

On the substantial influence of friction interpolation in the close vicinity of the grounding line. Supplementary material.

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1 New Elmer/Ice results for experiment P75D of MISMIP3d

This material is in the directory `ElmerIce_P75D` of the Supplementary Material. Each file contains 7 columns: x , y , z (coordinates, in m), u , v , w (velocity, in m a^{-1}), and the mask (1 if grounded, -1 if floating and 0 at the GL). The file name indicates its contain:

- the friction interpolation methods Last Grounded (**LG**), DIscontinuous (**DI**) or First Floating (**FF**),
- the boundary condition below the ice-shelf: buoyancy force equilibrium Eq. (1) (**pw**) or vanishing normal velocity Eq. (2) (**un0**),
- output for the upper (**zs**) or lower (**zb**) surfaces.

The mesh discretisation in the horizontal plane is given by the (x, y) coordinates. The 3D mesh is obtained from a vertical extrusion of the 2D footprint on 10 layers (11 nodes on the vertical). All other parameters follow the MISMIP3d setup for experiment P75D.

2 New Elmer/Ice results for experiment P75S and P75R of MISMIP3d

This material is in the directory `ElmerIce_P75RS` of the Supplementary Material. Each file contains 3 columns: t (time, in a), the GL position (in m) in $y = 0$ and

in $y = 50$ km. Lines for t from 0 to 100 a are for P75S and from 100 to 200 a for P75R. Note that the number of lines in each file might be different depending on the time step adopted for each simulation. The file name indicates its contain:

- the friction interpolation methods Last Grounded (**LG**), DIscontinuous (**DI**) or First Floating (**FF**),
- the lateral discretisation N_y : **20**, **40** or **80** elements.

The mesh discretisation in the longitudinal direction 50 m at the GL. The 3D mesh is obtained from a vertical extrusion of the 2D footprint on 10 layers (11 nodes on the vertical). All other parameters follow the MISMIP3d setup for experiments P75S and PS75R. The full output can be obtained by contacting directly the authors (the size of the outputs does not allow a storage in the Supplementary Material).