

The practical exercises discussed during the Short Course rely on three open-source software packages, which need to be installed on students' private computers ahead of the course. For the generation of the geometry, meshing of the domain and preparation of the surfaces on which boundary conditions will be set, the **GMSH** package is used, which can be downloaded [here](#). For the actual Computational Fluid Dynamics simulations one of the (equivalent) **OpenFOAM** distributions may be selected [here](#) or [here](#). Visualization and initial post-processing of the CFD results will be done using **ParaView**, which can be downloaded [here](#).

Actual installation instructions depend on the operating system on which the students' computer runs. GMSH is known to run on Windows, various Linux and the MacOS operating systems. OpenFOAM on Windows is distributed by [blueCFD](#) and various Linux emulators, while it can be installed from source on any Linux distribution and through a [Docker](#) container on Mac. ParaView provides native Windows, Linux and Mac binary downloads.

No simulation files need to be prepared by the students, as all files required for the practical exercises will be provided. However, it is advisable that students gather some experience running the CFD software ahead of the Short Course. Both OpenFOAM distributions provide full user guides and in-depth documentation on their respective websites. In addition, once OpenFOAM has been installed, a comprehensive list of solved cases can be found in the examples folder. Plenty of resources are also available online, ranging from learning through study of test cases, e.g. [here](#) or [here](#) (including examples of the rhoCentralFoam solver used in the Short Course), to comprehensive training offered by companies, e.g. [here](#) or [here](#). If students are interested in the Finite Volume method used by OpenFOAM (and most of commercial software) to solve the equations of motion, a comprehensive resource, which can also be used in conjunction with the course notes provided, can be found [here](#).

As a disclaimer, the lecturers of this Short Course are not related in any way with any of these websites and only provide the links as indication of online resources.