

I would like to thank the authors for the additional effort they put in the revision of the manuscript. Please find below some additional final remarks (line numbers refer to the revised manuscript with marked changes):

Day-to-day fluctuation in air temperature

Thanks for the additional graph in the replies comparing NARR, AWS and synthetic data. I'm a bit puzzled now about the distinctively different (and lower) fluctuation in the NARR data. Did you use monthly averaged air temperature data from NARR? If so, I would mention this somewhere...

L127: "we increase our uncertainty..." → still difficult to understand – I would rather remove this part. The following new sentence is also a bit hard to follow: Why is the borehole diameter (better use SI units to specify) related to the depth of measured temperatures?

L157: Maybe better: "and a Neuman boundary condition for the heat equation at the bottom of the 50 m deep firn column."

L174: Very nice that you now consider seasonal variable snow accumulation. Could you show the monthly scalars you computed (respectively the seasonal variation in snow accumulation) in a plot (could be moved to the appendix)?

L490: Sorry, I'm still confused by your reasoning. I think I can (partially) follow why aspect and solar radiation could contribute to a slightly warmer temperature – but why does this configuration cause less melt in summer (B5 should then still receive more radiation – right)? If in doubt, I would rather remove this part because I think the meltwater percolation hypothesis is sufficient...

L542: Forgot to include rephrased sentence: *Additionally, firn loses pore space in response to warming more readily than it gains pore space in response to cooling; observed densification of the firn to date therefore has long-term consequences for runoff buffering (Thompson-Munson et al., 2024).*

Overall, I'm still a bit puzzled by this statement: I guess the rate of firn pore space increase during cooling is, after reaching sufficiently cold temperatures, mainly a function of snow accumulation, which is not mention here...

L610: Spell out abbreviation "ANOVA"

Fig. A4: Forgot to include rephrased sentence: *Panel (b) shows model runs spun up with temperature values randomly selected from a Gaussian distribution based on elevation-corrected Divide AWS data. A historical warming rate of $0.024^{\circ}\text{C a}^{-1}$ between 1979 and 2016 was applied to these data (Williamson et al., 2020).*

Typos, phrasing and stylistic comments

L14: "would represent likely indicate" → would likely indicate"

L76: "we're" → "we are"

L88: "We removed outliers..." → this sentence reads odd and should be rephrased

L154: Better (?): "We do not expect that using a different firn"

L201: "We" should remain in the sentence.

L455: "can be observed Eclipse at the kilometre scale..." → fix