We would like to thank Benjamin Smith for his corrections, which have improved this new version of the manuscript. Original editors comments are in italic and black, our answers are in blue. We have prepared a new version of the manuscript taking into account the reviewers' comments, as well as a pdf outlining the changes.

Line 7: "While all sources of uncertainty contribute at least 15% to uncertainty until the end of the century, SSp-related uncertainty dominates at 40%" – this sentence is not at all clear. 15% of what? Which undercertainty? If it's mass loss, AOGCM seems to contribute nothing at the end of the century. Please clarify or delete.

We've changed the sentence to «At the end of the century, SSP-related uncertainty constitutes the predominant component of total uncertainty, accounting for 40\%, while uncertainty linked to the ISM represents 15\% of the overall uncertainty.»

Line 30 : Addition of -> addition to

Thanks, corrected

Line 42: as evidenced by -> as is evident from

Agreed, corrected

58: Please justify or delete "providing more robust results." This needs to be demonstrated, not just asserted.

We've changed the sentence to « This approach mitigates the risk of over-interpretation that may arise when focusing on a single tidewater glacier, providing more robust results; i.e., if the model successfully reproduces these varied behaviors, it is likely to do so for other tidewater glaciers as well. »

110: Please add a reference to appendix A to help the reader understand what the model parameters are

We've added the following sentence : « See appendix A to understand what are the ISM parameters. ».

115: model led -> modelled

Thanks, corrected

119: observations from wood et al (2021) -> observations (Wood et all, 2021)

Agreed, corrected

134: mitigate appears twice

Thanks, corrected

141: check volume unit notation

I've checked in the paper of Slater et al. (2019) - e.g. Fig. 4 - and the unit of Q is $m^3 .s^{-1}$.

156: Would it make more sense to say "the uncertain parameters related to the SSP do not affect Hpr and Cpr"?

The sentence was a bit confused, we've changed it to : « As defined by our set-up, the uncertain parameters of the forcing (SSP, AOGCM, RCM, fronts) do not affect Hpr and Cpr (Fig. 2). »

184: The notation for the Heaviside function would be clearer if it were written F0(Q; Q0) or F0(Q, Q0), or even F0(Q-Q0) (to match the standard definition of a Heaviside function)

Agreed, we've changed it to F0(Q, Q0).

203: "data with" -> "data for"

Thanks, corrected

207: check notation on nobs

Thanks, corrected

217: delete 'considerable"

Thanks, corrected

217: observations is necessary -> observations would be necessary

Agreed, corrected

229: change to parenthetical reference : "as previously identified (wernecke et al, 2020)."

Agreed, corrected

244: Please justify or provide a citation for the statement that "the minimum RMS corresponds to the configuration with the least structural error." Is this statement remarkable because it has been discovered in this study?

When we wrote it, it seemed logical, but now we are not sure and we haven't found a good justification. So we've changed this sentence to: « Specifically, we will evaluate the minimum, median, and maximum RMSE values as potential estimates for σ. »

Line 318 / Figure 5: This figure is too small in the inset version. The tick lines would be helpful here, but they are too light to see.

Agreed, we have increased labels and legend and made the tick lines darker. For consistency, we have also made the tick lines of Fig. 4 darker.

356 "which demonstrate the most pronounced impact"- this seems redundant to the first clause of the sentence. Please either give a numerical description of the impact, or delete this phrase.

Agreed, we've deleted this part of the sentence.

377: provide a name for the m parameter

Agreed, we've replaced « parameter » by « exponent of the friction law ».

Figure 7: This figure is also too small and too faint. Please make the font larger and the lines bolder

Agreed, we've increased the size of the legends and made the lines more visible.

412: It would be good if, before this point, some explanation had been provided about what happens when you try to derive calibration parameters in areas where the ice front has already retreated (I think this is the problem under discussion here). This is a problem with the way that the model is calibrated using the later time periods, and it would be good to acknowledge earlier in the paper that it causes difficulties. Please find a place to add this to the text.

Agreed, we've added the explanation of how we extrapolate the friction in ice-free regions where we describe the calibration of the friction field (Appendix C1) : « Due to the presence of ice-free regions in certain areas of the glacier following its retreat around 2005, it is imperative to extrapolate the friction field in these regions for members using observational data from 2005-2015 or 2015-2019. When the parameterization of the effective pressure change effect is enabled (i.e.,f^{param} = True), the time-independent reference field β_{ref} is set to 0 in the extrapolated areas. Conversely, when parameterization is disabled (f_{param} = False), either β_W or β_{RC} are set to 0 is utilized. The implications of the chosen extrapolation method are further examined and discussed in Jager et al. (2024). »

442: Please explain what "lower members" are.

We've changed this part of the sentence to « while retaining the inclusion of members with a lower mass loss, which are members using inversion data before the retreat. »

Figure 8: Again, the labels on the axes are too small, and the lines are too faint.
Caption to figure 8 : please refer to panels by letter, rather than by "top left" etc.

Agreed, we've increased the size of the legends and made the lines more visible. We've also changed the caption to refer to panels by letter and a sentence on sub-plots. In the one-column format, the figure takes up more space, so we've reduced its size a little, but it would be possible to increase its size in the two-column format. The same applies to figure D1.

475, and the remainder of this section "The SSP weighting on the future prediction has a very significant effect" and similar statements: It would be good to establish a standard for what

changes are significant. For example, is it significant that a confidence interval changes by ~10% of its previous value? It would also be good to use expressions like "essentially unchanged" when values do not change very much (e.g. the medians in lines 477, 483, and 486).

We've used the term significant in this sentence because we had a change of the median by around 20%. We are agree to caracterize the change of line 483 can be written as 'essentially unchanged' and we have rewritten the sentence to: « Moreover, the combination remains essentially unchanged with the median shifting upwards from 0.79 mm to 0.80 mm. ». For line 477, the change does not appear to be 'unchanged' so we have removed the slight (median change of around 10%). For line 486, the change seems slight (just under 5%) so we have not replaced the term with 'unchanged'.

Figure 10: Label panel with letters, and add references in the text to each panel.

We added letters to the panels and rewrote the caption and text accordingly.

493: Please check the use of "significantly"

We have added the percentage of change, which is over 20% and therefore considered significant.

497: Please be specific about what the panels in figure 10 to which you are referring, and explain the significance of "a shift to higher probabilities"

Thanks, we have added letters to fig. 10 and the reference to it in the text. We've changed the term « a shift to higher probabilities » to « a notable shift in probability towards higher values ».

533: delineate -> describe

Thanks, corrected

565: check use of "significant"

We have added percentage a mention to the reduction of the 95\% confidence interval : « with a 20\% reduction in the 95\% confidence interval ». In this paragraph, we have also added 1 sentence at the end : « unless other sources of uncertainty are addressed first. Specifically, after reducing the uncertainty associated with the SSPs, applying a weighting to the ISM further reduces uncertainty by 10% by 2100 (Ppo in fig. 8.j and 8.a). »

580: Explain what is influenced by front position

Agreed, we've added: « on the ice discharge and the mass loss of UI »

619: bay -> embayment

Thanks, corrected