

Second round of review for Menthon et al. : **Comparison of calibration methods of a PICO basal ice shelf melt module implemented in the GRISLI v2.0 ice sheet model**

Submitted to *Geoscientific Model Development*

I thank the authors for answering my questions and taking my comments into account. The manuscript has improved since the last version. The unclear points have been clarified and the restructuring is appropriate. I have a few minor comments left but, all in all, I think the manuscript is ready for publication.

L35-36: This sentence is redundant. I would suggest something along the lines of : "The parameterisations rely on the definition of their parameters." But even this sounds awkward. Maybe leave it out altogether?

L106-108: This is not a sentence. If a sentence starts with "whereas", the second part of the sentence should be in contradiction with the first part. I don't think it works they way the authors use it here. But this can be left to the proofreading maybe?

L167-168: This is not a complete sentence either. Or it is formulated in a very convoluted way that got me lost.

L171: The word "adding" could be removed here.

L242: "analysis" => "analyse"

Figure 3 caption: "bins values" seems imprecise. Can the authors reformulate in a clearer way?

L253-260: Using past tense here for the verb "leading" in several instances makes the reading a little difficult.

L335-348: The answer to the question of the title is hidden in a large text about observational differences. I would suggest either merging this section with another one or finishing it with the main conclusion of the paragraph (what is now at L340-344). At the moment, it reads mainly like a description of the differences between the two observational datasets.

L388-390: There is a mix-up of sentences here.

L448: The melt sensitivities to warming were explored in Burgard et al. 2023 and not in Burgard et al. 2022.

L459: I suggest adding "simulations of" before "future dynamics of the ice sheet"

L488-490: This sentence is tedious to read. Can the authors reformulate?

References

- Burgard et al. 2023: <https://doi.org/10.1029/2023MS003829>