

Interactive comment on “Brief Communication: Greenland’s shrinking ice cover: “fast times” but not that fast” by J. S. Kargel et al.

J. S. Kargel et al.

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Received and published: 28 January 2012

Response to Sebastian Mernild’s comments, including recommended changes to our TCD paper. See also PDF, which might be easier to read.

AUTHORS’ COMMENTS TO THE REVIEWER AND RESPONSE ACTIONS:

Reviewer comments/suggestions are in bold italics (in the PDF). Authors’ COMMENTS to the reviewer and RESPONSE actions to the editor are not bold, not italics:

P3209 L14: Is there an online address for this statement? It would be nice with a reference. **REPLY COMMENT: HARPER COLLINS REMOVED THE PRESS RELEASES FROM THE INTERNET. HOWEVER, THE MISTAKEN STATEMENTS WERE WIDELY QUOTED AND THE MISTAKES ACCURATELY PARAPHRASED IN THE ME-**

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DIA; WE QUOTE DIRECTLY FROM THE PUBLISHER'S PRESS RELEASE, WHICH WE ARCHIVED BEFORE THEY WERE DELETED BY THE PUBLISHER. WE ARE CERTAIN OF THE WORD-FOR-WORD ACCURACY OF THE QUOTATION. SUBSEQUENT STATEMENTS BY HARPERCOLLINS, INCLUDING IN THE SPECIAL INSERT PREPARED BY HARPERCOLLINS FOR THEIR ERRANT ATLAS, MAKES CLEAR THAT THE QUOTED TEXT IS ACKNOWLEDGED BY HARPERCOLLINS TO BE THEIR MISTAKE. THUS WE ARE UNABLE TO PROVIDE AN ONLINE SOURCE, BUT WE STAND BY THE QUOTE.

P3210 L6: It should be '...on September 19, 2011'. Is there an online link to those two press releases? There should be a reference. REPLY COMMENT: THANK YOU FOR POINTING OUT THE NEED TO ADD THE YEAR. THE SCIENCE MEDIA CENTRE'S PRESS RELEASES WERE VERY SIMILAR. CONSIDERING PAGE SPACE FOR THIS ARTICLE, ONE URL TO A SMC PRESS RELEASE WOULD SEEM SUFFICIENT.

RESPONSE: REVISE SENTENCE TO READ (WITHOUT THE QUOTES): "The UK Science Media Centre coordinated press releases comprising statements from glaciologists, and alerted journalists on 19 September 2011 (<http://www.sciencemediacentre.co.nz/2011/09/20/experts-on-times-atlas-greenland-ice-cover-claims/>)."

ALSO ON PAGE 3210 LINE 10, ADD YEAR SO THAT IT READS: "... 22 September 2011..."

P3213 L17: It should be Yde and Knudsen, 2007, without a 't' in Knudsen. REPLY COMMENT: THANK YOU FOR THE CORRECTION. RESPONSE: PLEASE CHANGE Knutsen TO Knudsen.

P3214 L2: The A.P. Olsen Ice cap SMB has been simulated for the period 1997/1998 through 2004/2005, indicating an average SMB loss of 1347 ± 343 mm w.e., and an average balance rate of -102 mm w.e. y⁻¹. This reference might be of interest for you: Mernild, S. H., G. E. Liston and B. Hasholt 2007. Snow-distribution and melt

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modeling for glaciers in Zackenberg River drainage basin, NE Greenland. Hydrological Processes. 21: 3249–3263. DOI: 10.1002/hyp.6500.

REPLY COMMENT: SEE NEXT COMMENT AND RESPONSE.

P3214 L5: We have published data from Mittivakkat Glacier for the period 1995/96 through 2009/2010. Why are you not using the entire period, instead of only 1998/99 through 2009/2010? Here, are the observed annual mass balance data from Mernild et al. (2011) for Mittivakkat Glacier, SE Greenland: 1995/96 0.01 m w.e., 1996/97 -0.40, 1997/98 -1.17, 1998/99 -0.77, 1999/00 -0.83, 2000/01 -0.96, 2001/02 -0.50, 2002/03 0.34, 2003/04 -1.07, 2004/05 -1.82, 2005/06 -0.58, 2006/07 -1.58, 2007/08 -0.52, 2008/09 -1.01, 2009/10 -2.16, Average -0.87 m w.e. y⁻¹ Balance rate: -0.07 m w.e.y⁻¹ REPLY COMMENT: THANK YOU FOR IDENTIFYING AND CORRECTING OUR ERROR OF OMISSION OF THOSE ADDITIONAL YEARS AND FOR TIPPING US TO THE ADDED REFERENCE. WE HAVE GONE THROUGH THE REVIEWER'S CITED/PUBLISHED DATA AND CONFIRM AVERAGES, STANDARD DEVIATIONS OF THE MEAN, AND ACCELERATIONS SIMILAR TO THOSE IN THE REVIEWER'S WORK (WE FOUND SOME SLIGHT DIFFERENCES IN THE SECOND SIGNIFICANT FIGURE; ANYWAY, WE CHOSE TO ROUND OFF THE NUMBERS; AND ADDITIONALLY WE CALCULATE APPROXIMATE UNCERTAINTIES OF THE ACCELERATIONS OF NEGATIVE MASS BALANCES REPORTED BY THE REVIEWER IN HIS PUBLICATIONS.

RESPONSE ACTION FOR THE MANUSCRIPT: REPLACE THE FIRST THREE SENTENCES OF PAGE 3214 WITH THIS (WITHOUT THE QUOTES), IF EDITOR WILL PERMIT THE PAGE SPACE/WORD LENGTH: "Mass-balance measurements and hydrological models supplement our understanding of area changes. Monitoring has started at A. P. Olsen ice cap and Freya Glacier in Northeastern Greenland. Glaciers in the Zackenberg river basin in Northeastern Greenland, including particularly the A.P. Olsen ice cap, had a modeled surface mass balance from 1997/1998 through 2004/2005 averaging -1350 ± 340 kg m⁻² a⁻¹ (1 σ uncertainty), a loss magnitude of

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about five times the total average annual precipitation (Mernild et al. 2007). This ice cap's negative balance accelerated by $-100 \pm 15 \text{ kg m}^{-2} \text{ a}^{-2}$ over the reporting period. The most extensive current, published series of whole-glacier in-situ measurements is from the 17.6-km² Mittivakkat Glacier in Southeastern Greenland (Mernild et al., 2011). Its average balance rate was $-860 \pm 340 \text{ kg m}^{-2} \text{ a}^{-1}$ between 1995/96 and 2009/10, and the rate accelerated by $-75 \pm 30 \text{ kg m}^{-2} \text{ a}^{-2}$ over that period. The large negative balances reported for these locales are consistent with changes observed for glaciers around the Greenland ice sheet. The rapid increases in mass loss rates are something to watch in the future, but for now we cannot discern whether these trends will continue or are part of decadal oscillations."

ADD REFERENCE TO THE LIST: Mernild, S. H., Liston, G.E., and Hasholt, B.: Snow-distribution and melt modeling for glaciers in Zackenberg River drainage basin, NE Greenland. *Hydrological Processes*, 21, 3249–3263, DOI: 10.1002/hyp.6500, 2007.

Interactive comment on The Cryosphere Discuss., 5, 3207, 2011.

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Fig. 1.