

I applaud the authors for the large amount of work they did for these revisions and I think the manuscript is much improved. I especially appreciate the comparisons of the dist-PDD and the uni-PDD models and feel more convinced of the utility of a spatially varying PDD model. I have a few minor comments listed below and am happy to accept the manuscript once these minor concerns are addressed.

L23: Recently published, Banwell et al (2023) (<https://doi.org/10.1029/2023GL102744>) actually found a significant (but small) decrease in AIS ice shelf melt days using a snow model and microwave observations

L215 – fix T₀ (change to subscript)

L343 – I am confused by the statement “because of the linear relationship between air temperature and surface melt”. Is there a typo here? Doesn’t Figure 9 (and other works) demonstrate a non-linear relationship between air temperature and surface melt?

Figure 7 – Specify in the caption that this is for dist-PDD (same for Figure 8)

L415 – Please add the Banwell et al 2023 citation with Bell et al and Trusel et al.

L435 – I would recommend elaborating that the “dist-PDD” and “uni-PDD” are “spatially varying” and “spatially uniform” PDDs here because it is the start of the conclusion.

L447 – “Underestimation” of what?

Appendix - Figure D4 is not referenced anywhere and should be referenced somewhere in the text