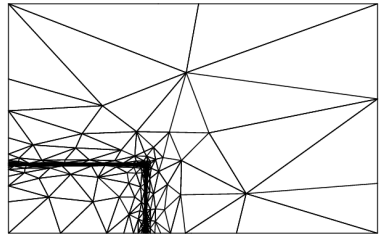
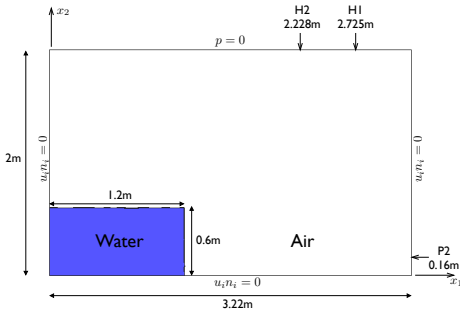


Water collapse

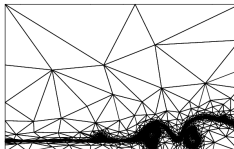
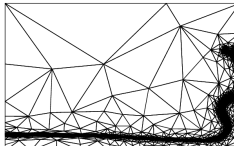
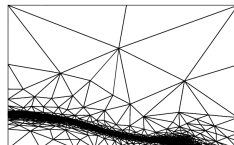
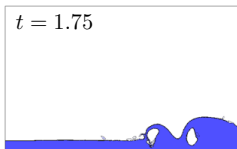
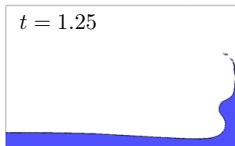
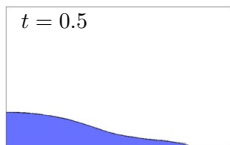
- ▶ Fluidity is used to replicate a laboratory experiment of a collapsing column of water within an atmosphere of air (Lakehal et al., 2002).
- ▶ A reservoir of water is initially held behind a barrier.
- ▶ The water column collapses and floods the rest of the tank when the barrier is quickly removed.

Water collapse - Simulation setup

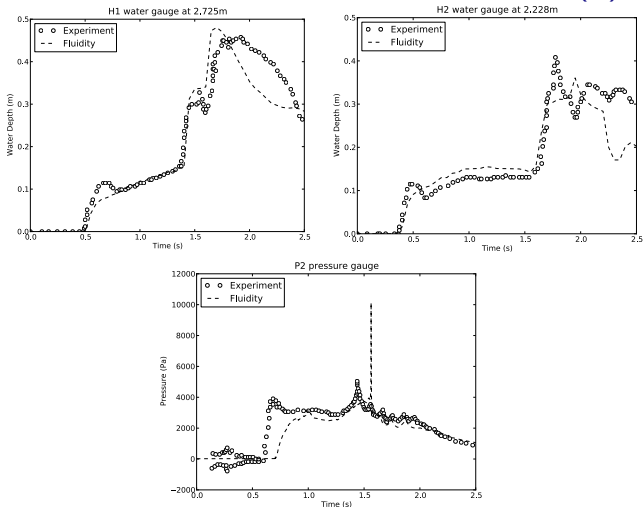
- ▶ The multi-material approach is used to represent the two fluids.
- ▶ The flow is assumed to be incompressible, inviscid, and 2D.
- ▶ Free-slip boundary conditions on the sides and open top.



Water collapse - Numerical results (1)



Water collapse - Numerical results (2)



Water collapse - Exercises

- ▶ Disable the adaptivity option to run on a fixed mesh.
- ▶ Alter the water/air viscosity/density.
- ▶ Modify the tank geometry.