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Using the Open Source CFD GUI in FreeCAD

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The computational fluid dynamics (CFD) workbench for FreeCAD was developed to provide South African industry and academia with a cost-effective solution for modelling fluid flow. This workbench aims to help users set up and run CFD analyses. It guides the user in selecting the relevant physics, specifying the material properties, generating a mesh, assigning boundary conditions and setting the solver settings before running the simulation. Where possible, best practices are included to improve the stability of the solvers.

During the workshop, we will give an overview of the technology and demonstrate how to:

Create the geometry; Selection of simulation parameters;

Specify boundary conditions; Unstructured mesh generation;

Initiate the run and monitor residuals; and Visualise the results

The CFD workbench is available as an add-on to FreeCAD while more information on the workbench as well as, additional, training material are available on the OpenSim community website: <https://opensimsa.github.io/>

HPC content

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