

Manuscript tc-2022-89 – Response Document

Comments to Referee Three

We thank Referee Three for their feedback on our manuscript. The comments were helpful and have led to improvements in the paper. Please see our following responses **in bold** and our proposed alterations.

Throughout the manuscript, the author should update their date formatting to that stated by The Cryosphere, "Date and time: 25 July 2007 (dd month yyyy)"

Upon consultation with the editor, we have decided to leave the dates formatted as is. We are concerned about plot space with the long date format, as well as redundancy with column and subplot headings.

Figure 10 caption states, "Average estimates of snowmelt duration..." but the y-axis is "Average Melt Onset Date (DOY)". I'm unsure if this is the incorrect plot or just a typo; please check.

The y-axis label was incorrect for Figure 10. It has been edited to read “Average Melt Duration (Days)” alongside Figure S10 in the Supplementary Materials. We appreciate that this mistake was caught, as a similar issue was found with Figure S8. The y-axis of Figure S8 has now been adjusted to read “Average Day of Snow Disappearance (DOY).”

L373: Change year from 2021 to 2020 as per citation.

In the most recent upload of the manuscript, we were unable to find a citation from 2021 on L373. However, there was an error in the citation on L359. It has since been updated from 2021 to 2020.

L446: Check this sentence's grammar - it probably needs and 'and'. "The inclusion of optical data with a more frequent revisit interval the use of complex snow detection algorithms could improve this analysis.

In the most recent upload of the manuscript this sentence is located on L431. The sentence has been reworded for clarity: “The inclusion of optical data with a more frequent revisit interval, or the use of complex snow detection algorithms, could improve this analysis.”

Changes to the Manuscript

A summary of all relevant changes to the manuscript can be found here:

- **Line 359:** Citation is corrected to “2020.”
- **Line 431:** Sentence amended to “The inclusion of optical data with a more frequent revisit interval, or the use of complex snow detection algorithms, could improve this analysis.”
- **Figure 10:** The y-axis is changed to “Average Melt Duration (Days).”

- **Figure S8:** The y-axis is changed to “Average Day of Snow Disappearance (DOY).”
- **Figure S10:** The y-axis is changed to “Average Melt Duration (Days).”