

Reply to Editor comments on

# “Bias in modeled Greenland ice sheet melt revealed by ASCAT”

by Anna Puggaard, Nicolaj Hansen, Ruth Mottram, Thomas Nagler, Stefan Scheiblaue, Sebastian B. Simonsen, Louise S. Sørensen, Jan Wuite, and Anne M. Solgaard

Terminology of "melt" and "melt maps". I thank you for your choice to change "melt" to "liquid water" throughout, following the reviewer's insight. However, I still find use of "melt maps" to be incorrect, and now inconsistent within the new terminology of the manuscript. I agree with the reviewer that "melt map" is a misleading name, and I disagree with the authors' assertion that the terminology should be repeated in order to agree with recent work (Nagler et al., 2024 and Boxall et al, 2024). Those studies did not have the benefit of this astute reviewer comment, but this does not mean we need to propagate their flawed terminology forward. Please rename all "melt maps" to something consistent with what they are: "liquid water maps" or however you judge best to craft it.

We have now changed the name to ASCAT liquid water maps throughout the whole MS. To mitigate possible confusion about the different names, we have added this the first time ASCAT liquid water maps are introduced:

L 73-73: “Instead of using a simple threshold method, ASCAT liquid water maps, also known as ASCAT melt maps, utilize an algorithm that incorporates the temporal behavior of the backscattered signal”

## Other minor suggestions:

"Therefore, the baseline threshold was set to the smallest value possible " -- Please state the value (0.1 mm w.e./day). These sentences also appear in both the Methods and the Results section. Please remove them from Results.

We have removed the sentences from the results and stated the value in the method section:

L249-251: “Therefore, the baseline threshold was set to the smallest value possible (0.1 mm w.e. day<sup>-1</sup>) without allowing regridding biases to impact the number of melt days.”

Table 1, "the mean July and August air temperatures" -- this would be clearer as "the mean July through August air temperatures".

Done.