Numerical modelling of Antarctic and Greenland ice sheets

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Not just a piece of ice
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Ice flow model: Stokes Equations

- Incompressible fluid
- No turbulence
- Glen’s flow law (stress-strain)
- Finite Element Method
- Elmer/Ice
My focus: the grounding line

- Where the grounded ice sheet becomes afloat:
My focus: the grounding line

- Important for upstream ice flow dynamics
- Hard to model without high resolution!
- High resolution grid or adaptive grid becomes too computationally expensive
- Aim: development of a sub-grid model
Thank you!