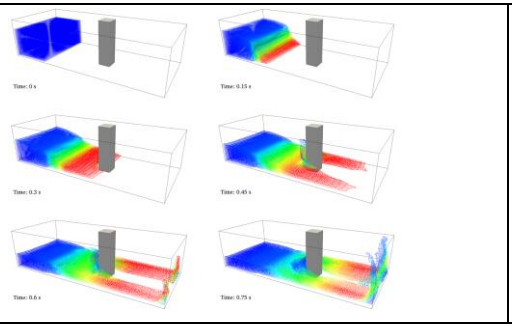
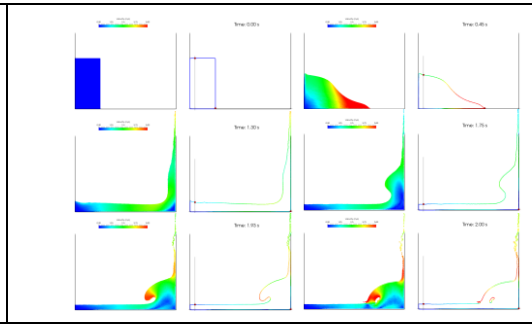
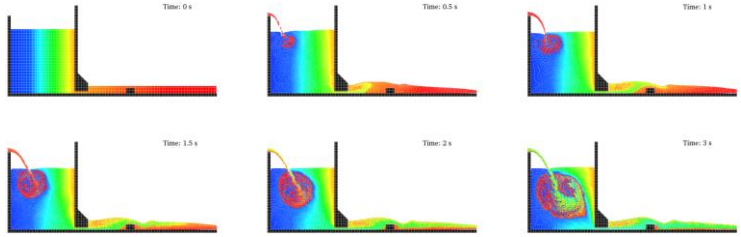
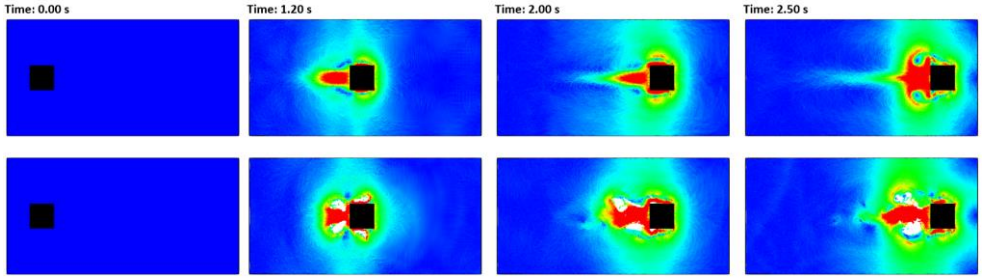
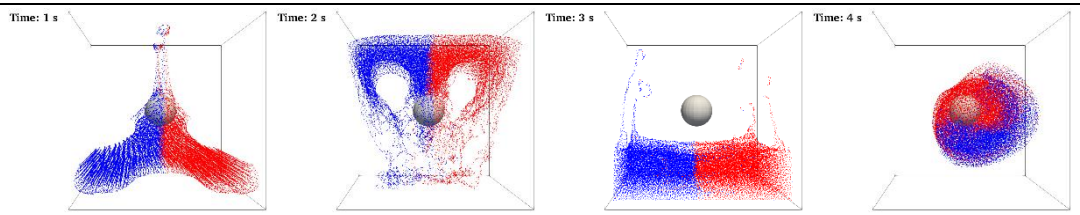
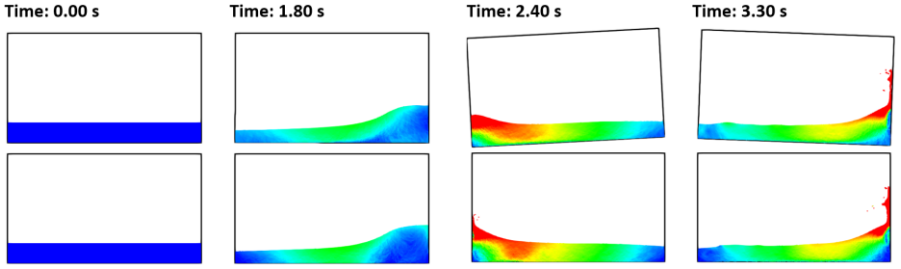
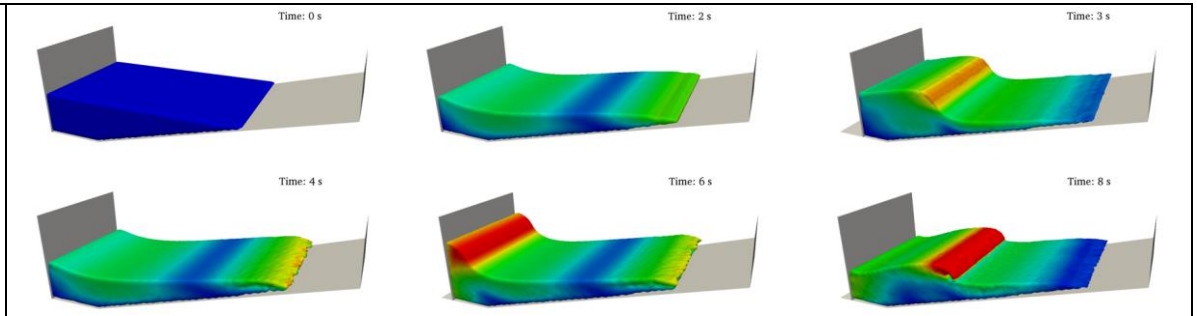
Testcases (examples/main) included in the full DualSPHysics package v5.2 in http://dual.sphysics.org/index.php/downloads/

01_DAMBREAK • 3-D dam break flow impacting on a structure: numerical velocity, pressure and force are computed. Video • 2-D dam break and validation data from [Koshizula and Oka, 1996] experiment. Video	 
02_PERIODICITY • 2-D case with Periodicity in X direction. Video Density diffusion term is applied.	
03_MOVINGSQUARE • 2-D case with square that moves with rectilinear movement. Video Example with no gravity; parameter "b" needs to be specified by the user. Shifting is used for this internal flow (no need to detect free surface).	
04_EXTERNALFORCES • External acceleration is loaded from a file and applied to two different volumes of fluid. Video Density diffusion term is applied.	
05_SLOSHINGTANK • 2-D sloshing tank that reads the rotational movement of the tank itself from a file. Video • 2-D sloshing tank that reads external acceleration from a file. Validation with SPHERIC Benchmark #10 where pressure is computed. Density diffusion term is applied.	

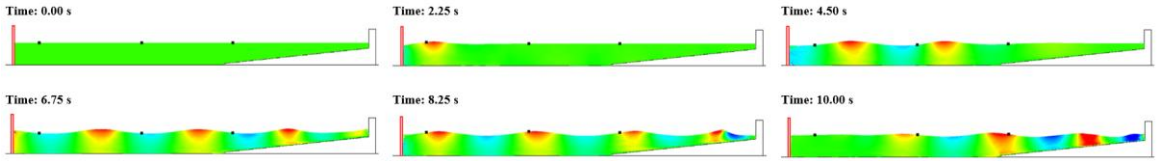
06_WAVEMAKER

- 3-D tank with Periodicity in Y direction and piston with sinusoidal movement. Video
  Density diffusion term is applied.



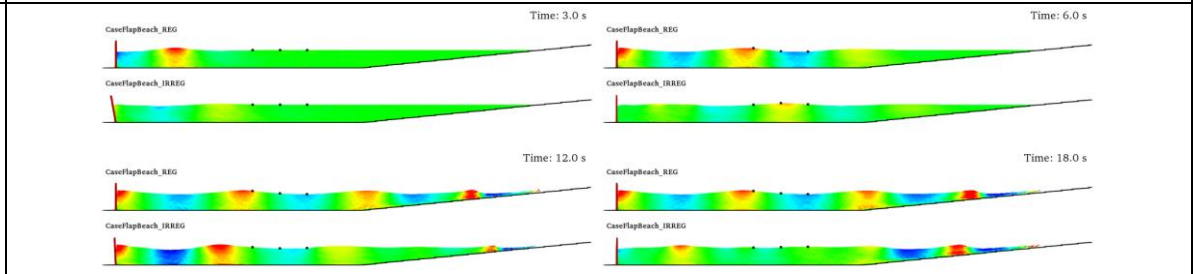
07_WAVEMAKERFILE

- 2-D tank with piston motion loaded from external file and external structure (STL). Video
  Validation data from CIEMito experiment: numerical computation of wave surface elevation and force exerted onto the wall.



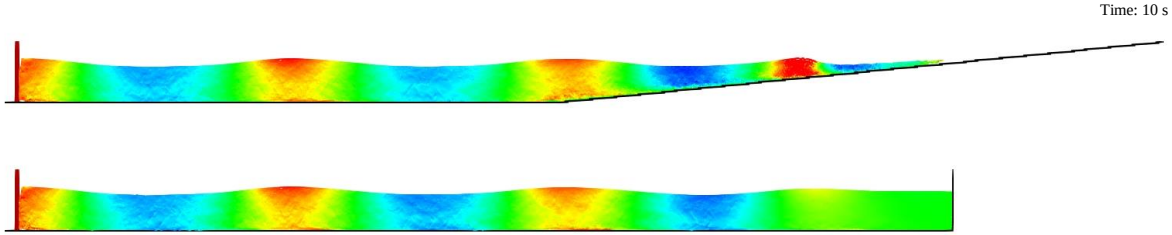
08_WAVESFLAP

- 2-D regular waves generated with flap and comparison with 2nd order wave theory (beach). Video
- 2-D irregular waves generated with flap and comparison with 2nd order wave theory (beach).



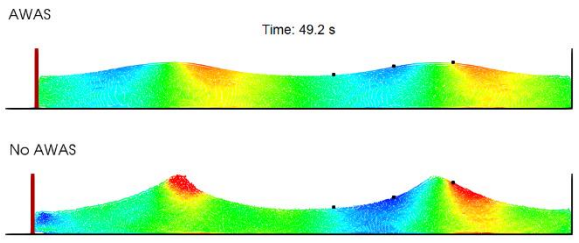
09_WAVESPISTON

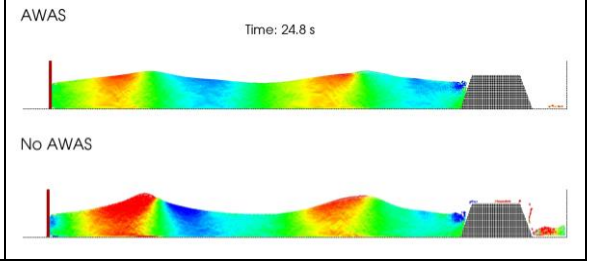
- 2-D regular waves with piston and comparison with 2nd order wave theory (beach & damping). Video
- 2-D irregular waves with piston and comparison with 2nd order wave theory (beach & damping). Video



10_WAVESPISTONAWAS

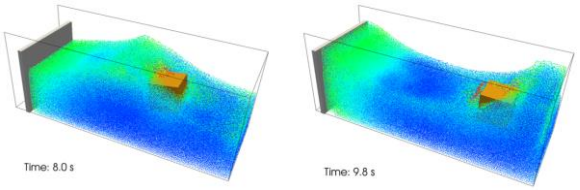
- 2-D regular waves generated with piston interacting with a vertical wall with and without AWAS. Forces against the wall and dike with and without AWAS are compared. Video
- 2-D regular waves generated with piston interacting with a trapezoidal dike with and without AWAS. Forces against the wall and dike with and without AWAS are compared. Video

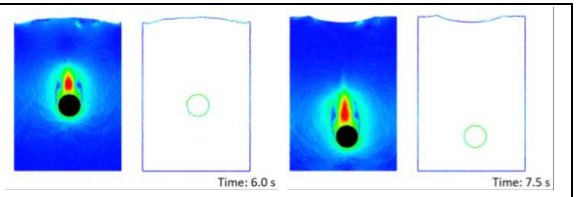




11_FLOATING

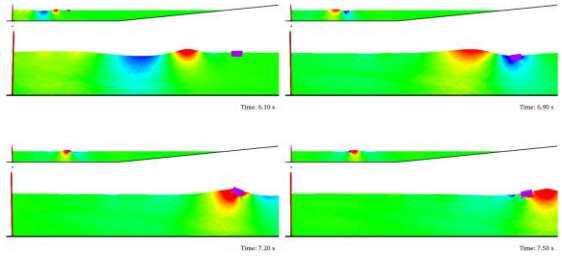
- 3-D floating box in a wave tank with Periodicity in Y direction and piston with sinusoidal movement. Delta-SPH is used. Video
- 2-D falling sphere that uses laminar+SPS viscosity. Validation data from [Fekken, 2004] and [Moyo and Greenhow, 2000]. Video

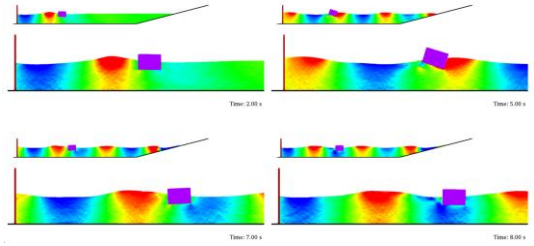




12_FLOATINGWAVES

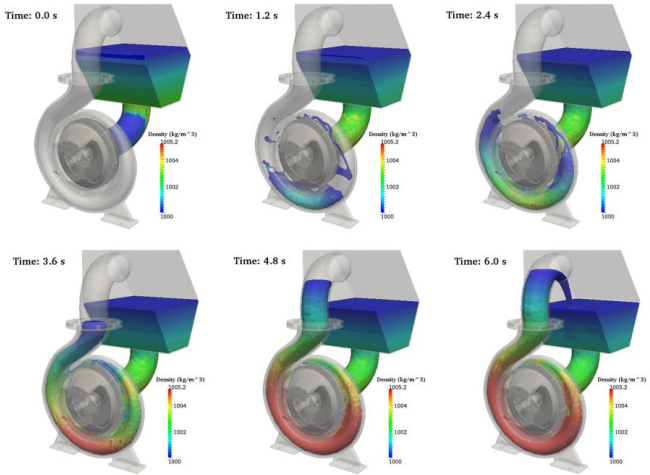
- 2-D floating box under the action of non-linear waves with flap that reads rotational motion from a file and uses laminar+SPS viscosity. Video
  Validation data (motions of the box) from [Hadzic et al., 2005].
- 2-D floating box under the action of regular waves with piston. Video
  Validation data (motions of the box) from [Ren et al., 2015].





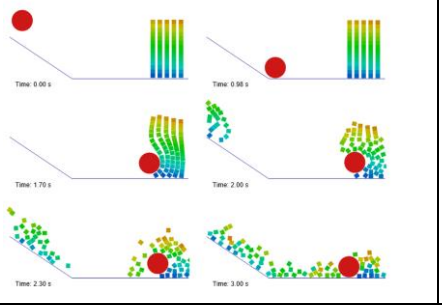
13_PUMP

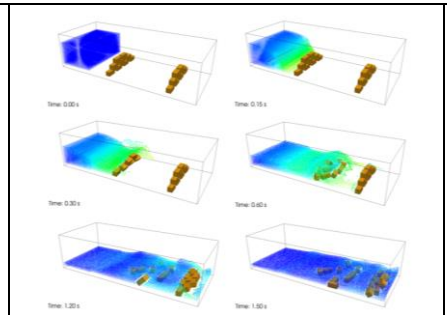
- 3-D external geometries are imported (STL) and filling algorithm is used. Rotational movement is imposed. Video

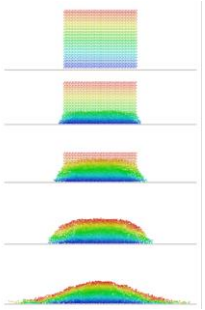


14_DEM

- 2-D case only with DEM of a ball that impacts with blocks. Example without fluid particles. Video
- 3-D dam-break and blocks where interaction between blocks and with walls used DEM and properties of materials. Video
- 2-D case with 2000 floating objects that interact in terms of DEM approach. Video

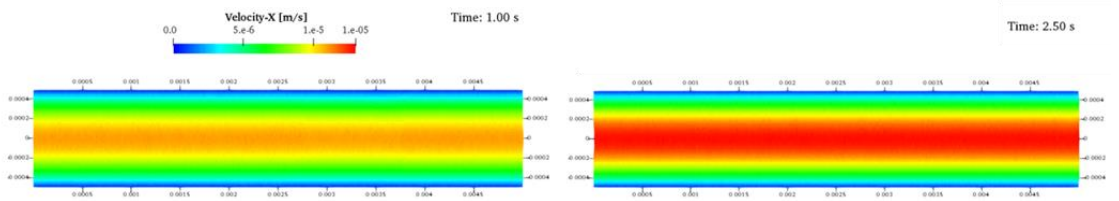






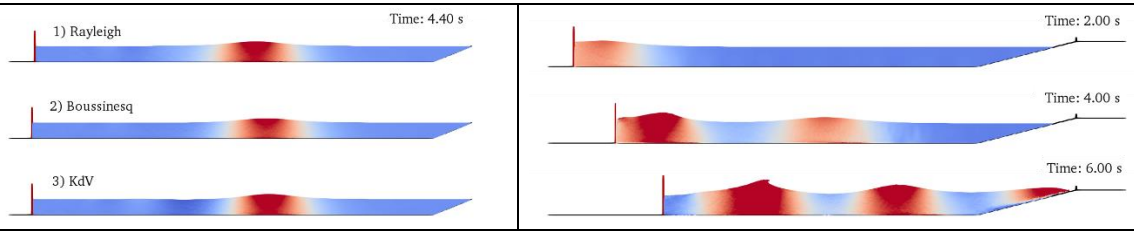
15_POISEUILLE

- 2-D case of Poiseuille flow with laminar+SPS viscosity and using high resolution. Video



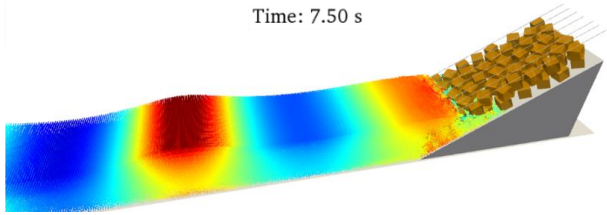
16_SOLITARYWAVES

- 2-D solitary wave generated with 3 different theories. Video
- 2-D case of triple solitary waves. Video



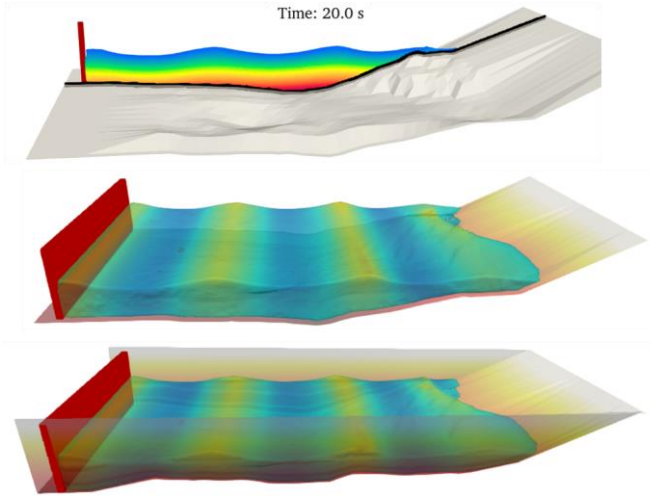
17_WAVERUNUP

- 3-D regular waves interacting with a layer armour breakwater (STL)
- Gauge system is used to compute Run-up. Video
  Validation data from CIEMito: wave surface elevation and wave run-up.



18_BATHYMETRY

- 2-D simulation of regular waves using bathymetry automatically generated from XYZ points.
  Video
- 3-D bathymetry automatically generated starting from XYZ points for open periodic conditions.
- 3-D bathymetry automatically generated starting from XYZ points for closed domain.
  Video



19_FocusedWaves

- 2-D focused waves are generated with piston following the NewWave theory [Whittaker et al. 2017].
  Video