

Interactive comment on “Greenland ice sheet surface mass balance: evaluating simulations and making projections with regional climate models” by J. G. L. Rae et al.

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Received and published: 17 July 2012

I am happy to see an article comparing the performance and predictions of several regional climate models in detail. I only wanted to comment on the section concerning threshold estimates for reaching a negative SMB. The range of 1.1–2.3 K for this threshold is cited from Robinson et al. (2012). However, this is incorrect. In our simulations, the predicted Greenland temperature range for reaching negative SMB was 2.0–3.5 K (see the grey solid curve in Fig. 2 or the table in the Supplementary Information). This range was obtained by running only the climate and surface model with a fixed topography, which is comparable to the simulations presented here. The lower range

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of 1.3–2.3 K was obtained by running fully coupled simulations of the surface mass balance with an interactive ice sheet model, and it does not represent the SMB turning negative. Therefore, I would recommend correcting this reference to be consistent with your range (ie cite the range 2.0–3.5 for zero surface mass balance).

Interactive comment on The Cryosphere Discuss., 6, 2059, 2012.

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