



ALFRED-WEGENER-INSTITUT
HELMHOLTZ-ZENTRUM FÜR POLAR-
UND MEERESFORSCHUNG

Modelling concepts of the Jakobshavn Isbræ and the Greenland Ice Sheet @AWI

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Modelling - multi-physics hybrid-scale approach

Full Stokes where full physics is required and in **high spatial resolution**

Approximations where approximations are not limiting the uncertainty projections of mass loss and in **low spatial resolution**

V

PISM

B

TIMFD³

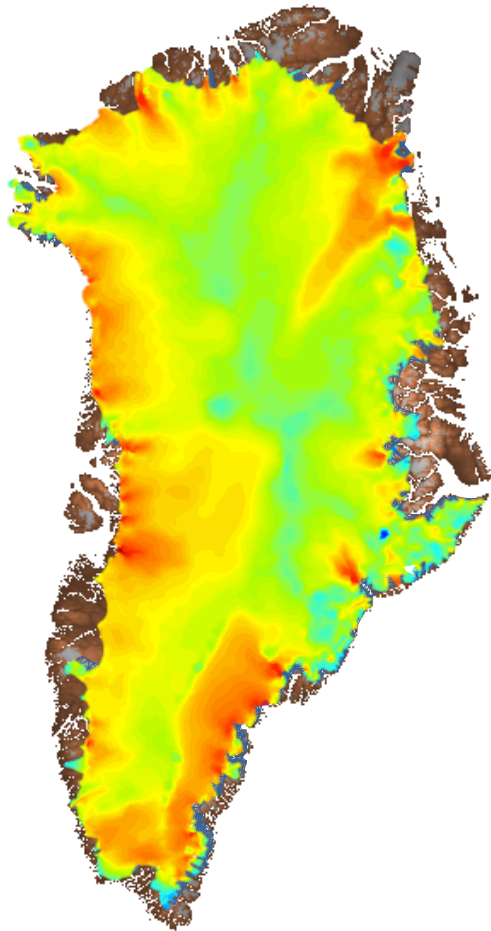
4

COMice

C

ISSM

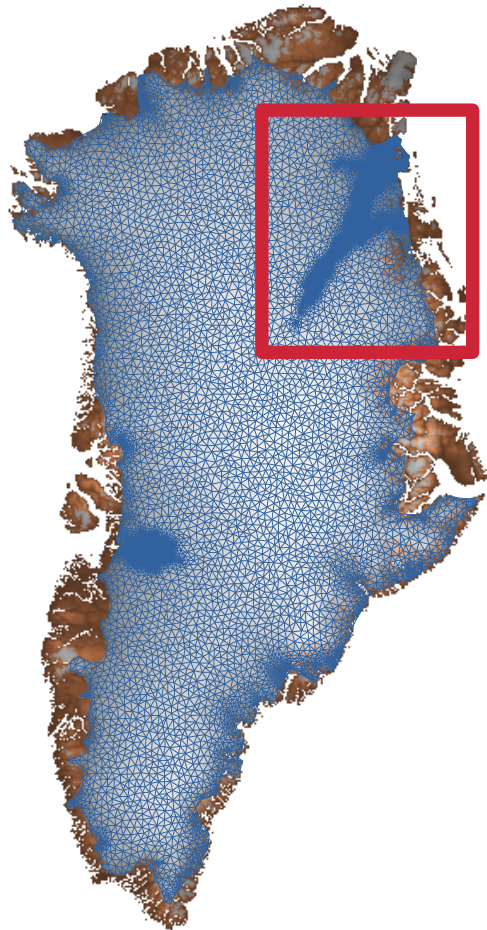
Modelling - Greenland Ice Sheet



ISSM
unstructured grid

focus on 2000 → 2100/2200

Modelling - Greenland Ice Sheet

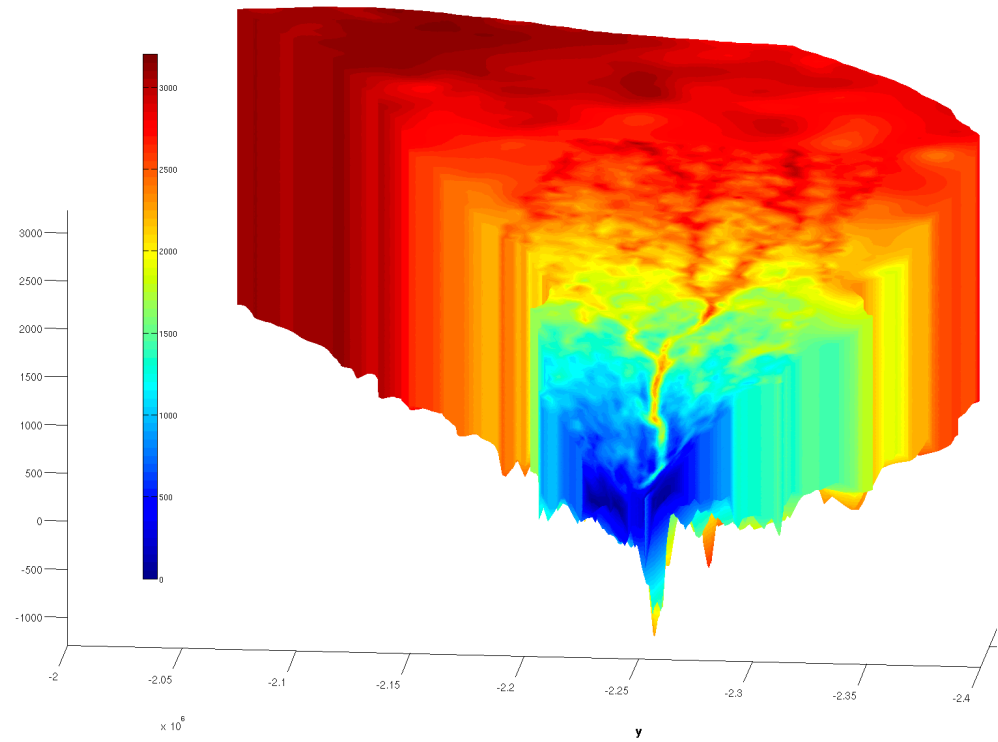
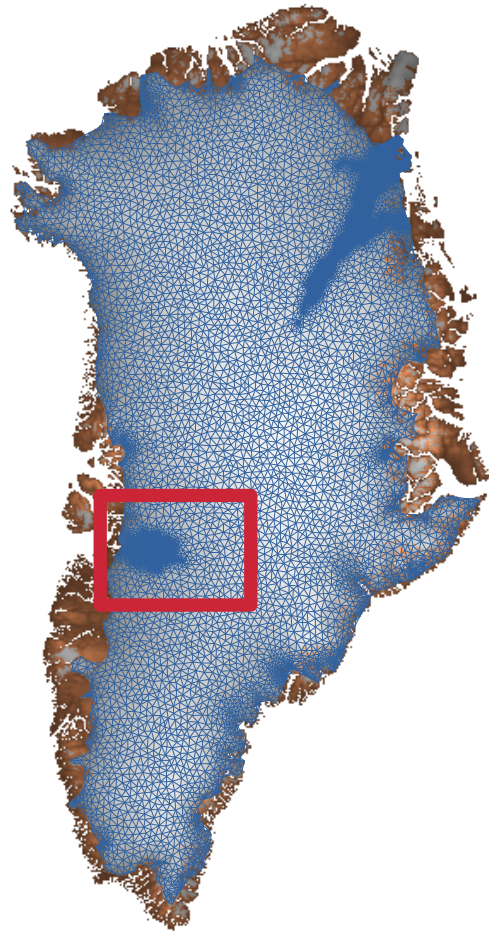


ISSM
unstructured grid

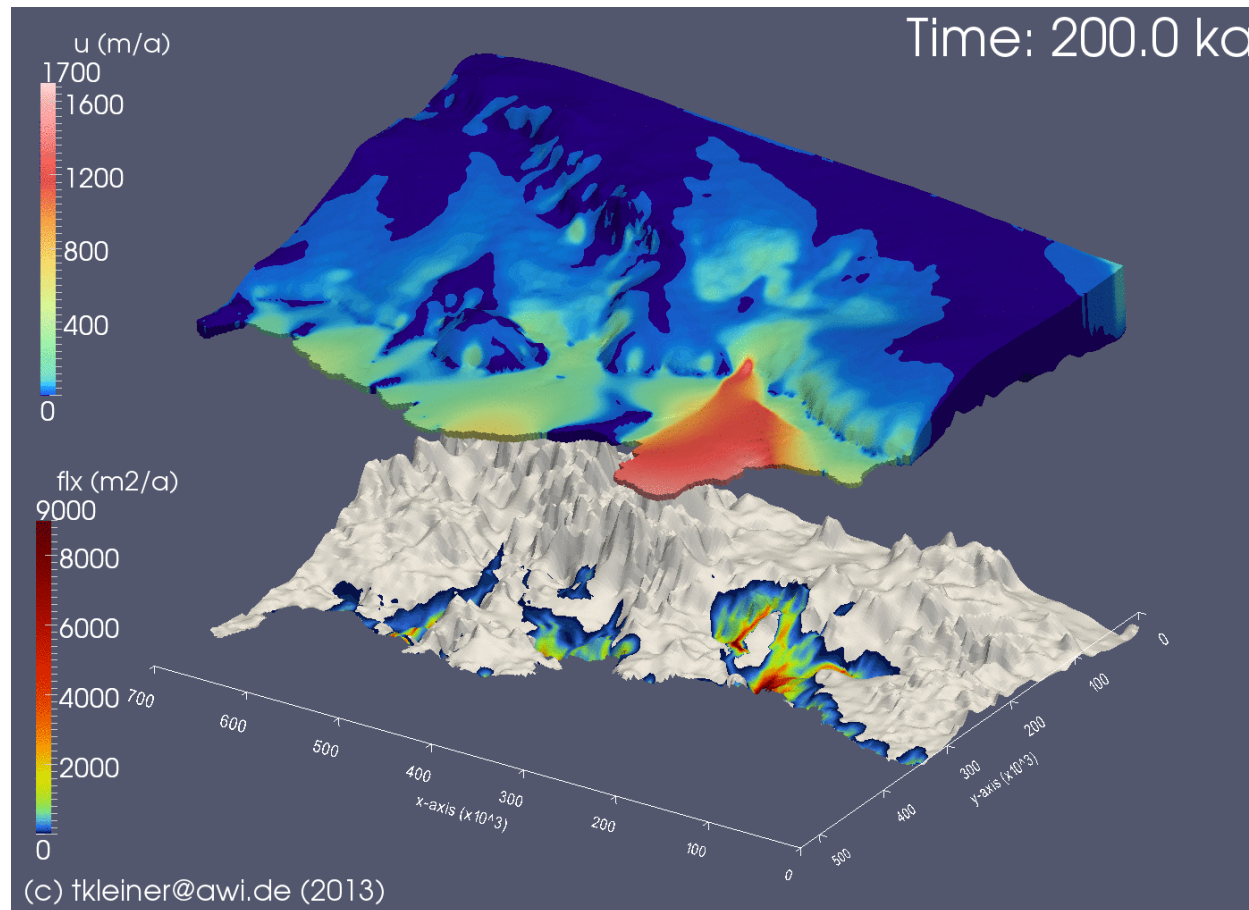
focus on NEGIS

focus on 2000 → 2100/2200

Modelling - Jakobshavn Isbræ



Modelling

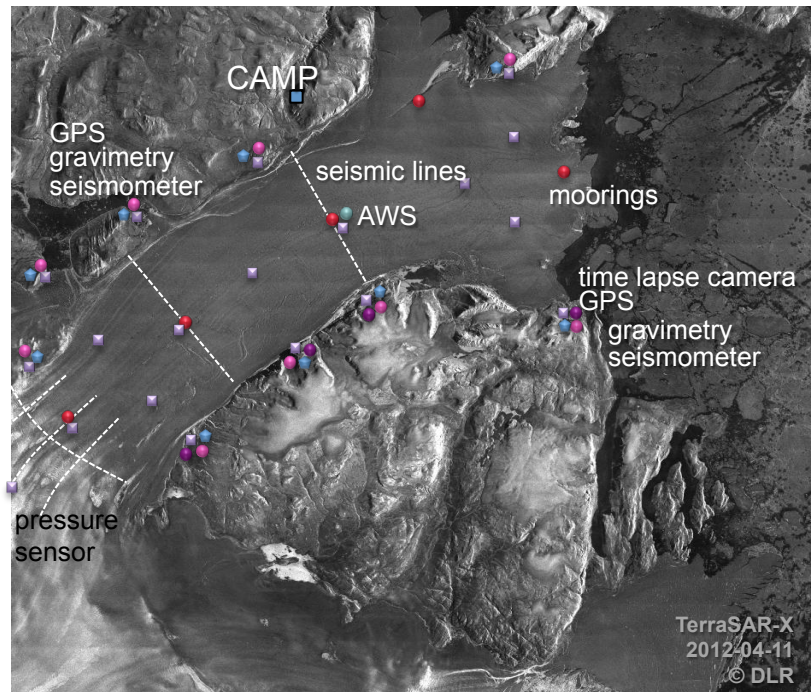
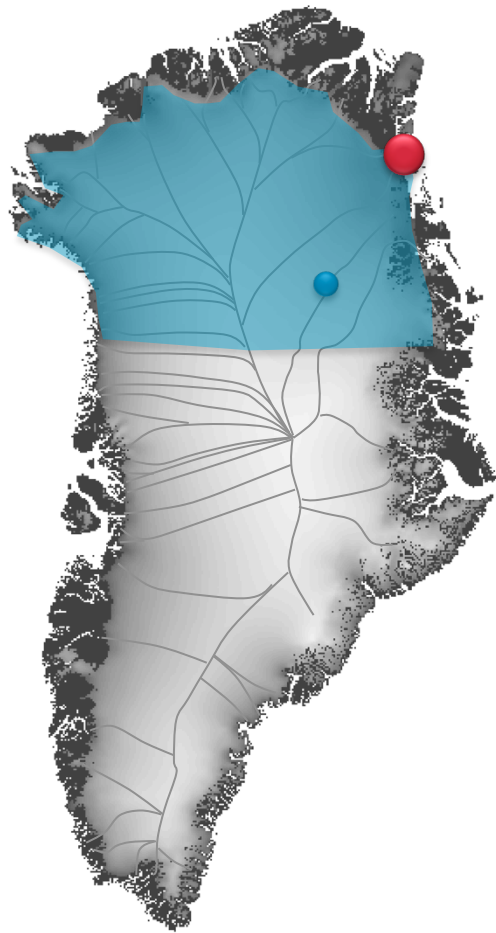


TIMFD3
full-Stokes
2.5km

200ka spin-up +
30ka sensitivity
runs

Kleiner and Humbert,
submitted

Observations



79° Glacier