Agenda – CFD with OpenFOAM®

Monday

08:30 - 09:00	Local registration
09:00 - 13:00	Introduction to batch scripting and Linux basics for OpenFOAM® usage as well as overview of case structure.
13:00 - 14:00	Lunch break
14:00 - 18:00	Hands-on sessions: Run first cases with introduction to ParaView, an open source vtk viewer to visualise your simulation results.

Tuesday

09:00 - 13:00	Lectures on theory of meshing with introduction to basic mesh structure of OpenFOAM®. Hands-on sessions: Create hexahedral meshes with the basic mesher blockMesh.
13:00 - 14:00	Lunch break
14:00 - 18:00	Introduction to snappyHexMesh and cfMesh. Hands-on sessions: Create meshes with snappyHexMex and cfMesh. Learn how to import meshes from other sources.

Wednesday

09:00 - 13:00	Introduction to the theory of the finite volume method. Lectures explain spatial and temporal discretization concepts including an introduction of boundary conditions. OpenFOAM® basic application solvers simpleFoam and pisoFoam are a further key aspect.
13:00 - 14:00	Lunch break
14:00 - 18:00	Hands-on session: Apply different solvers and boundary conditions and learn the advantages of a variety of tools (OpenFOAM® specific functions) and utilities helping you in the process.

Thursday

09:00 - 13:00	Swak4Foam for enhancing simulation work flows is introduced with different hands-on sessions. The second part highlights basic code structure of OpenFOAM® for installation and compilation.
13:00 - 14:00	Lunch break
14:00 - 18:00	Hands-on session: Learn how to modify solvers, turbulence models and utilities at source code level (programming and compiling) to fit your own needs.

Friday

09:00 - 13:00	Introduction and remarks to parallel simulation with MPI. Hands-on sessions: Parallel simulation of diffuser case and modifying own utility for parallel execution. Introduction to turbo-machinery. Hands-on session part I: Set up a complete case with stator-rotor region including meshing and pre-processing steps.
13:00 - 14:00	Lunch break
14:00 - 15:30	Hands-on session part II: Continue the pre-processing steps for the stator-rotor case, run the case and do effective post-processing.