

Thank you for the detailed responses and the thoughtful revisions made to the manuscript, which clearly clarify and fully address the suggestions raised during the review. I have just a few minor points of clarification following your comments and replies. Congratulations on this work, which presents very strong results and insightful discussions!

Spatial variability and albedo

3) Furthermore, regarding the results presented in Figure 12, it seems important to mention that the satellite images for 2023 and 2024 were acquired in September, a period when the glacier's albedo is likely not at its lowest (see Figure 2). Could the comparison of glacier-wide albedo between years be somewhat biased by the late acquisition dates in these two years (e.g., line 343)? This point could be addressed.

The images were selected for minimum snow cover and all suitable (cloud free) images were considered. Both 2023 and 2024 had relatively long ablation seasons that extended into October. In 2024, the lowest albedo at the AWS was measured on September 8 and the S2 image in Fig 12 is from Sep. 7 (see Fig 3 and Table 2). The image and the AWS minimum coincide very closely. In 2023, the lowest albedo value at the AWS occurred on August 23. A small snowfall event then brightened the surface. This snow melted again in the following days across most of the glacier, although some snow remained at the AWS location. The S2 image from August 24 is partially affected by clouds and cloud shadows (left image in the figure below). In the S2 image from September 10 (shown in Fig. 12 and below on the right) the remaining seasonal snow cover has retreated further compared to the Aug. 24 image, although a minimal amount of snow from the summer snowfall in late August remains at the AWS location. The exposed bare ice surface appears visually brighter in some areas of the Sep. 10 image but we do not believe this indicates a bias due to the time of year.
=> Thank you for these details. This is indeed very interesting and would merit at least a brief mention in the revised manuscript.

Line 83: Ice temperature sensor: Is it used in this study?

No. The information from the thermistor strings informs the initial ice temperature assumptions made in the energy balance model in a general way but this sensor is not essential for the study. We mention it here for completeness along with the other components of the AWS. We can remove this if it is confusing or seems unnecessary

=> As these data are not used, I believe it would be more appropriate to remove them to avoid any confusion.

Line 139 and throughout the document: "Low" and "very low" refer to specific values (i.e., 0.2 and 0.4) as indicated here. These terms are used throughout the document, sometimes with quotation marks and sometimes without. Conversely, "low albedo" is sometimes mentioned without explicitly referring to these values, making the text harder to follow. Please ensure that quotation marks are consistently used when referring to these specific values, or alternatively, use a uniform notation (e.g., $alb < 0.2$).

We will go through the manuscript to ensure consistency.

=> Thanks. I still have a doubt regarding lines 193 and 195 (in the revised version) — should it be 'low' in quotation marks, or just low without them?

Line 234, 238: "Generally coincide or occur" – This statement could be quantified (e.g., using delta day) to add more weight to the comparison.

We added a note on this in the revised manuscript. In 2018, S2-derived "low albedo" was observed five days prior to "low albedo" conditions at the AWS. Otherwise the S2-derived low albedo periods are within the AWS low albedo periods. In line 238, the statement is followed by a description of cases when there are discrepancies with examples. The stakes are not expected to have low albedo at exactly the same dates due to varying snow melt patterns. The irregular nature of the S2 time series makes it challenging to meaningfully interpret shifts of a few days - these may be due to snow melting earlier or later at one stake compared to the next, or to differing availability of S2 imagery.

=> The second part of your answer is particularly interesting and relevant: (i.e.: "The stakes are not expected to have low albedo at exactly the same dates due to varying snow melt patterns. The irregular nature of the S2 time series makes it challenging to meaningfully interpret shifts of a few days - these may be due to snow melting earlier or later at one stake compared to the next, or to differing availability of S2 imagery.") In my opinion, this deserves to be included in the manuscript, even briefly, as it provides valuable context for interpreting the data.

Technical corrections:

line 304 (revised version): $yr^{\gamma}-1 \Rightarrow yr^{\gamma}$

line 593: MacDONELL => MacDonell