

Author Comment

Dear Dr. Vogt,

Thank you for your detailed assessment of the revised manuscript and dataset. We appreciate the time you have taken to examine the rainfall record, the isotope sampling events, and the historical fog series in detail. We take the concerns regarding data reliability and traceability seriously.

Following your comments, we will undertake a further comprehensive re-evaluation of the datasets before preparing the final revision.

First, for the long-term rainfall record, we will re-check the monthly and annual values against the available published and publicly accessible Gobabeb records, including the records used in previous studies. We will specifically examine the discrepancies in cumulative rainfall, temporal assignment of individual events, and the inconsistencies between monthly and annual totals that you identified. Any values that cannot be reconciled or independently traced to a reliable source will be corrected, replaced with a better-supported record, or removed from the final data product.

Second, we will re-evaluate the rooftop-derived isotope samples on an event-by-event basis using all available field records and meteorological information accessible to us. Samples for which fog occurrence cannot be supported with sufficient confidence will no longer be retained in the primary fog dataset. Where useful, these excluded observations will be retained separately and clearly flagged as probable or ambiguous non-rainfall atmospheric water rather than fog.

After this re-screening, we will repeat the isotope summaries and derived analyses using the revised set of fog samples and report whether the main isotope patterns remain robust. All affected sample counts, summary statistics, figures, and derived analyses will be regenerated from the revised dataset.

Third, we would like to clarify that the long-term fog-amount series was never intended to represent a continuous set of original observations generated by our study. As described in Section 2.3 of the manuscript, it is a compiled and harmonized historical dataset assembled from literature-derived records, publicly available meteorological observations, and our own measurements. The manuscript already documents the major transitions among Grunow, SFC, and Juvik collectors, the conversion relationships used to harmonize measurements from different periods, and the interpolation applied to the historical data gap.

We recognize, however, that the distinction between directly observed, converted, and reconstructed values may not have been sufficiently prominent in the current presentation. In the revision, we will therefore make the compiled nature of this historical dataset more explicit throughout the manuscript and data repository. We will also add clearer source and processing

flags to distinguish directly observed values from harmonized/conversion-derived and interpolated values, and we will re-check the consistency between monthly and annual totals as well as the associated references.

Our intention is not to present the long-term fog series as a homogeneous observational record collected using a single method, but rather as a transparent synthesis of the available historical information. The methodological transitions, conversions, reconstruction steps, and associated uncertainties will therefore be clearly documented so that users can independently evaluate the provenance, processing history, and uncertainty of each segment of the record.

We will also address the specific inconsistencies and presentation issues identified in the supplementary comments, including dates, units, references, collector dimensions, figure captions, duplicate sampling dates, and the interpretation of multiple samples collected on the same day.

Our goal in the final revision will be to provide the most complete dataset that can be supported by traceable observations and documented processing, rather than to preserve every value in the current version. Where uncertainty remains, it will be explicitly identified in the metadata and manuscript.

Thank you again for identifying these issues. We believe that this additional audit will substantially improve the reliability, transparency, and long-term value of the dataset.

Yours sincerely,

Lixin Wang on behalf of all the authors