

Responses to reviewers' suggestions (05 May 2017)

Further to the changes presented in earlier revisions (tc-2016-297-author_response-version1.pdf), minor changes have been made to address the reviewers' suggestions.

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Reviewers' comments are reproduced in black.

Authors' responses are in blue.

Changes to the manuscript are shown in red.

10 Report #1 (Anonymous referee #2, 25 April 2017)

page 12, line 12: I understood that GC-Net (inland Greenland) AWS data had recently been incorporated into the Global Telecommunications System and are therefore assimilated into some (ECMWF?) reanalysis - please check and modify this sentence if necessary.

15 Some GC-Net stations are now indeed included in WMO data broadcasts on the Global Telecommunications System. However, it appears that they have only been included since approximately April 2016, and so do not affect our analysis (which includes GC-Net data up to the end of 2014). Even though the GC-Net stations are now available for assimilation into ERA-Interim, it remains unclear whether they in fact are, or if they are "blacklisted". We thank the referee for bringing this to our attention.

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The text in red has been added to the relevant sentence: "To the best of our knowledge, **for the period analysed here** the only Greenland SAT observations that are assimilated by ERA-Interim are from DMI stations, and so the ice sheet stations still provide independent data."

25 Report #2 (Xavier Fettweis, 03 May 2017)

Minor: please update the reference Fettweis et al. (2016) to the TC version: Fettweis, X., Box, J. E., Agosta, C., Amory, C., Kittel, C., Lang, C., van As, D., Machguth, H., and Gallée, H.: Reconstructions of the 1900–2015 Greenland ice sheet surface mass balance using the regional climate MAR model, *The Cryosphere*, 11, 1015–1033, doi:10.5194/tc-11-1015-2017, 2017.

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The citations and reference have been updated accordingly.