Numerical simulation of tank leak with sludge Interference in openFOAM

Abstract

This case study aims to numerically simulate the fluid behavior with in the tank when there is a crack or leakage .the flow behavior in the fluid domain and the sludge interference is analyzed .the simulation is carried out in openFOAM v6 using the solver interMixingFoam .the geometry is a 2-D rectangle and the flow is transient and laminar .

Problem statement

The 2D geometry has a rectangular section with the negligible thickness .the water column is placed on the left side – the place where the leakage propagates. The top is exposed to atmosphere.