and thermoacoustics of propulsion systems. For the exercises, you will need a laptop with installed Matlab, preferably running Linux. The schedule is:

- Monday (23/10), Welcome, organisation of the school, administration
Phillip Joseph: *Turbomachinery Aeroacoustics*
- Tuesday (24/10)
Oliver C. Paschereit, *Thermoacoustics in Gas Turbine Combustors*
- Wednesday (25/10)
Aimee Morgans, *Modeling & Suppressing Thermoacoustic instabilities*
- Thursday (26/10)
Christophe Bogey, *Fundamentals of Subsonic & Supersonic Jet Noise*
- Friday (27/10)
André V. G. Cavalieri, *Jet Noise Modeling and Control*

Administrative details:

Lectures will be given October 23 to 27, 2017 in the seminar room of KTH Mechanics (room Faxén) located on the KTH main campus, close to the city centre of Stockholm. The FLOW graduate school will provide lunches to the registered participants. The programme includes a school dinner on Wednesday night in a restaurant within walking distance from KTH. A project will be performed by pairs of student and sent electronically to the school organisers for the final evaluation, worth 3.5 ECTS points (if requested). The course is free of charge, and includes lunches plus the school dinner. Interested PhD students are invited to contact Mihai Mihaescu (mihai@mech.kth.se) for registration. For further information visit the school homepage on www.flow.kth.se.

Contact and organiser:

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