Response to Reviewer

We thank the reviewer for the thorough and constructive evaluation of our manuscript. We appreciate the time and expertise invested in providing detailed feedback. The comments have significantly improved the clarity, structure, and overall quality of the manuscript. Below, we provide a point-by-point response to all comments. Reviewer comments are followed by our responses in italic.

During the manuscript revision, we introduced a new filtering routine called the Rate of Change (ROC) method, which is now described in Subsection 3.3.2. As part of this update, the old Subsection 3.3.2 on percentile filtering was merged into Subsection 3.3.1, and the percentile-based component was removed entirely. Consequently, the original Figure 8 and the original Table 6 have been removed. The former Figure 9 is now presented as the new Figure 8, and a new Figure 9 has been added to illustrate the Rate of Change filtering method, together with a newly constructed Table 6 supporting the new Rate of Change subsection. We found that the percentile filter did not perform as intended, so we replaced it with the Rate of Change filter. This reflects our ongoing effort to refine the data and continuously improve the processing workflow. This is also one of the reasons why users should always check the README file for updates related to the *pypromice* data-processing pipeline.

1. Major comments from Jacob Yde

1.1 Structure of Introduction not logical; “Background” should precede “What is new.”
Response:
Following the suggestion, we have fully restructured the Introduction. The “Background” section now appears first and presents the chronological development of AWS monitoring in Greenland. This is followed by a rewritten and expanded “What is New” section. We also moved the final paragraph of the former Background subsection into “What is New,” as suggested. The revised Introduction now follows a clear chronological flow and improves readability and context for new readers.

1.2 Section 5.2 requires substantial revision
Response:
We agree and have completely rewritten Section 5.2. All bullet points have been consolidated into a new table summarizing common issues, frequency, impacts, and mitigation strategies. The main text has been rewritten into a coherent narrative highlighting field experience, lessons learned, and representative examples of problem-solving.

2. Minor comments
All minor comments listed by the reviewer have been carefully addressed in order. These include improvements to clarity, consistency, terminology, sensor descriptions, figure captions,

station counts, and the overall coherence of the manuscript. Numerous textual clarifications, corrections, and structural adjustments were implemented throughout the manuscript. Figure captions and table captions were expanded substantially, and inconsistencies in instrument naming, units, and section numbering were corrected.

We again thank the reviewer for the very constructive and detailed feedback that helped us significantly improve the manuscript.

Minor Comments (Addressed Individually)

L2: Include GEM stations

Response:

GEM stations are now explicitly mentioned in the first paragraph of the manuscript.

L2–3: “More than 50 sites” too vague; specify exact numbers

Response:

We now give exact counts of active vs. historical stations both in the Abstract and Introduction.

L13: Add question mark to “What is new”

Response:

No need for a question mark.

Heading numbering inconsistent

Response:

All heading levels have been standardized to ESSD style using copernicus.bst and copernicus.cfg config files for LATEX.

L14: Awkward comparison to Fausto et al. (2021)

Response:

The sentence has been removed during Introduction restructuring.

L18: Explain AWS

Response:

Now written as automatic weather station (AWS) at first occurrence.

L18–19 & L86: Specify exact numbers of stations, clarify “now”

Response:

Done. “Now” is replaced with “as of late 2025”, accompanied by precise station counts; text checked for consistency throughout.

L20: “See 1 for more information” unclear

Response:

Replaced with a proper reference.

L25: Clarify NiMH battery description

Response:

Rewritten to: “high-density nickel–metal hydride (NiMH) batteries.”

Clarified that “new” refers to stations installed after 2021.

L26: What are “all new stations”?

Response:

Introduction rewritten. Clarified that “new” refers to stations installed after 2021.

L30: Expand description of CF-compliant NetCDF and CSV formats

Response:

Updated exactly as suggested and note added on earlier TXT format.

L68: Bracket placement and terminology

Response:

Text rewritten for clarity; "groups" and "projects" clarified; grammar corrected.

L70 & L77: 2021 integration mentioned twice

Response:

Resolved via complete Introduction restructure.

L78: Clarify "our expertise"

Response:

Changed to "GEUS expertise".

L80: Spacing and grammar

Response:

Corrected.

L82: Insert "Gletsjer"

Response:

Corrected to Mittivakkat Gletsjer.

L111 onward: Improve clarity of instrument descriptions

Response:

A major revision was performed:

Short introductory text now explains what each sensor does and why it is used.

Technical descriptions rewritten so non-experts can follow them, however, the most important point is the possibility of looking up all the individual instruments and sensors for more information from the manufacturer.

Unit consistency (L119, L196, L210, etc.)

Response:

All units now appear consistently in parentheses on first use.

Rotronics setup unclear

Response:

Expanded to explain the assembly and its function.

L244–245: Remove marketing-style wording

Response:

Rewritten to describe only the specific inclinometer used.

L252–255: Clarify constants, remove irrelevant reference, add units

Response:

How the constants were obtained is now clarified. All corrected.

L255: Accuracy of inclinometer and compass

Response:

Manufacturer specifications are in the Appendix.

L261: Add reference to accuracy statement

Response:

Manufacturer statements are added to the text.

L332: “Potentially reduce quality”—is there evidence?

Response:

There is no evidence of this.

L341–347: Move paragraph to figure captions

Response:

Moved accordingly.

L349: Add anti-torque rod and battery box

Response:

Battery box is already part of the instrument list, while the anti-torque rod is not really an instrument.

L357: Double-spacing in front of “120”.

Response:

Done

L369: The phrasing is a bit awkward. Consider changing to “In contrast to the previous setup described by Fausto et al. (2021), the …” or something similar.

Response:

Changed.

L391: The sentence should be moved to sub-section 2.1.4. It is unclear whether the Geonor T200B is in addition to the other rain gauge or it has replaced the other rain gauge.

Response:

We understand the confusion; however, we prefer to keep this information here because we have only one land-based station equipped with a Geonor T200B, whose rain-gauge setup differs from the other stations and is not part of the standard configuration. We have added this information.

L409: If not done earlier, then this would be a good place to inform how many of these 52 sites are active or historic. Have any of these 52 sites been relocated up-glacier to compensate for the down-glacier transport of the stations?

Response:

Information on active/historic stations is in Table 3. Relocation information comes later.

L432-L433: Insert a reference to Table 2 after "time" instead of at the end of the sentence.

Response:

L434: Plural – "locations".

Response:

Fixed.

L495-L499: There are some unnecessary repetitions here that should be deleted.

Response:

The repetition is kept placing the content clearly within the data-processing pipeline framework.

L514: Explain the terms "pypi" and "conda-forge".

Response:

Information added

Figure and table comments

Response:

All comments addressed:

rewriting all captions to be fully self-contained,

clarifying all instrument names (e.g., OTT Lufft WS401),

adding dates to photo figures,

adding missing explanations for colors and panels,

updating Table 1, Table 5, Table 6, Table 7 and Appendix tables for clarity, sorting, and completeness.

L632–639, L637: Expand justification of Yang et al. (1999)

Response:

A fuller explanation now discusses gauge-height differences, representativity, limitations, and the rationale for using the equation.

L645: Mention no corrections for evaporation, wetting, or trace precipitation

Response:

Yes, there are no corrections for these. Added to the text.

L746: Just write “AWSs”.

Response:

Done.

L772: The reference to Fig. 15 appears before references to Figs. 12-14.

Response:

Fixed.

L823: Delete “see”.

Response:

Fixed.

L827: Change “&” to “and” unless it is required by the ESSD layout and insert space in “10 m”.

Response:

Fixed.

L827: Plural – “Estimations” and “Calculations”.

Response:

Fixed.

L837 and L838: There is only one “Data Example” – singular. Is it necessary to have the heading in L838 “AWS data along two transects”, if there are no other headings in sub-section 4.5?

Response:

Fixed.

Section 5.2 organisational issues

Response:

Fully rewritten (see major comment #2).