

Investigating the effect of wall-mounted V-baffle position in a turbulent flow through a channel

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Abstract

Obstacles like baffles are commonly used in shell and tube heat exchangers to support tubes and enhance heat transfer. The project aims to migrate the study by Menni et al[1] using the open-source CFD package OpenFOAM. The K-epsilon model was used to simulate the test case. Figure 1 shows the geometry that was used for the simulation. The geometry and mesh have been generated by using `blockMesh` utility. Turbulent flow in the geometry has been solved by using `buoyantSimpleFoam` solver. The values for S were changed to investigate the effect of wall-mounted V-baffle position. Menni et al were studied the effect of these different values of S on the heat transfer behavior in the channel.

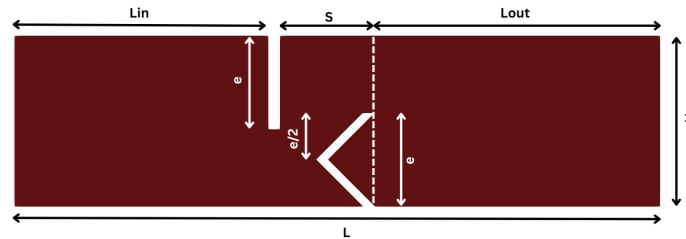


Figure 1: Geometry of channel

References

- [1] Younes Menni, Ahmed Azzi, Ali J. Chamkha, and Souad Harmand. Effect of wall-mounted v-baffle position in a turbulent flow through a channel. *International Journal of Numerical Methods for Heat Fluid Flow*, 29, 2018.