

I would like to thank both reviewers for their constructive comments on this manuscript and also the authors for submitting their responses to the reviewers' comments.

The manuscript investigates the challenges of accurately and efficiently modelling the solid Earth response to mass change of a marine-grounded ice sheet located in a region of complex Earth rheology. This is a well-written paper and both reviews are positive – they highlight the importance of the study and the clear communication of the findings.

The authors have responded to all the points raised by the reviewers, and they note that they plan to carry out an additional simulation. I support this decision – do let me know if you need additional time to complete the simulation and any resulting edits to the manuscript.

With regard to reviewer 1's encouragement that the authors release the model code, the authors provide a well-argued response to this suggestion which is reflected by their text in the 'Code/Data Availability' section. They also note the ongoing efforts within the GIA modelling community (including the efforts of the authors) to increase the accessibility of such codes – thank you for pursuing this and I encourage you to continue working towards this important goal.

In addition to the points raised by the reviewers, I have a couple of small queries:

- Line 316: you mention that you repeat the calculations of fig. 2d-f using a range of grid resolutions, but I found it difficult to identify the resolution used to produce the original results shown in figure 2
- Line 425: “where the *edges of the boxes* represent” (also check figure captions)
- Line 493: “past the grounding line” – specify whether this refers to locations upstream or downstream of the grounding line. In this paragraph, it may also be useful to mention that deformation offshore of the grounding line can be important for ice sheet stabilization if it causes regrounding of an ice shelf

My decision following the initial round of reviews is to publish this article subject to revisions (the process may involve further review by the original reviewers). I invite the authors to submit a revised version of the manuscript that addresses the points raised during the review process.

Kind regards,

Pippa Whitehouse