

Dear Editor,

Thank you very much for your investment into the improvement of this manuscript, this is highly appreciated! We are sorry for the numerous editing mistakes from our side. We provide a point-by-point response below with the changes made according to your comments.

Thanks again for your time and work and for your positive assessment of this manuscript. We are excited to see this paper published in your Journal.

Dear authors,

Thank you for your clear responses to the issues raised in relation to the previous version of the article and for promptly submitting a revised version. A number of minor points still require clarification, primarily in relation to the figures, these are detailed below. The article may be considered to be accepted for publication once these technical issues are addressed. This is a highly novel piece of work that makes an important contribution to the validation of ice sheet model output. Thank you for submitting to The Cryosphere!

Kind regards,  
Pippa Whitehouse (Editor)

---

Technical Issues:

Figure 1, top left plot: I think that ice surface elevation is plotted here, please clarify in the caption and consider including a colour scale

Yes. We included a colour scale and amended the caption correspondingly : “Antarctic **surface (top left) and** bedrock elevation from [...]”

Figure 4: please explain what the black circles are on plots B) and C) and include some indication of scale on all plots, e.g. by adding units to the axes

We are sorry if this caused confusion. The caption previously read : “ [...] dotted areas where basal melt is simulated [...]”.

We now further highlight this by stating:

“ [...] dotted areas (**filled black circles**) where basal melt is simulated [...]”.

Figure 6: please include units (of time) on the x-axis of A) and correct the values on the x-axis of B)

Thanks, and done.

Figure 8: the caption states that this figure relates to transect DC-X57; is this the same as transect X57a mentioned in the caption to Figure 7? Check that consistent names are used for all transects

Thanks for spotting this! We changed all instances of X57a or DC-X57 to the correct full name DC-X57a (same with other transects).

Figure 9: I could not find any information, e.g. on a map, to indicate which end of the DC-Y77 transect is regarded as 0 km and which end is 100 km. The x-axis for the upper plot is not labelled: I suspect that both transects are 100 km long, but this should be stated, or both sets of x-axes labelled. In the caption, the black/grey lines at the bed are defined twice.

Yes, this is unclear. We added a sentence stating that:

“[...] for transect DC-X57a (A) and DC-Y77 (B) (orientation from left to right as depicted in Figure 7 A) [...]”

Line 364: isotope -> isochrone

Done.