

Interactive comment on “Reply to the comment of Leclercq et al. on “100-year mass changes in the Swiss Alps linked to the Atlantic Multidecadal Oscillation”” by M. Huss et al.

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We would like to kindly acknowledge the comments by two reviewers on our Reply to the Comment of Leclercq et al. on “100-year mass changes in the Swiss Alps linked to the Atlantic Multidecadal Oscillation” published in TCD. The statements by the reviewers were very helpful for finalizing the manuscript.

All points raised by the reviewers were taken into account for the revised paper. The main article only required minor corrections in response to the reviewers’ comments. More substantial changes were applied to the supplementary material. Both reviewers questioned the suitability of parts of the supplement (supplemental text or figures) in

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the context of this Reply. We thus have shortened and adapted the online supplement. Technical corrections were included as proposed. More substantive comments are discussed below:

Comments of Reviewer 1

Main article:

The sentence on P2589, L3 of the TCD article was reformulated as follows:

“Thus, the glacier approaches an equilibrium with time even if climate conditions are not becoming more favourable (see Leclercq’s Fig. 1).”

This sentence makes reference to case 1 shown in Figure S1, as well as Leclercq’s Figure 1, which assume a step like change and then constant climatic conditions (of course an idealized case).

Online Supplement:

We agree with the general comment of Reviewer 1 concerning section 1.1: Some generalizations are too simple and are not directly related to the comment by Leclercq et al. We therefore completely omit the section 1.1 that provided additional, but in the present context not necessary information relative to Figure S2.

Most of the figures in the online supplement are only referenced from the main article and not from the online text. Our supplementary material has not the aim of being a separate paper, but to provide additional information in figures and tables (that are basically stand-alone with extensive captions).

The text of the previous section 1.2. was slightly changed. A new Figure S4 is provided that is better suited for investigating and visualizing the issue discussed in the supplementary text.

Comments of Reviewer 2

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Online Supplement:

We agree with Reviewer 2 that showing the 'last DEM' reference-surface mass balance adds more information than necessary. However, displaying the possible range of variation between different reference-surface mass balances (grey bands in the figures) is very useful for visualizing the magnitude of the cumulative divergence between conventional and reference-surface mass balance. We therefore keep this information in the figures (here as well as in Fig. 1 of the main article).

Interactive comment on The Cryosphere Discuss., 4, 2587, 2010.