

Interactive comment on “Brief communication “The aerophotogrammetric map of Greenland ice masses”” by M. Citterio and A. P. Ahlstrøm

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Authors reply to comments by Richard S. Williams, Jr. (Referee)

We thank the Reviewer for his constructive comments and detailed suggestions, both regarding the content and the language. They helped to significantly improve the manuscript. Unless noted below, we added all details and clarifications asked, and included the changes suggested by the reviewer.

(page and line numbers same as the scanned document with the Referee’s notes)

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p. 1, l. 12 - Do these area totals include nunatak?

No, ice totals only refer to ice. The map outlines nunataks, so we could properly exclude their area from all glaciated areas we report. Clarified in the abstract and text.

p. 1, l. 13 and rest of ms. - Edits to replace ‘local glaciers’ with ‘mountain glaciers...’, and ‘Glaciers and ice caps (GIC)’ with ‘mountain glaciers’ or ‘non-ice sheet glaciers, including mountain glaciers and ice caps’.

The same language issue was recently discussed in the TCD open discussion (<http://www.the-cryosphere-discuss.net/6/C1848/2012/tcd-6-C1848-2012-supplement.pdf>) of Rastner et al. 2012 also in The Cryosphere, and similarly to Rastner et al. 2012 we prefer to keep ‘local glacier’ and ‘GIC’ because they are convenient terms already established in the contemporary literature cited (e.g. Jacob et al., 2012). ‘Mountain glacier’ alone would not include other common types (valley glaciers, ice fields, ...), and ‘non-ice sheet glaciers, including mountain glaciers and ice caps’ appears too long, considering we need to use both terms frequently in the text. ‘GIC’ is also consistent with the established GCOS terminology for the essential climate variable ‘glaciers and ice caps’, and is included in the IASC list of polar acronyms (<http://www.iasc.info/home/service/polar-acronyms>).

p. 2, l. 29 - Give % how much smaller compared to Rastner et al. 2012

The two values are indistinguishable within their stated uncertainties. Therefore, both our statement of one being ‘smaller’ and the suggestion of providing a % difference do not seem appropriate. We have rephrased the sentence to reflect this.

p. 6 - Comments and numbers on the area of nunataks

As noted above, the area of nunataks is excluded from all our measurements of glacierized area. We agree that properly accounting for nunataks is important, as the figures by Weng (1995) cited by the reviewer show, and we added a remark to clarify that our ice-covered areas do not include nunataks. A more detailed discussion of the area

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of nunataks from Weng (1995) relative to our map would be rather weak because the scale of the map in Weng (1995) is much smaller than ours (1:2,500,000 vs. 1:100,000 and 1:250,000), implying unquantifiably larger omission errors of small nunataks and small glaciers than in our map.

p.8, l. 3 – Bjørk et al 2012 is cited at p. 5, l. 1

Interactive comment on The Cryosphere Discuss., 6, 3891, 2012.

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