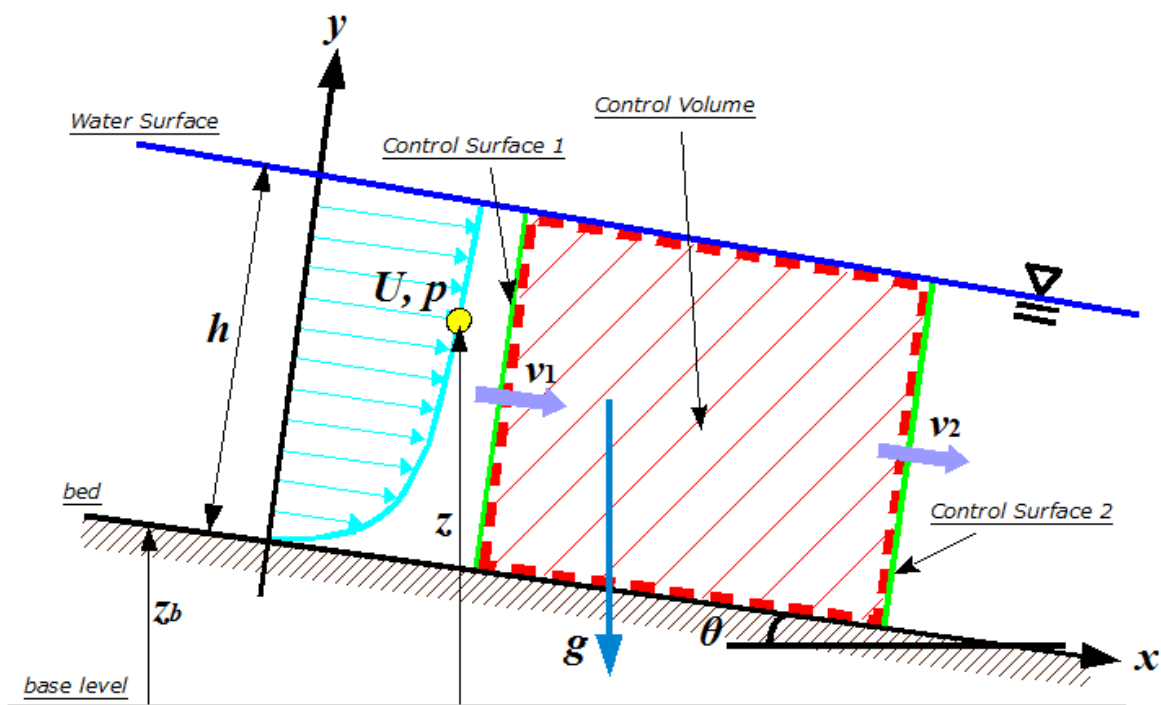


# ABSTRACT

Aim of this report is to develop Simulation using OpenFOAM(paraview) for the open channel flow case. Inclination of channel & velocity's value are changed in order to obtain different result. An open channel flow denotes flow with a free surface touching to the atmosphere. Examples: Rivers, canals, spillway, weirs etc. they are driven by only gravity force. Force balance is between gravity and friction. The common fluid in this kind of problems is water and the size of the channels is usually big and with turbulent flow.

## Problem Statement

Simulation for Turbulence water flow over inclined open channel in order to analyse the behaviour of the fluid, open channel which is about 1 m high and about 100 m long.



Following constant values are required to solve problem.

- Kinematic viscosity( $\nu$ ):  $1.48e-05$  (air)
- Kinematic viscosity( $\nu$ ):  $1e-06$  (water)

- Density( $\rho$ ):  $1000 \text{ kg}/(\text{m}^3)$  -For Water
- :  $1 \text{ kg}/(\text{m}^3)$  – For Air
- surface tension between air and water is defined as  $\sigma$  and its value is specified to 0.07 (adopted)
- gravity :  $9.8 \text{ m}/(\text{s}^2)$