

The authors have provided a robust response to all the issues raised during the review process, and they have implemented relevant edits in the revised version of the manuscript. This is a rigorous piece of work and new software tools described will be of wide use to cryosphere researchers. I am delighted to confirm that my decision is: 'publish subject to technical corrections'. The manuscript does not need to be re-reviewed by the editor, but a few points require clarification prior to publication. These are detailed below (line numbers relate to the non-track-change version of the article).

Thank you for choosing to publish in The Cryosphere!

Pippa Whitehouse (Editor)

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Line 17: "comparing well..." – in terms of time taken or accuracy of mapping?

Lines 98-101: Check the logic of the argument presented here - lines 98-99 refer to the case where there are many small icebergs. However, the example given in lines 99-101 relates to a glacier that is characterised by relatively large icebergs.

Line 188: "If for any reason this occurs..." – clarify what is being referred to here

Figure 2: (i) should filter 1 refer to '80% ROI coverage'? (ii) be more explicit about the role of filter 2

Figure 3: what does each dot represent – a specific iceberg that has been mapped by both the manual and automated method? What about icebergs that are only mapped by one method? Is volume derived in the same way for both methods? Indeed, do the plots really depict volume – text on line 612 quotes r-values that relate to the agreement between manual and automated mapping of iceberg *outlines* rather than *volumes*. Clearer description needed in the caption.

Figure 5: I think the x-axes represent threshold values, rather than threshold increment values?

Line 315: in addition to the assumption of neutral buoyancy, please state what assumptions you make about the density of the icebergs and the seawater when calculating iceberg volume

Figure 7 caption: (i) what is the relevance of the phrase "for the respective glacier"? (ii) caption needs to summarise the difference between the three plots

In general, you refer to 'upper' and 'lower' distributions in the text, and 'distribution 1' and 'distribution 2' in the figures and tables; standardise the terminology to avoid confusion. Also, to help the reader understand why there are two distributions, at the point where they are first mentioned (in the results) it would be useful to state that distribution 2 includes iceberg rafts. At the moment, this is not mentioned until the discussion.

Figure 8 caption: (i) how is freeboard height represented in these plots? (ii) what are "the respective derived convertors"?

Line 481: "These thresholds..." – the term 'threshold' is not used in the preceding sentences

Line 522: 'longer' -> 'wider' ?