

Ice-flow sensitivity to sticky spots, side shear, and buttressing

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Longitudinal stresses, side shear, and oceanic backpressure have been combined with pre-existing vertical shear in the momentum balance within the PSU/UofC flowline model. This enables us to investigate the regional response of grounded-ice flow to variable resistance from the bed, lateral boundaries, and/or ice shelf, leading to an improved understanding of the thermodynamic impact of local and regional resistance to inland flow. We plan to direct our modeling efforts toward the interplay between basal lubrication, ice-shelf buttressing, and embayment geometry, and their evolving effects on the ice streams, outlet glaciers, and inland ice of Antarctica and Greenland.