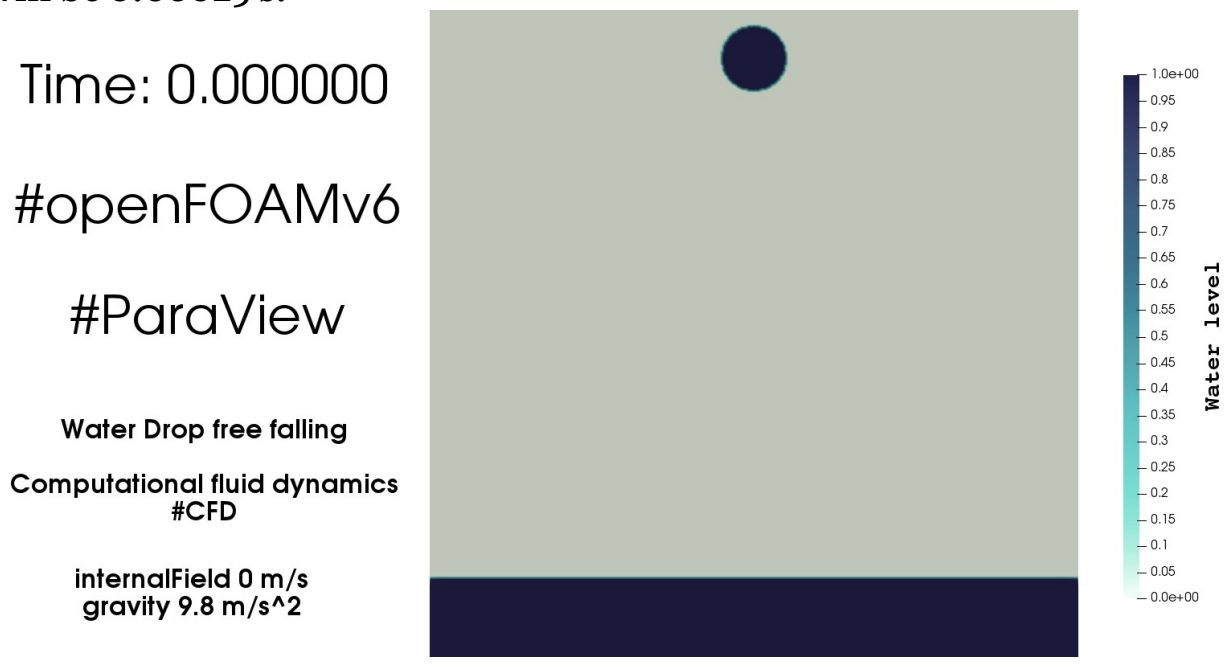
Falling of water droplet on the pool of water

Abstract - This case study demonstrates the simulation of freely falling of a water droplet on the pool of water. The specific case study is designed such that the properties of the system are similar to those of raindrops falling through the air. The study of raindrops is interesting from both an engineering standpoint and from a standpoint of pure curiosity. 2D case model of a water droplet is made with SALOME-9.2.0 mashing tool and setfieldsdict. The whole case study run in OpenFOAMv6. The behaviour of the Impact of a water droplet on the water surface and topoligical changes in droplet itself is observed in results.

Problem Statement

Radius of water drop is defined with setfieldsDict in a 2D environment of Air. Water will freely drop on surface of pool. Water level is taken 0.005m deep and distance between center of water drop and surface of pool is 0.032m. deltaT will be 0.00001 s and write interval will be 0.00025 s.



Radius of water drop:	0.002 m
Solver:	InterFoam
Internal field velocity:	0 m/s
Gravity:	9.8 m/s^2