

Interactive comment on “Comparison of surface mass balance of ice sheets simulated by positive-degree-day method and energy balance approach” by Eva Bauer and Andrey Ganopolski

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Really interesting paper. Did you do any sensitivity tests looking at the impact of ice sheet model resolution on the resulting mass balance (either PDD or SEB)? From what I can gather, the ice sheet surface mass balance is $1.5\text{deg} \times 0.75\text{deg}$. This seems somewhat coarse. van den Berg et al (2006, J. Glaciology) suggest that lower resolution surface mass balance can have a wide variety of solutions because slight changes in the ELA can have a large impact on the size of the ablation area. Other papers have shown similar results, in which the surface mass balance does not stabilize until resolutions finer than 10 km (Ullman et al., 2015; Nat. Geosci).

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