

Reply to the editor

You have thoroughly responded to the comments of the reviewers, who were largely positive about publication. I believe the current submission is near ready for publication, after addressing the following minor points.

Thanks a lot for the following suggestions!

- I note that you refer to the different heat flow maps numerous times in the text. Perhaps this justifies defining a set of abbreviations (Colgan et al. (2022) map = > C22 map; Shapiro and Ritzwoller (2004) map => SR04 map; etc.). This is not a mandatory change, but it may improve readability.

We now use abbreviations for these 7 maps.

Specific Comments:

L132: year.. => year.

Changed.

L134: "geothermal heat flux" \Leftarrow is ghf prescribed at the ice base or is it prescribed further down in the lithospheric column? Also, until now this has been referred to as "geothermal heat flow", which is the consensus term.

We now use "geothermal heat flow" instead.

L166: basal ice temperatures => basal ice temperature

Changed.

L184: "surface mass balance forcing at transient equilibrium" \Leftarrow This phrase is unclear to me.

Could you rephrase slightly. What is "transient equilibrium"?

The transient equilibrium here means the ice sheet is in the process of adjusting to external forcings and may not have reached a full equilibrium. We now add "when the ice sheet is adjusting during the spin-ups" at the end of the sentence to make it a bit clearer.

Figure 1: It is a little bit strange to have the colors and range for the ensemble mean different from the individual maps. I suppose this is to show more clearly some of the features in the ensemble mean. However, this makes it difficult to compare an individual map to the ensemble mean. Furthermore, the features of the ensemble mean are not discussed particularly in the text. I would suggest using the same colors and range for the ensemble mean too. Perhaps add some more colors or shading to be able to see more details over the entire range of ghf values.

The colormap and data range for the ensemble mean are changed to be consistent with individual maps.

Figure 2, Figure 9, Figure 10, Figure 11: same comment here. Give ensemble mean the same colorbar as for individual panels.

Changed.