

Dear Alex,

Thank you for your comments. We have addressed your concerns in the text and explanations are given below. Your comments are in **brown**, and our answers are in **black**.

I believe you have adequately addressed the reviewer comments. Please find several additional minor comments below, which should be addressed before publication.

In Section 2.2 where the equations are outlined, or directly in Section 2.3.2, I suggest adding the equation for the steady-state age profile as well. Since this is used to determine the best value for m further below, the equation should be stated.

We added equation as follows:

“Following the method of Fischer et al., (2013), we modeled the age profile of ice by

$$\hat{A} = \int_z^H \frac{1}{w_{melt} + (Acc - w_{melt}) \left(\frac{z}{H}\right)^{m+1}} dz, \quad (9)$$

where \hat{A} is the modeled ice age.”

L23: Even the correlation factors => Even if the correlation factors

L24: we can use the GHF values => the GHF values estimated here ... can be used as references

L27-28: is associated with sea level changes => can influence sea-level changes

L101: as well as => and

Corrected as recommended.

L109, Eq. 5: Please add a reference for this form of the equation, and particularly the form factor.

We added reference as follows: “According to Fischer et al. (2013), in the most general terms, the vertical velocity in the ice can be approximated by ...”

L119: was designed => was used

L143: are coming from => come from

L257: there no => there is no

L257: drill site => the drill site

L373: we used GA approach => we used the GA approach

Corrected as recommended.

On behalf of the authors,
Pavel Talalay and Yazhou Li