

Dear Dr. Hartl and co-authors,

Thank you for this revised version and for addressing the reviewers' comments.

The reviewers confirmed that your dataset is valuable and well-structured and that your article was well written despite the amount and complexity of the data that you have to present.

I still have some comments on your tables and figures, some of which I still find hard to read. Once you have addressed those comments, I will be happy to accept your manuscript for publication without further review.

Kind regards,
Baptiste Vandecrux

Dear Dr. Vandecrux, thank you for the thoughtful comments and time spent on this. I think we have addressed all the points, see details below.
Lea Hartl on behalf of the authors

Figure 1: Please harmonize the way you present elevation: make all text labels black, show names of AWS (AWS_VK and AWS_MWK) next to their markers and give elevation under the name without parentheses. For G, you could consider adding a black cross at the summit location.

Changed as suggested.

Table 2: I am wondering if the table would be clearer if transposed. It also starts to be many values in individual cells. Consider adding more columns (in its current form) or rows, if transposed (sorry for the text formatting):

...

Transposed the table. This does make it easier to read, good idea.

Figure 2: Please move the legend so that it does not hide the axis. The legend could be made more complete and clearer by grouping markers under categories:

GI 1-3 should be replaced by their years and shown with the same solid lines as outlines for 2012-2022. All outlines should be grouped under a "Glacier outlines" category. You can mention in the caption that the data source for each outline is given in Table 2. Why not plot all outlines from Table 2 in the Figure? If two outlines are overlapping, you can mention it in the caption. In the legend again, colored circles should be placed under a "Point measurement" category, which should also present (before the years) a black circle for "stake" and a black square for "snow pit". All the yearly markers in the legend could be replaced by a small vertical color bar with label "2007" next to the top and "2022" next to the

bottom. "AWS" in the legend could be replaced by "AWS_MWK" so it doesn't have to be explained in the caption.

Figure 3: Same as Figure 2. For this Figure, "stake 95" and "stake 100/VEK-24" could be given as labels on the map next to the black circle. Maybe a single circle/oval could be used to indicate each of these stakes' areas (since they change location with the year). The same could be done in Figure 2 for stake 11.

Adjusted the figures to address these points. Fig 2 and 3 now include all outlines listed in Table 2. The initial intent was to focus the figures on the newly published outlines, but showing all of them is of course also possible. GI4 (2015) is dashed because this one has some inconsistencies with the others due to a different mapping approach and to distinguish it from the other 2015 outline available for MWK. We note this in the caption. Zooming out far enough to show the full extent of the historic outlines makes it hard to distinguish the stake and pit locations so I left the zoom level as it was.

Table 4: Make range and accuracy separate columns. Make "Wind speed" and "wind direction" two separate rows that share the same instrument. Remove "Wind Speed & Direction Sensor" from the sensor name cell, as it is completely redundant with the parameter name. Make "Shortwave radiative flux" and "Longwave radiative flux" separate rows that share the same sensor. The calibration date and derived uncertainty do not fit with the Range and Accuracy columns of the other parameters. Please move that information to the main text and explain what the reported uncertainty means or how it should be used. The table caption should describe what is in the table, but "Data logger at both stations: Campbell Scientific CR3000." is information of its own. Please move it to the text.

Made separate rows as suggested and moved information re. calibration and data logger to the text. I am struggling with the formatting of this table in the latex template and did not manage to nicely format the rows with multi-row cells. The cells are all in the latex table as they should be so it is a matter of centering the text and placing lines. I can't figure out how to do that for the multi rows. I am guessing that the table formatting will be adjusted to match the journal layout requirements and I would be very grateful if this could be handled at that stage.

Table 5: You tend to use lines to report multiple pieces of information: [parameter + site] or [% flagged for SWin + SWout]. This makes the table more complicated to read. Please make separate rows for wind speed and wind direction, for downwelling/upwelling shortwave/longwave radiation. Please move "low temperature flags" to the caption or to a note at the bottom of the table. I strongly suggest that you make two columns "% flagged for AWS_MWK" and "% flagged for AWS_VK" and have one row per parameter. The Start/End dates were very hard to read and understand due to the grouping per parameter instead of per station. It would be much clearer to say that "AWS_MWK was active between

2020-08-10 and 2023-10-31 (except for radiation which started on 2021-09-21 and snow height which is available between 2019-07-01 and 2022-06-02)." and "AWS_VK was active between 2019-09-19 and 2023-10-31 (except for snow height which is available between 2020-07-01 and 2022-06-28)." This information should appear clearly in the text (instead of a very unspecific "... for a sub-period of the overall time series" on I.333), and if you think it is important, in the caption of Table 5. I feel that if the dates are clear in the text, they do not need to appear in Table 5.

Changed the table as suggested, moved the date information to the text and rephrased to make this more clear. The stations are still active, hence we indicate that the percentages given here are for the data up to October 1, 2023 (i.e., the same as the data set currently available on pangaea)

Figure 4 and 5: Please make sure that "July 1" and "September 30" do not overlap with the figures' frames.

Moved annotations further away from the figure frame.

Figure 7 & 8: A lot of plotting space is lost between the panels. I strongly suggest you update these figures so that the year is inside each panel on the bottom left or center and that the axis ticks point inward. Then the space between subplots can be removed altogether. Optional: make a legend showing the different types of markers and place it to the right of the 2022 panel.

Changed as suggested.

Figure 8: Please increase the size of the probing circles (unless my previous comment makes them visible enough). Give an edge color to them.

Increased size and added a red edge.

Figure 9 & 10: Same as Figure 7 & 8. Please place the year in the top-right corner of each panel and remove space between subplots. A single-line legend could be placed at the top.

Changed as suggested.

Figure 12 & 13: Optional: You could put the year in the top left corner and remove the spaces between subplots. This would allow putting both figures on the same page.

Moved the year to the corner and reduced white space. The latex template still does not place the figures on one page but this would probably be possible in layouting. I did not want to mess with the settings in the template so I did not attempt changing the fig size.

Figure 14 and S3: I cannot distinguish daily mean RH and daily mean pressure. Please plot the two variables in separate panels. For temperature, I do not see what "daily low/high, monthly mean" can be used for. Is it used in the text? If not, it can be removed from the graph. For all panels, make the legend a single line (except for radiation where there is

space) and modify the y-axis to ensure that the legend does not mask the data. Please plot longwave radiation as well.

Added panels to separate RH and pressure and to show longwave radiation. Removed lines for mean monthly daily low/high temperatures (this can be of interest in a climatological context but is not needed here). Changed legend positioning as suggested.

I strongly suggest bringing Figure S3 into the manuscript as Figure 15 and removing Table 6, which doesn't give more information than Figure 14 and S3. The first paragraph of Section 3.2 can be supported by Figure 14 and S3 without problem.

Fig. S3 is now Fig 15 in the manuscript. I moved Table 6 into the supplement as Table S1.

Table 7: Please make the DOIs clickable hyperlinks. Make sure "DOI" is capitalized in the entire article. Capitalize "Reference" just like the other column headers.

Changed as suggested.

Figure S1 and S2: Great work to remove all this noise. I am wondering if the plotted data are hourly averages of 10-minute values. If that is the case, I am wondering whether you are de-noising the 10-minute data or directly the hourly averages. I have seen that type of noise in Greenland AWS data. It appeared when the sonic rangars "see" two reflectors (one being the surface the other one that could be the station mast or a cable). The hourly average then jumps based on how many times the wrong reflector was picked during that hour. Going back to the highest temporal resolution should show those two separate reflectors without the mixing induced by temporal averaging and should make the removal of the spurious reflector easier. This does not have to be implemented for the publication of this article.

The black markers in the plots are 10 minute values as recorded by the logger and this is what we are using for the denoising, which involves a lot of pretty heavy handed smoothing. In our case the multiple "lines" of spurious data are not a result of hourly averaging, this is already present in what we have from the logger. We think it is related to an issue with the actual sensor rather than a signal from a "wrong" reflector but have not been able to pin point the problem with certainty. The logger samples every minute and stores 10 minute averages, so it is possible that the mixing issue you describe happens at that stage - we will see if we can change the logger settings to check if that is causing it (this is beyond the scope of this article but interesting for future work with these stations).

Figure 15 and Lines 451-454: Present the PDD sums for the two stations. Since PDD is not a variable present in your dataset, it falls outside of the scope of an ESSD article, which should only describe the dataset. Please either remove or boil it down to a single sentence stating which years had the highest/lowest numbers of positive degree days. Figure 15 should be removed anyway.

Removed the figure and the text related to PDD.

I. 514: "are advantageous in terms of" replace with "have the advantage of"
Replaced as suggested