

Dear Stefano,

Myself and my co-authors thank you for your detailed review of our paper, and taking the time to re-review it. We acknowledge your recommendations, and hope the following adaptations to our paper satisfy your requests.

Many thanks,
Emma Pearce, and co-authors.

Review from Stefano:

The authors have made a good effort to address the questions raised during the first review. However, there is still some improvements to be made before publication.

I encourage the authors to include a more detailed version of their response to point 7 (and 6) of my previous review, in the manuscript. This point is very important. Currently, it is not yet clearly specified in the manuscript that density and P-wave velocity contributions are ignored in the inversion procedure, making it hard for readers to validate the obtained results.

A. An additional two paragraph has been included from line 198 and 236, discussing the limitations of our P-wave velocity and density measurements obtained from the MCMC inversion, and the impact of ignoring these contributions.

Moreover, there is still no discussion in the paper about the effects of this choice on the estimated uncertainties. I believe this discussion is necessary to demonstrate that the claimed, very weak anisotropy, is real and not merely apparent. In other words, the authors should be more convincing about the reliability of their results.

A. further paragraph from line 263 in the discussion is now included examining the effects of the choice of not including V_p on the estimated uncertainties. This paragraph also includes validation of our results in comparison to Fichtner 2023 velocity model from the same vicinity at EastGRIP. A further figure has been included in the supplementary material showing this result comparison and aiding in the validation of our results for the reader.

Minor comments:

1- Figure 4 and 5 – Because of the grey error bands, I suggest to use a different color to represent the dots indicating the forward-modeled dispersion curves.

A. We have adjusted the colour of the dots from grey to blue to be more visible on the figures.

2- Line 210 – A reference is missing (question mark “?”)

A. This is a typo and should only be the single reference. The (?) is now removed.

