

FICHE TECHNIQUE PFE Master2

Filière : Energies renouvelables

Spécialité: Energétique

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Enseignant(s)					
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Thème :

Study of three-dimensional flow in a mini-channel with OpenFOAM

Problématique

This work involves studying 3D laminar and turbulent flow in a mini-channel. This study will be compared to 2D simulations carried out with "Fluent" as well as to available experimental results carried out by A. Hamami (Magister 2005). A very significant part will be devoted to meshing the complex three-dimensional geometry.

The tool that will be used in this work is the free parametric 3D design software "FreeCAD". The simulation will be done inside "FreeCAD" using the "CfdOF" workbench which uses the "CfMesh" mesher and the "OpenFOAM" solver.

Plan de travail

- 1- Bibliographic study on flows in mini-channels.
- 2- Getting started with the free softwares "FreeCad", "CfdOF" and "ParaView".
- 3- Design of the 3D experimental model with "FreeCAD".
- 4- Search for a suitable mesh and simulations with "CfdOF".
- 5- Visualization of the results with «ParaView».
- 6- Writing the dissertation with « LibreOffice » software.

Adjoint Chef de département
chargé de la pédagogie

Engagement de l'encadreur
18/09/2023

CSD / Génie mécanique.