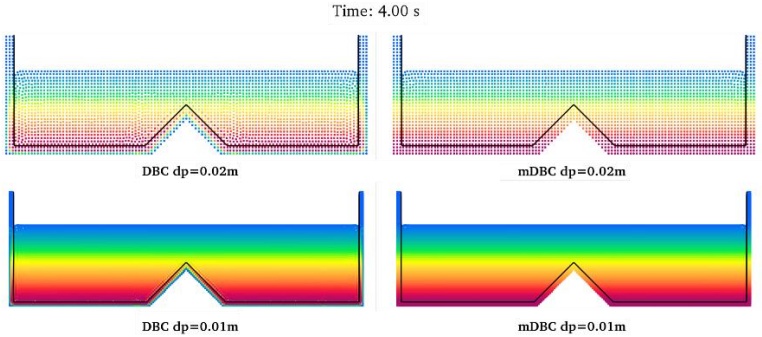
Testcases (main/mdbc) included in the full DualSPHysics package v5.2 in http://dual.sphysics.org/index.php/downloads/

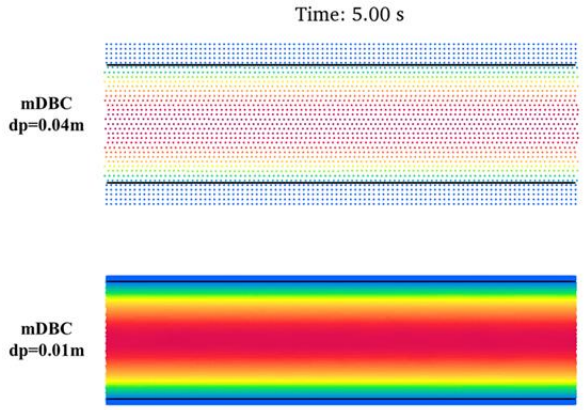
01_StillWege

- A 2-D still water tank encloses a trigonal wedge in the bottom centre of the tank with. A low value of artificial viscosity is used to observe better the effects and noise generated by the different boundary conditions (DBC and mDBC). Video



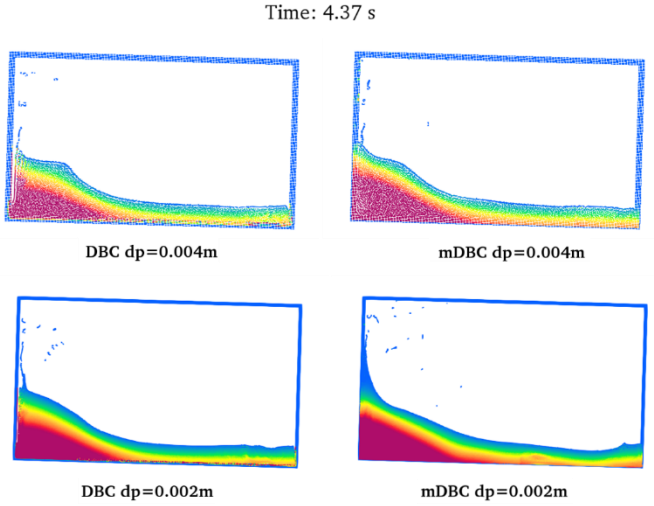
2_Poiseuille

- Poiseuille flow is simulated with the boundary walls located at z=±0.5m, the maximum velocity is U= 1m/s and the viscosity is ν=0.1m^2/s resulting in a Reynolds number of Re=10. Video



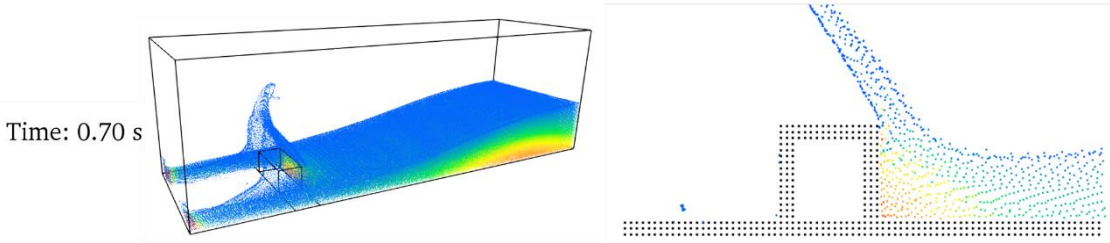
3_Sloshing

- The case will reproduce a sloshing experiment that includes moving boundaries: SPHERIC Benchmark Test Case #10. Video



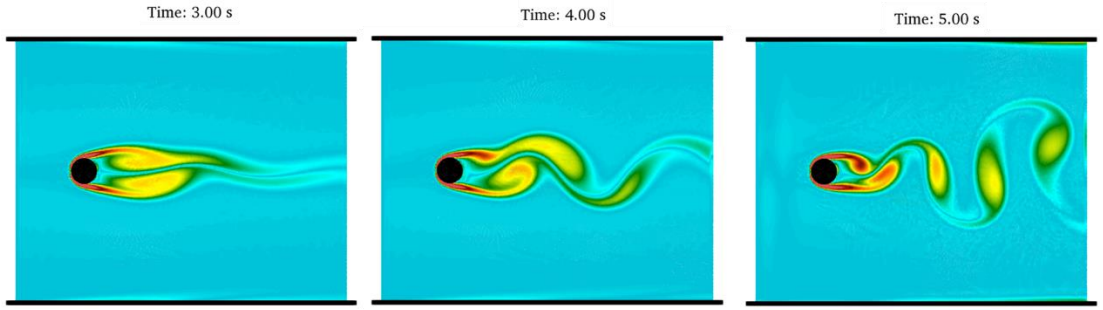
04_DAMBREAK

- 3-D dam break experiment that includes moving boundaries proposed as SPHERIC Benchmark Test Case #2. Video



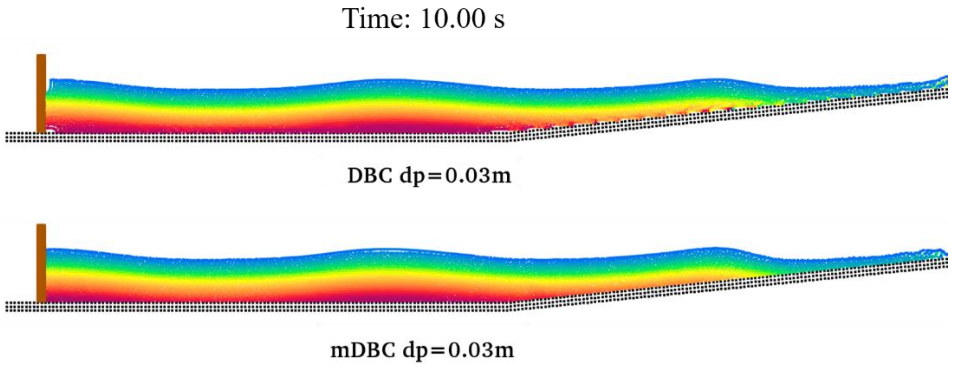
05_FLOWCYLINDER

- 2-D flow passing a cylinder of diameter D=0.2m, which is surrounded by a viscous fluid. Dimensions of the fluid domain are chosen to minimise boundary effects. The fluid is initialized with a constant velocity of U=1m/s and with Re=200.
- The circle is created using the Free Draw Mode instead of the Cartesian grid. Video



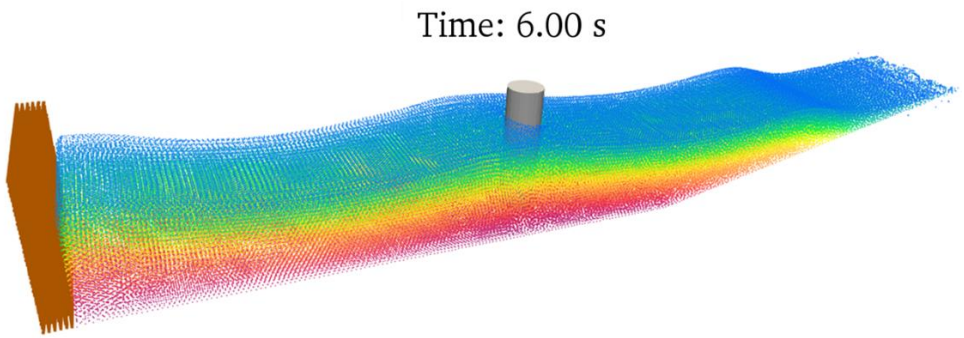
06_WAVETANK

- 2-D regular waves are generated and propagated in a numerical wave flume using DBC and the new mDBC.
- The beach is created using the Free Draw Mode instead of the Cartesian grid. Video



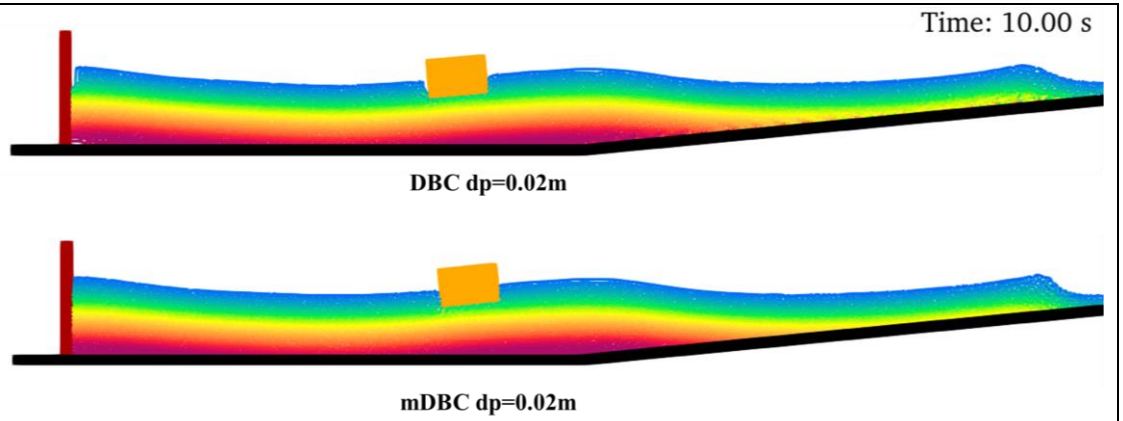
07_WAVESCYLINDER

- 3-D regular waves (H=0.1m, T=1.2s, d=0.5m) passing a cylinder of diameter D=0.2m and 0.7m high located in the middle of a wave flume.
- The cylinder is created using the Free Draw Mode instead of the Cartesian grid Video



08_FLOATINGWAVES

- 2-D floating box under the action of regular waves with piston.
- The beach is created using the Free Draw Mode instead of the Cartesian grid.
- mDBC is applied not only to the tank and piston, but also to the floating box.
  Video



09_FLOATINGDUCK

- 3-D floating external STL (duck) in a square tank using DBC and mDBC.
- mDBC is applied to an external STL using advanced tools during pre-processing in order to create normal vectors and to fill the geometry with floating particles.
  Video