

Response to comments from Referee #1 for TC-2021-384

- *OK to keep the manuscript mainly as it has been and to leave the melt/SMB evaluation for a further paper. But as only temperature is compared after assimilation of IST without any comparison/evaluation of SMB, using the word "surface energy balance model" instead of "SMB model" or "snow model" through the paper would be more fair. If the authors prefer, ok to keep "SMB" model (if it is the model name) but in this case, it is important to well specify that only IST is discussed/evaluated here and not SMB/melt.*

We have opted for the second option, i.e. to maintain the SMB title and clarify that the results/assessment only cover the IST component in this manuscript. Please see examples in lines 49-50, 79-80, 161-164, 305-308, 309-310, 316, 322, 327-330, 334-338, 402-405, 442-443, 445-450, 452-453.

- *For example, the legend of Fig 12 should be "snow model control run" vs "snow model assimilation run" instead of SMB.*

We have not modified the titles of the two panels in Figure 12 yet according to the response above we have clarified that only simulated IST is evaluated and not SMB and melt.

- *Idem, in the abstract, the sentence: "inclusion of the L4 IST dataset improved the model performance during the key onset of the melt season, where model biases are typically large" is too vague and needs to be precise to something like "inclusion of the L4 IST dataset improved the modeled IST during the key onset of the melt season, where model biases are typically large and could impact amount of simulated melt".*

Sentence was modified accordingly.