



Flow instability, modelling & control

EPSRC Summer school on “Modal Decompositions in Fluid Mechanics”

5-8 August 2019 DAMTP University of Cambridge

Fluid mechanics is, like many other fields, enjoying an ever increasing access to huge data sets gathered from experiments, observations in the field or just DNS-generated flow solutions on supercomputers. This data flood has started to fundamentally change the modern research landscape from ‘theory-driven’ to ‘data-driven’. The scope of this EPSRC-funded, UK Fluid Network summer school is to provide training in the state-of-the-art modern research tools applicable to this data revolution for PhD students and postdoctoral researchers in the UK. Four days of lectures and tutorials will be delivered by the world-leading experts in each area.

Topics include:

- Proper orthogonal decomposition and its variants
- Model reductions for hydrodynamic instabilities
- Dynamic mode decomposition
- Koopman mode decomposition
- Resolvent mode analysis
- Exact coherent states, periodic orbits and state-space visualisations

Confirmed Invited Lectures

Tim Colonius (Caltech)
Shervin Bagheri (KTH, Stockholm)
Peter Schmid (Imperial)
Steven Brunton (Univ. Washington)
Beverley McKeon (Caltech)
Ati Sharma (Southampton)
Rich Kerswell (Cambridge)
Ashley Willis (Sheffield)

Organisers

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Registration will open in March 2019 at
<https://fluids.ac.uk/sig/FlowInstability>