

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 Bruce Raup (Referee)

We thank the Reviewer for the constructive and detailed comments and suggestions, both regarding the contents and the language of the ms. 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.

Reviewer: Precision: the reported area numbers have too many significant figures, given the uncertainties. For example, 88083 +- 1240 should be 88100 +- 1240. The

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"1240" is probably too precise as well, though it's not clear to me what it should be. Unit use in abstract: 88100 km² +- 1240 km², or (88100 +- 1240) km²

We completely agree in principle on this point. We originally resolved to report all digits in the submitted manuscript because, as a matter of facts, that is the approach followed by most published literature this paper directly relates to. For instance, the recent and closely related paper by Rastner et al., 2012, also in TC, reports areas up to the 1 km² digit, in spite of uncertainties sometimes one order of magnitude larger than ours (e.g. 1,808,575 ± 56,065 km² for the total ice cover in Greenland in Rastner et al., 2012, compared to our total of 1,804,638 ± 2,178 km²). Another problem arises when the reader may wish to compare against some older results for which no uncertainty estimates were given. As the Reviewer also notes, it would not be clear how many significant digits to keep for the uncertainty values themselves. Considering this state of affairs, we prefer to keep with the currently established practice and provide the reader with our uncertainty estimate and a complete description of its calculation.

Reviewer: Line 9: ERS-1 SAR data were used as well.

ERS-1 not in Jiskoot et al 2012

Reviewer: Express changes in area as percentages.

We do not do any change assessment in this manuscript, and considering the uncertainty estimates it is indeed impossible to do any meaningful change assessment on the combined total extent figures. It will only be feasible on a glacier-by-glacier basis, which is beyond the scope of this paper. Our comparison with Rastner et al., 2012 is only relevant in view of the discussion in this paragraph about the connectivity classes, the effects of their definition on the total values, and the historical values existing in previous literature.

Reviewer: A figure showing an example of the maps would be useful, if it is possible to reproduce a small part.

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Two details are shown in Fig. 2 (Fig. 3 in the revised manuscript). We further added a figure of Greenland showing the outline of our glacier classes (now Fig. 2 in the revised manuscript), as also suggested by several AGU 2012 Fall Meeting attendees.

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

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