

Description of Additional Supplementary Files

File Name: Supplementary Movie 1

Description: Tsunami simulations. MPM simulations of a gravity-dominated fall of an iceberg (GF, top), buoyancy-dominated fall (BF, middle) and capsizing (CS, bottom) calving mechanisms. The color represents the velocity of water particles (blue=0m/s; red=0.6 m/s).

File Name: Supplementary Movie 2

Description: Effect of buoyancy on iceberg size. MPM simulations of glacier calving for $H_i=200\text{m}$ and $D/H_i=0.2$

File Name: Supplementary Movie 3

Description: Calving-induced tsunami at the Equip Sermia glacier MPM simulation of the Equip Sermia glacier calving and tsunami generation and propagation. The water is colored by velocity: blue and red indicate water with zero velocity or moving at 20 m/s, respectively. The blue color in the glacier represents particles for which the yield criterion was met (plastic deformation). The ice cliff height is about 200 m and the water depth in the main fjord is about 125 m

File Name: Supplementary Movie 4

Description: Calving-induced tsunami at the Equip Sermia glacier—moving camera. Same as in Supplementary Movie 3 with a moving camera following the tsunami.

File Name: Supplementary Movie 5

Description: Calving of a generic tidewater glacier in 3D. Three dimensional simulation of glacier calving of a wide generic tidewater glacier. The ice cliff height is 150m and the water depth is 200 m.

File Name: Supplementary Movie 6

Description: Calving-induced tsunami in 3D. Three dimensional simulation of glacier calving and tsunami wave generation. The ice cliff height is 200 m and the water depth in the main fjord is 125 m.