Studying Control of Weir Flow by Changing Weir Geometry and Modelling the Flow Over a Weir in OpenFOAM

Project Team

Laxman Desai	Sarthak Bhardwaj	Sagar Yadav	Krutarth Dhaduk
190020066	190040106	19D180026	19D170012

Abstract

Topic: #6. Flow in a horizontal channel with the exit partially blocked by a weir under laminar and turbulent conditions.
Our project aims to study flow across a weir. We will try and understand how various variables such as height of weir, height of fluid over weir, width of weir, velocity of stream and weir geometry affects the flow rate through the weir. More emphasis will be on the geometry and its effects on the flow, and how flow can be controlled by altering the geometry of the structure.

The range of computation will mostly involve varying the Reynolds number of fluid between Laminar and Turbulent flows, adjusting the structure width and height of water above the weir and possibly the velocity of the stream. Upon completion we should be able to comment on the relation between geometry and flow rate. We will also be able to generate flow patterns varying with Reynolds number.