Dear Johannes Reinthaler and Frank Paul,

thank you for sketching a detailed plan of action on how to address the various community and review comments. I was most delighted about the contributions in the public discussion pointing to other existing and valuable literature or data sources. Thank you for considering them.

Thank you very much. We also think that including all available data is helping in increasing the overall quality of the dataset.

Apart from that I sense that multiple major comments remain unresolved or at least controversial. These relate to the timing of the LIA in the European Alps, quantification of volume uncertainties, comparison with existing long-term SMB studies, etc. Moreover, the authors did unfortunately overlook to answer my initial comments - some of which redundant with the reviewer comments. In addition, the elevation values, where highest elevation changes are found, appear inconsistent. The Alpine-wide value is smaller than the respective values in the eastern and western parts. Finally, please refer to existing literature on glacier response times (e.g., Zekollari).

Thank you for pointing out the points that still need further clarification.

LIA timing:

Concerning the timing of the LIA, we think that due to the complex nature and variability of timing over an entire region, and the already available literature reviews (Le Roy et al., 2024) we decided to keep the text short and focus on the overall trend with some examples. However, we have cited now the study by Le Roy et al. (2024) to let the readers explore this theme in more depth if desired. In the revised ms we make clear that some glaciers were much earlier also slightly larger so that we do not analyse maximum extents, but the latest possibly only near-maximum extent. The impact of a 20-year uncertainty in the timing on the calculated area change rates is also given. As mentioned before, our study will not solve all problems related to the reconstruction of former glacier extents and should rather be seen as a starting point for further investigations.

Reference dataset/long term SMB:

We have now compared our elevation and volume changes for selected regions with the results from Mannerfelt et al. (2022). Although differences in the datasets used (outlines, DEMs) create larger deviations, our results can now be seen in relation to a dataset from an additional time-step, i.e the evolution of change rates can be better followed. We emphasize that this is only a rough first-order estimate, unsuitable for wider implications.

Highest elevation change values:

We have also checked the elevation change values. We previously provided first a rounded value of 1600 m and in the next sentence the correct value of 1650 m. This is indeed confusing and we will remove the rounded number. Also, in response to a suggestion of reviewer 2, we added the elevation with the highest elevation change for P2 for both the eastern and western Alps.

Volume uncertainty:

Regarding the volume uncertainty, we understand the reasoning behind the suggested formula eps_V = V*sqrt((eps_H/H)^2 + (eps_A/A)^2). However, the volume uncertainty is in our case not only linked to ice thickness/bedrock and area uncertainties, but also includes the surface reconstruction uncertainty. These three are variables that we have used as input and for which we have (independent) uncertainty estimates. We have now clarified the different sources of uncertainty in the text and hope

our method for the uncertainty calculation is sufficient considering the scope and scale of our dataset. Since we are analysing regional glacier changes, a simplified uncertainty estimation rather than a glacier specific or even pixel-based estimation seems more fitting and we would thus leave the calculation as is.

Overlooked initial comments

Lastly, regarding answering the initial comments, we had posted our answers already on the 2nd of May 2024. Please have a look and let us know if anything else should be revised.

In summary, I invite you to submit a revised version of your manuscript addressing the above pending points. To clarify these points, I suggest a second review round.

Although we could not implement all suggestions, we hope that the performed adjustment and explanations in the responses are satisfactory. We thank the editor and all reviewers for their careful reading and constructive suggestions.