



Grounding line migration analysed with a full Stokes model

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We present results of a numerical study of the grounding –line problem using a full Stokes solver (FS model) and a reduced model (SSTREAM model). Our experiments are motivated by the recent marine ice sheet model intercomparison project (MISMIP). In two dimensions this problem is characterized by a sharp transition in flow at the grounding line and it is imperative that the numerical treatment is able to sufficiently resolve the flow in the transition zone. As is common in contact problems of this type, care must be taken to ensure that results are independent of mesh resolution. We present and compare different treatments of the floating condition in the FS and the SSTREAM models and compare our results with available analytical steady-state solutions.