Including present-day mass change rates in ice sheet modelling speeds up ocean-forced modelled ice loss

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Tim van den Akker[1]

William Lipscomb[2]

Gunter Leguy[2]

Willem Jan van de Berg[1]

Roderik van de Wal[1]

1

Utrecht University

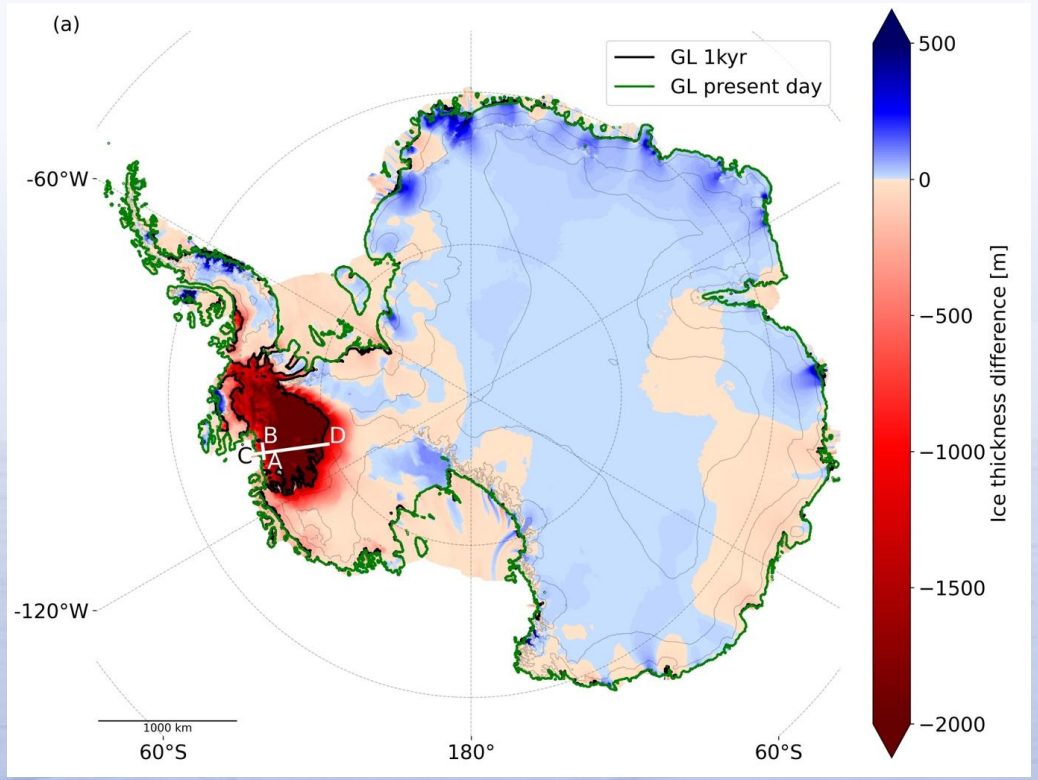
2

NCAR

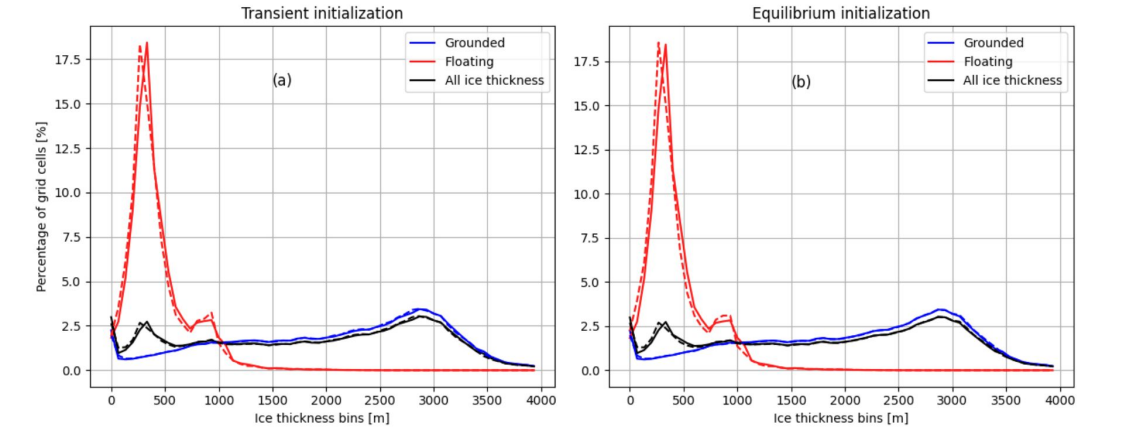
New CISM intialization: unforced results

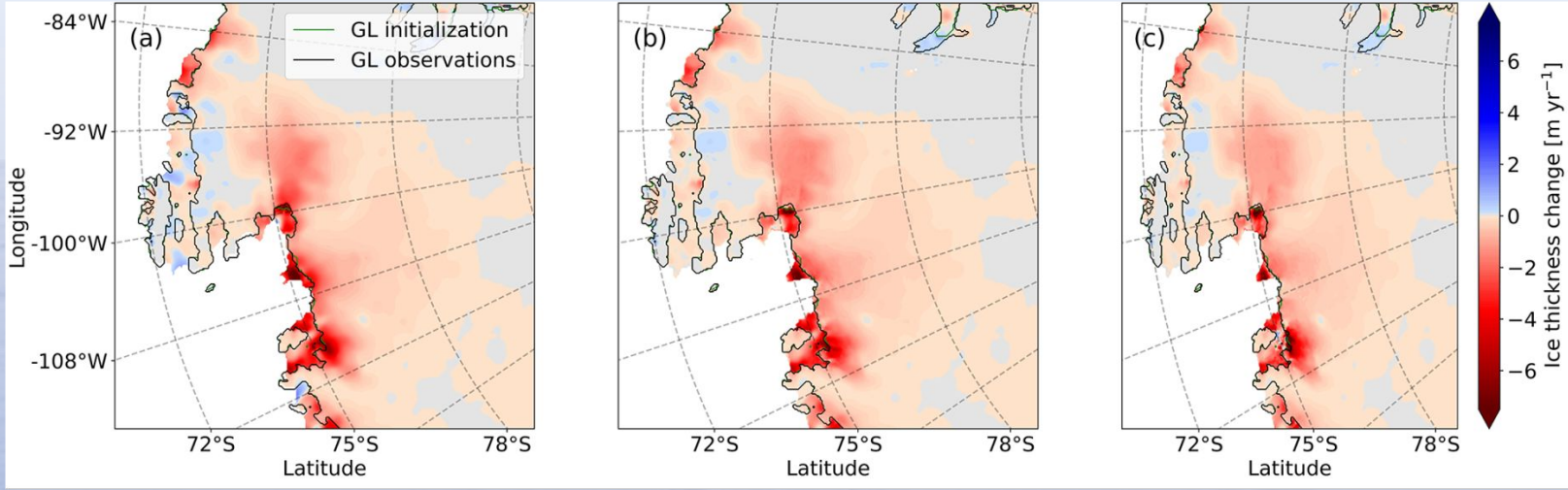
- We developed a method to match observed mass change rates[1]
- This leads in all cases we tried to: <u>unforced WAIS collapse</u>

Typical 1000 year realization

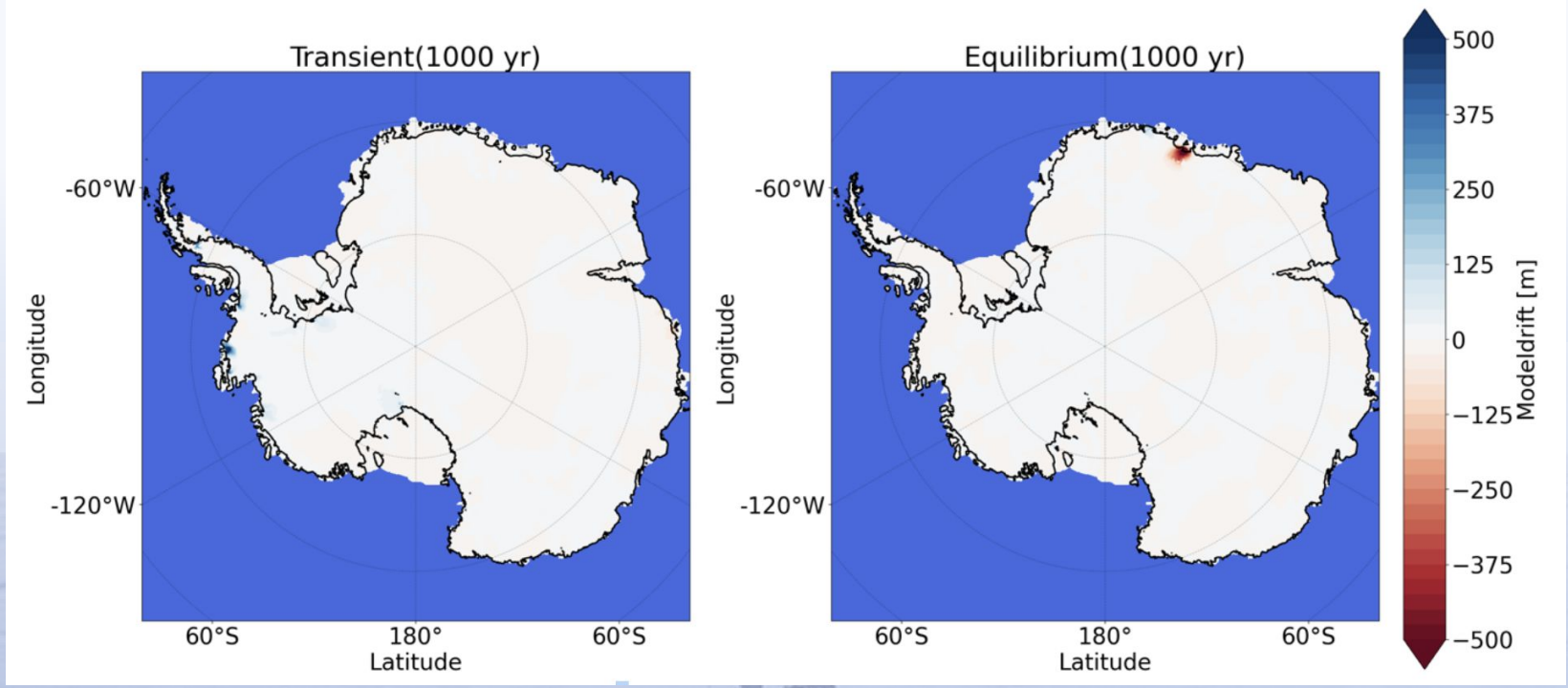


Initialization: WRT to observations

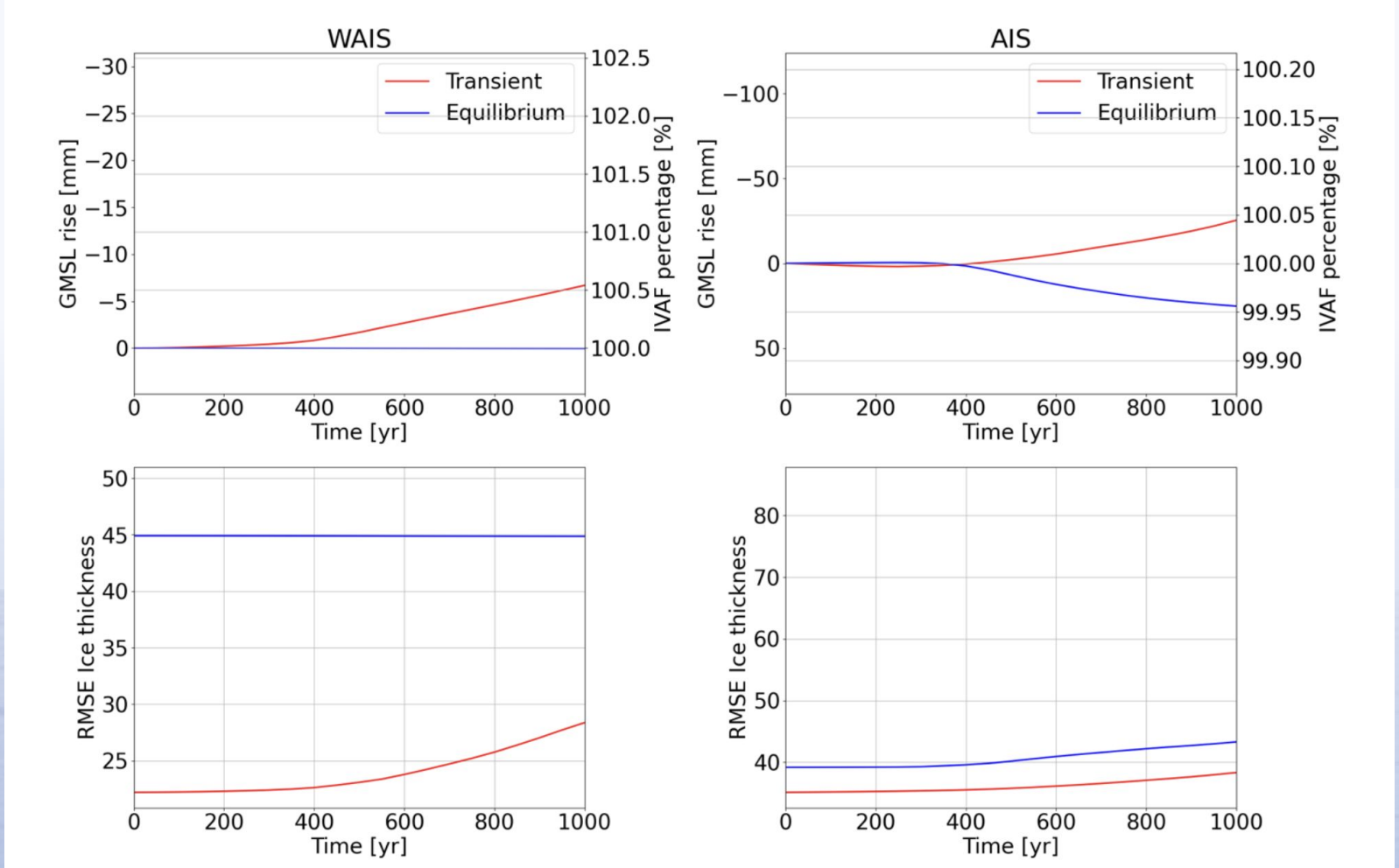




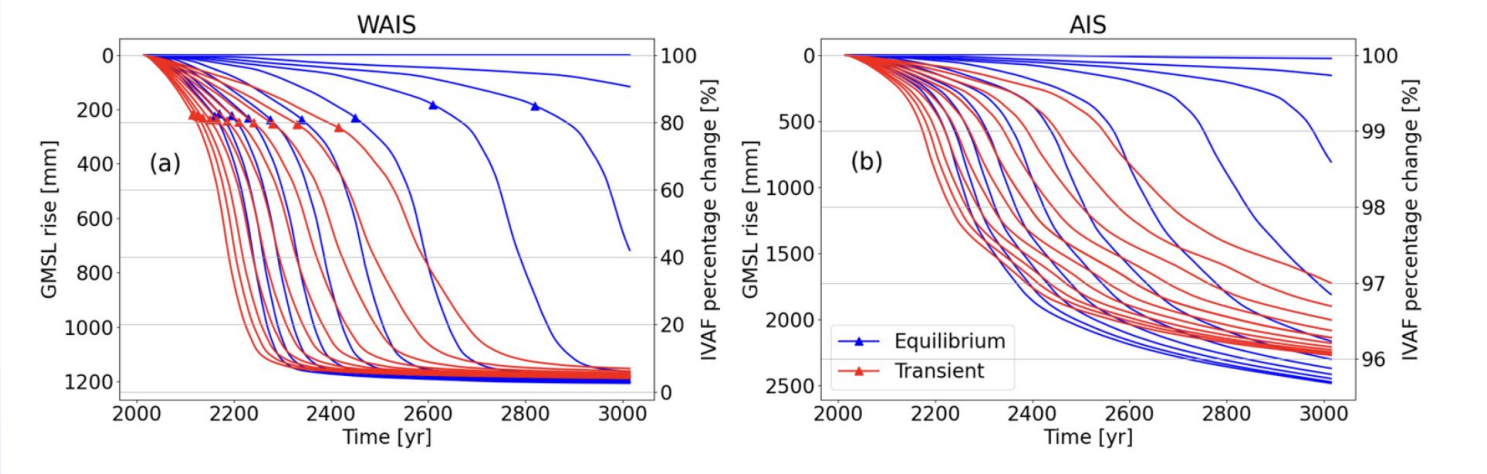
Initialization: model drift

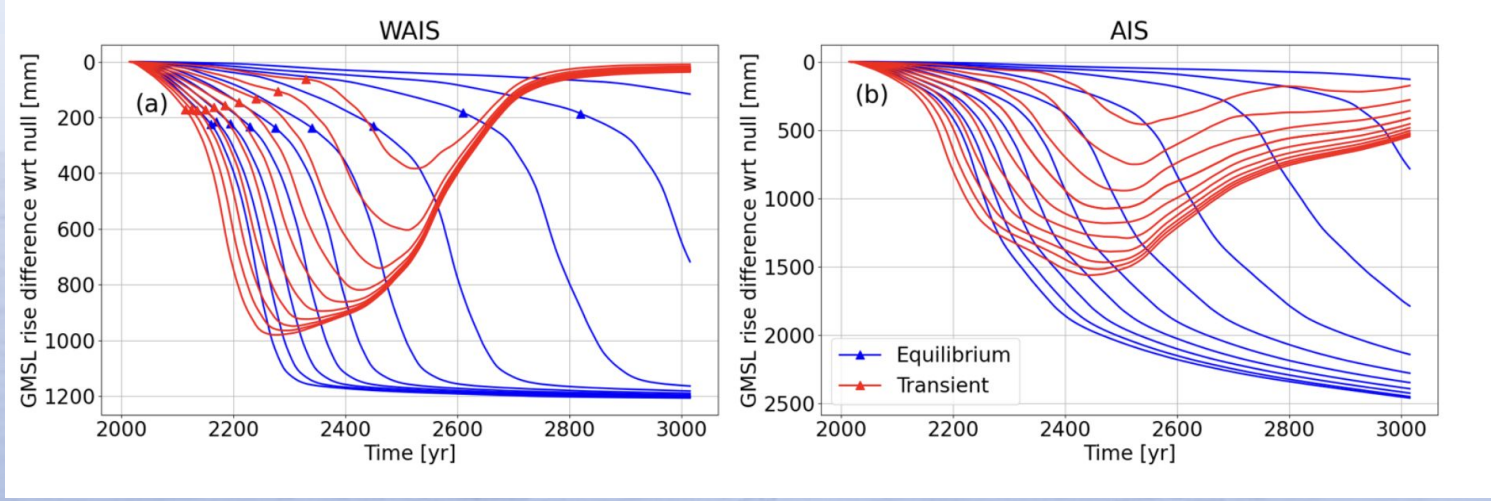


Initialization: model drift



First results, idealized warming scenarios





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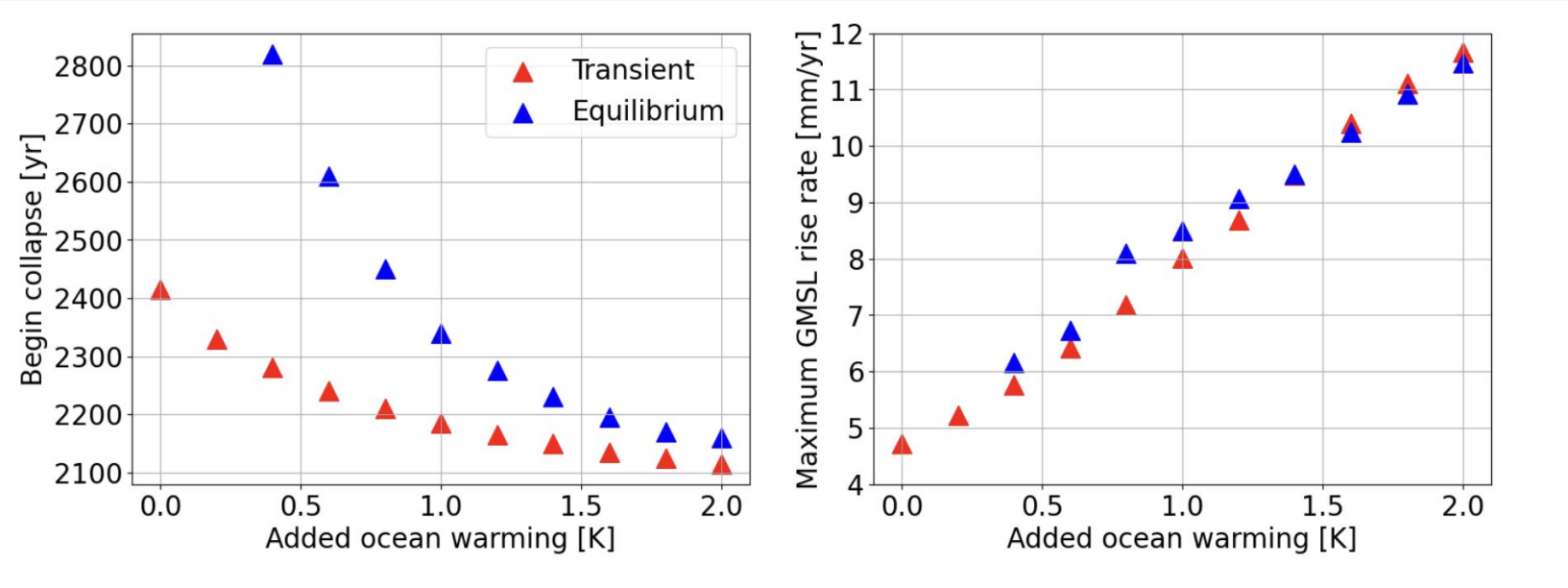
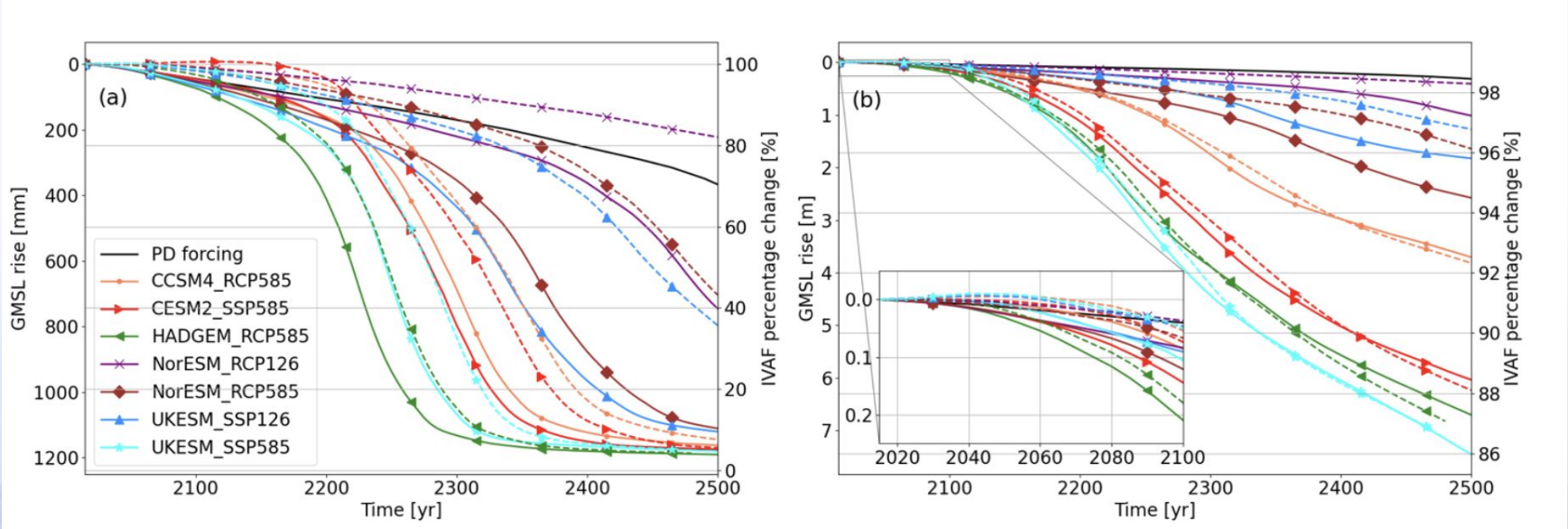


ESM forced scenarios

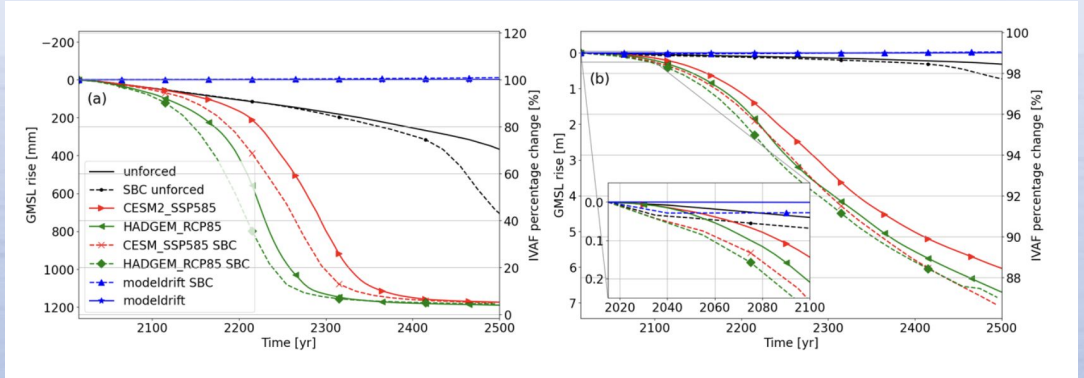


Caveats (or, opportunities for further research)

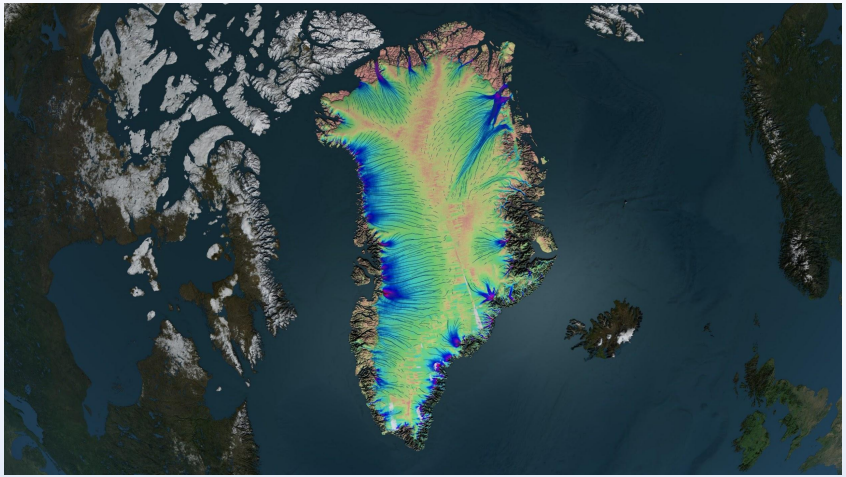
- Missing: subglacial hydrology
- Missing: ice shelf cavity resolving submodel

- Missing: calving (but might be on the way)

With calving included

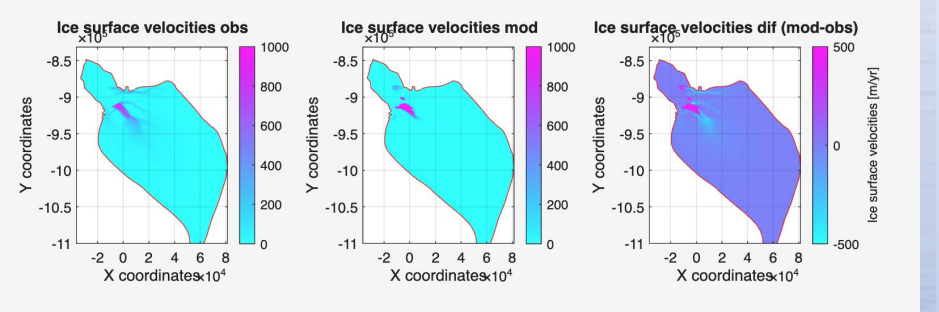


Also new opportunities for collaboration



- I am a greenland modeller now!
- (also I switched models…)

- But talk to me on model differences, ISSM, data assimilation and cost functions best practices in both models, northern Greenland outlet glaciers,



Thanks for your attention!

- The paper is being typesetted right now ☺️

- Contact: tim.vandenakker@geo.su.se