

Advanced CFD and Turbulence Modelling targeting HPC

October 14–16, 2025

14 October

10:00 - 10:15	Reception and registration
10:15 - 10:30	Introduction and welcome by the organisers
10:30 - 11:00	Lecture: Coupling for Multiphysics – Guillaume Houzeaux (BSC)
11:00 - 11:30	Coffee Break
11:30 - 12:00	Lecture: Presentation of the CFD tool, code_saturne – Stefano Rolfo (UKRI-STFC)
12:00 - 13:30	Hands-on tutorial: Laminar flow in a 2-D bundle of tubes
13:30 - 14:30	Lunch
14:30 - 15:30	Lecture: Preparing a CFD software for exascale – Charles Moulinec (UKRI-STFC)
15:30 - 16:00	Coffee Break
16:00 - 18:00	Hands-on tutorial: LES and CHT in a 3-D bundle of tubes

*Dinner at 20:30 - Address to be confirmed

15 October

10:00 - 11:00	Lecture: Advanced turbulence modelling and CHT – Wei Wang (UKRI-STFC)
11:00 - 11:30	Coffee break
11:30 - 13:00	Hands-on tutorial: Analysis of the LES and CHT results
13:00 - 14:00	Lunch
14:00 - 15:45	Hands-on tutorial: Turbomachinery using code-code coupling
15:45 - 16:15	Coffee break
16:15 - 18:00	Hands-on tutorial: Turbomachinery using code_saturne's internal module

*Dinner at 20:30 - Address to be confirmed

16 October

09:00 - 09:30	Hands-on tutorial: Analysis of the results of the turbomachinery simulations
09:30 - 10:30	Hands-on tutorial: Performance assessment: partitioning and hybrid MPI-X
10:30 - 11:00	Coffee break
11:00 - 11:30	Lecture: Introduction to GPU programming in code_saturne by Yvan Fournier (EDF)
11:30 - 13:00	Hands-on tutorial: Test on GPUs
13:00 - 14:00	Lunch
14:00 - 15:00	Hands-on tutorial: In-situ visualisation using code_saturne