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# Benchmarks and intercomparison program for marine ice sheet models

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Recent years have seen a drastic increase in the number of numerical models designed to simulate marine ice sheet flow, and these have yielded some divergent results. To assess these results, we propose a model intercomparison exercise to take place during 2007. At the core of the intercomparison exercise will be the semi-analytic boundary layer results derived for marine ice sheets by Schoof (2007 & in press), which allow equilibrium ice sheet profiles to predicted with high accuracy and also provide a benchmark for the dynamic evolution of marine ice sheets to a steady state. The intercomparison exercise will examine not only how well different models — involving different discretizations and/or additional model physics — are able to reproduce these benchmarks, but also assess the effect of grid resolution on the results obtained, and seek to confirm the marine ice sheet hysteresis mechanism described by Schoof (in press).

## References

Schoof, C. 2007. Marine ice sheet dynamics. Part I: The case of rapid sliding. *J. Fluid Mech.*, 573, 27–55.

Schoof, C. in press. Ice sheet grounding line dynamics: steady states, stability and hysteresis. *J. Geophys. Res. Earth Surface*