We thank the editor for catching what we had missed in our response to the reviewers. Our detailed responses to the editor comments are provided below in blue.

Dear Authors,

The manuscript is suitable for publication pending minor revisions. Please address the following points, and provide justifications if any cannot be implemented:

Reviewer #2 comment on "Automated monotonicity correction (Section 3.3, lines 297–302; Fig. 3)": The clarification regarding error flags and future QC flag implementation is appreciated. However, the response does not answer the reviewer's request to quantify the frequency of monotonicity corrections or include a counter. Please provide a summary statistic or typical range per sample/site, or explain why this cannot be included, to improve transparency and allow downstream users to understand how often corrections are applied.

Thank you for noticing that we did not fully address Reviewer #2's comment. In Section 3.3, we have added the following text:

"In cases where INP concentrations decrease with decreasing temperature, an artifact sometimes introduced by the stochastic nature of the measurement produced by multiple serial dilutions, the program automatically adjusts the value to maintain monotonicity using a two-fold check. Blank subtraction can also introduce this artifact; therefore the correction is applied after the blank subtraction.

First, a filter is applied to ensure that values genuinely affected by blank subtraction are not included in the monotonicity correction. If a blank-corrected value falls below the lower 95% confidence bound of the uncorrected value, the program replaces it with the previous bin's value and propagates the upper confidence interval using the root mean square of the current and previous intervals. The lower confidence bound from the previous value is applied to the current value. This first correction is applied only if occurrences remain below a user-defined threshold (10% of total temperature bins per sample or approximately 4 temperature bins). If exceeded, the affected bins are flagged with an error signal (–9999).

Then, the monotonicity check is performed on the filtered values. If a filtered value decreases from the value in the previous temperature bin, the program replaces it with the previous previous bin's value and propagates the upper confidence interval using the root mean square of the current and previous intervals. The lower confidence bound from the previous value is applied to the current value.

Thus far, OLAF has only been used to process four sets of data that are available on Data Discovery from TBS deployments in 2025. Of those sets, the monotonicity correction was applied to 68% of the samples, on average correcting less than two temperature bins per sample. The correction was applied almost completely due to dilution stochasticity and rarely due to blank subtraction. OLAF will be used to generate data from INS processing at all sites moving forward. We expect ground-based sites to be similar or experience less frequent corrections due to higher collection volumes. Finally, the software compiles the blank-corrected data across all treatments (base, heat, and peroxide) into a single output file, including treatment flags for each sample."

Reviewer #2 comment on “Blank strategy and Oliktok (Sections 2.1.2–2.1.3, Table 1; Section 3.2.1, lines 254–255)”: While the ARM portal description for Oliktok (OLI) is helpful, the reviewer’s intent was to ensure that blank type is explicitly encoded in the data product and easily discoverable by users without consulting external documentation. Including a metadata field (e.g., blank_type) or a brief note in Table 1 (e.g., “OLI = lab-only”) would strengthen transparency and reproducibility. Please revise accordingly or provide a clear rationale if this cannot be implemented in the current data release.

Since submitting the revision, all coauthors have discussed and agreed to add new metadata fields to enhance the dataset’s contextual information. Specifically, we are reprocessing all data files to include two new global metadata attributes in the NetCDF files: sample_notes and filter_color. The sample_notes field will contain relevant field observations provided in our field log and indicate cases where laboratory blanks were used (as for OLI), while filter_color will indicate the observed filter color upon collection. These additions are now noted in Section 3.4 and reiterated in Section 4.3, where the OLI blanks are discussed.

Reviewer #2 comment on “Software versioning (Section 3.3, line 286)”: You have provided the GitHub link for OLAF. Please also specify the current commit hash or version tag in the manuscript and ensure this version identifier is included in the dataset metadata. If a DOI (e.g., via Zenodo) becomes available before publication, please include it. Specifying the commit or version is important to ensure reproducibility and traceability, allowing future users to know exactly which software version was used to generate the reported data.

We were able to create a DOI for the current version and have now included it in the manuscript in Section 3.3 (https://doi.org/10.5281/zenodo.17509699). This leads one to OLAF v0.3.0-beta release.

Once these revisions have been addressed or appropriately justified, the manuscript can be accepted for publication.