

Dear Mira Berdahl and co-authors,

First, I want to thank you for answering the pending points that I raised during the revision phase. I am delighted to inform you that I finally received all review reports both suggesting publication in The Cryosphere with technical correction. So you have alleviated most of their initial concerns adequately. There is only one pending remark on the steady-states requirement from reviewer #2. Please consider it.

In conclusion, I decided that the article is forwarded to production in TC with the chance for technical corrections. You will soon be contacted by the responsible production officers.

The editor, Johannes Fürst

We thank the editor for their kind assessment. Below we have noted the pending remark by reviewer 2, and our response to it.

#### Reviewer #2 comments

Just some thoughts on the authors' reply: 'Importantly, we are not trying to achieve a snapshot of the current transient evolution of the ice sheet. This is a sensitivity study, rather than a predictive SLR assessment. As such, we focus on generating a 'steady state' AIS, so that we can better evaluate the impacts of  $p$  and  $\gamma$  on future mass loss.' I don't think 'steady state' is a necessary requirement for sensitivity study, especially to advise on future mass loss. The sensitivity of future mass loss to parameters are influenced by initial states (Reese et al., 2020; initMIP). Again, I appreciate that additional experiments on the Amundsen basin are conducted, and model validation should probably be a community effort.

In our previous response to editors, we mentioned that the spin-up to a 'steady state' AIS allowed a better evaluation of the impacts of  $p$  and  $\gamma$  on future mass loss. We, however, recognize what the reviewer is mentioning here, in that the initial state of the ice sheet impacts future mass loss. To clarify this to the reader we have now added a parenthetical line in the manuscript, Section 2.2:

“(We acknowledge that a parameter study does depend on the initial state of the ice sheet (Reese et al., 2020) and our current spin-up strategy does not capture the recent observed Antarctic mass change which could impact the results of this study.)”