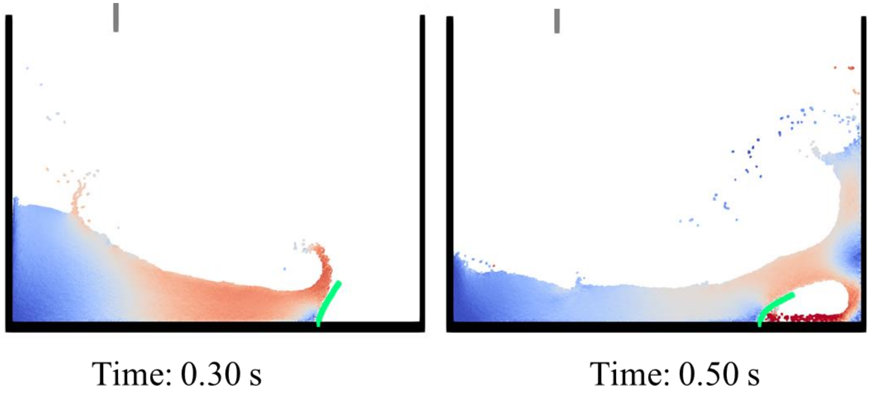
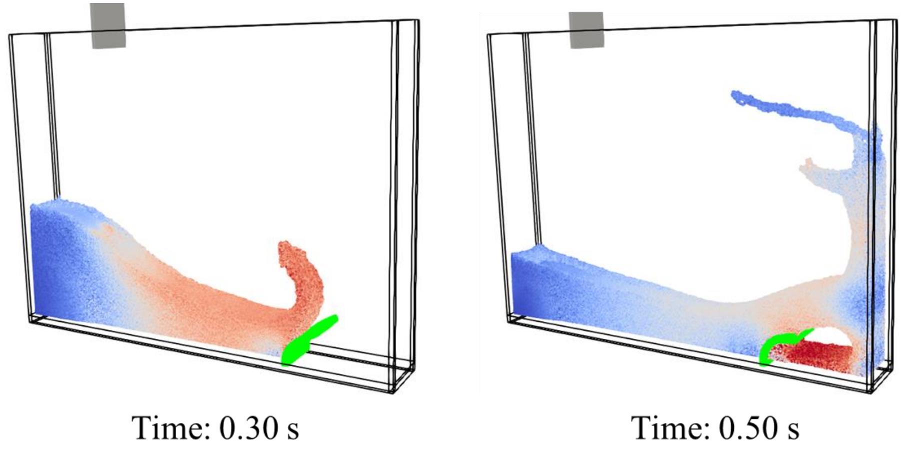
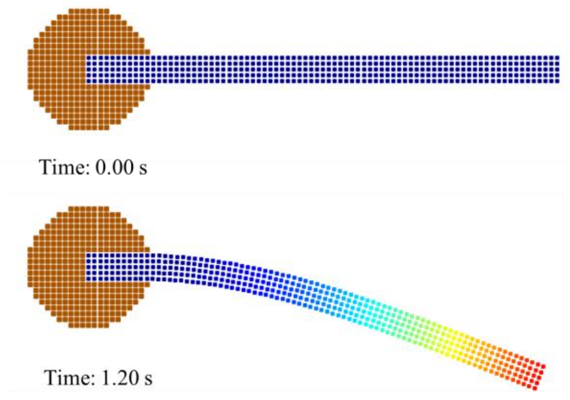
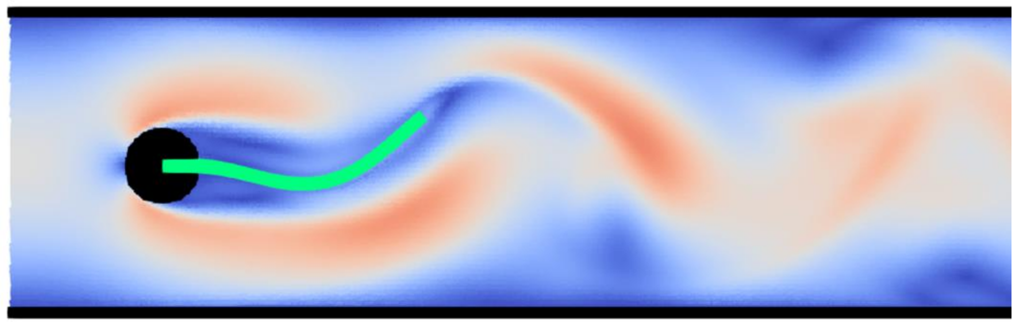
Testcases (examples/flexstruc) included in the full DualSPHysics package v5.2 in http://dual.sphysics.org/index.php/downloads/

01_DamBreak **CaseDambreak2D_FSI** • A 2-D reproduction of a dam break impacting an elastic plate. • The setup is based on the experiment of Liao et al. (2015). However, the plate thickness and Young's modulus have been modified for this example. • Realistic gate motion is also imposed to initiate the dam break. Video	
01_DamBreak **CaseDambreak3D_FSI** • A 3-D reproduction of a dam break impacting an elastic plate. • The setup is based on the experiment of Liao et al. (2015). However, the plate thickness, Young's modulus and spanwise (y-direction) length of the domain have been modified for this example. • Realistic gate motion is also imposed to initiate the dam break. Video	
02_TurekHron **CaseTurekHronCSM3** • A reproduction of the CSM3 benchmark case from Turek & Hron (2006). • The case consists of a 2-D clamped cantilever beam oscillating under gravity. Video	

02_TurekHron

CaseTurekHronFSI2

- A reproduction of the FSI2 benchmark case from Turek & Hron (2006).
- The case consists of a 2-D clamped cantilever beam attached to a 2-D cylinder embedded in a channel flow.
- The Reynolds number is 100, which leads to vortex shedding in the wake of the cylinder. These instabilities interact with the flexible beam, which ultimately leads to a self-sustaining flapping motion.
  [Video]

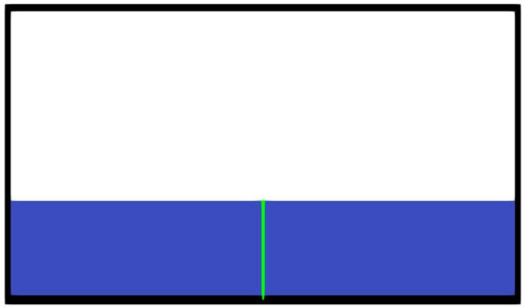


Time: 15.00 s

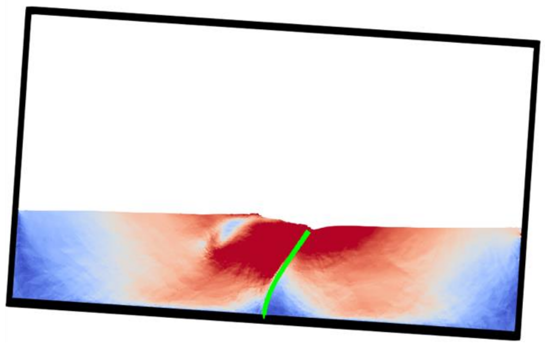
03_RollingTank

CaseRollingTankDeep

- A 2-D reproduction of the rolling tank experiment from Idelsohn et al. (2008), with an elastic beam attached to the bottom of the tank.
- The case consists of a standing beam in a deep oil solution so that the tip of the beam is flush with the top of the fluid level.
- The real tank motion from the experiment is imposed and the rolling frequency is set to match the critical sloshing frequency of the tank.
- The natural frequency of the flexible is beam is also matched with the rolling frequency, leading to simple dynamics in the coupled fluid-structure interactions.
  [Video]



Time: 0.00 s

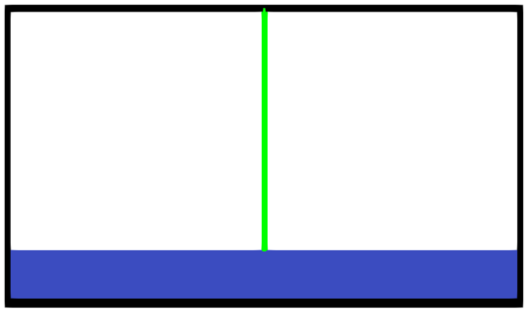


Time: 1.10 s

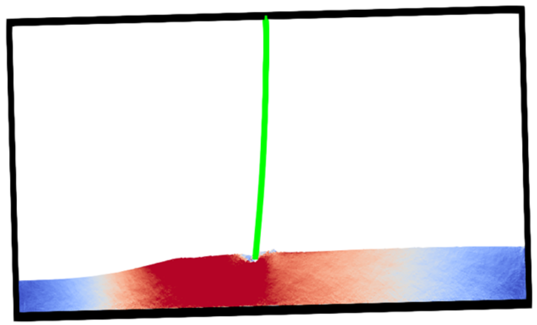
03_RollingTank

CaseRollingTankHanging

- A 2-D reproduction of the rolling tank experiment from Idelsohn et al. (2008), with an elastic beam attached to the top of the tank.
- The case consists of a hanging beam in a shallow water solution so that the tip of the beam is flush with the top of the fluid level.
- The real tank motion from the experiment is imposed and the rolling frequency is set to match the critical sloshing frequency of the tank.
- The natural frequency of the flexible is beam is different from the rolling frequency, leading to chaotic dynamics in the motion of the beam as it is impacted by the sloshing waves generated by the tank motion.
  [Video]



Time: 0.00 s



Time: 2.10 s