

Second round of review of:

Results of the second Ice Shelf–Ocean Model Intercomparison Project (ISOMIP+)

Authors: Claire K. Yung et al.

We greatly appreciate the effort the authors put into addressing our comments from the first round of review. We are now happy to recommend publication of this manuscript. This paper will be an extremely useful resource for the community; the leading author(s) have done a remarkable job bringing this information together.

We provide a few minor suggestions below that the authors might want to consider in preparing their final version of the manuscript.

This is a joint review from a senior and an early-career researcher.

General comment:

The ISOMIP+ protocol covers a broader range of physical processes than ISOMIP. However, one important process not yet considered in the protocol is tidal forcing and its potential impact on melt rates and ocean circulation within ice-shelf cavities. While we do not expect the authors to re-run any simulations, it would be valuable to acknowledge tidal forcing as a relevant process for future studies. We suggest mentioning this in the discussion section, where future research directions are outlined.

L881:

We agree that the model representation of ice-shelf boundary layers is an important area for future research. In addition, the treatment of physical processes within the boundary layer—such as temperature sampling and the distribution of freshwater fluxes, as already discussed by the authors—is also critical. We suggest modifying the sentence to read, for example:

“model representation of ice-shelf boundary layers and the physical processes within ...”

L836:

The term “meltwater forcing sampling” is unclear. We believe the authors are referring to *oceanic forcing sampling*; if so, please revise accordingly.

Table 1:

- The authors describe *z/s ALE* as “arbitrary Eulerian–Lagrangian coordinates with a quasi...”. We are unclear why the term ‘*quasi*’ is used here and request clarification.

- For MPAS-Ocean, the superscripts *c* and *d* appear to refer to Section 3.5 rather than Section 3.6; please correct this.

L345–347:

The authors attempt to justify using freshwater fluxes averaged over the previous three months to adjust the surface forcing so that sea level does not rise abruptly. However, it remains unclear why a three-month running mean was specifically chosen. An additional explanation would be helpful.

L454:

We suggest adding “representations of” before “bed topography and ice shelf draft between models.”

Figure 13:

The statement “In some panels, COCO results fall outside the main range of the other models,” mentioned in the authors’ response to reviewers, was not added to the figure caption. We recommend including this clarification in the caption.