

Dear Dr. Hao,

Re: Data description article (ESSD-2025-551); Title: “Mercury dataset over the Third Pole”

Iteration: Revised submission

Authors: Shichang Kang et al.

We sincerely appreciate the reviewers’ positive recognition of our previous revisions and their thoughtful suggestions for further improvement. In this revised version, we have carefully addressed the remaining minor comments point by point. Our responses are provided in blue text, and all corresponding changes in the manuscript are highlighted in red for easy reference.

We sincerely hope that the revised manuscript now meets the standards for publication in ESSD. Should you find it acceptable, we would kindly request that you consider proceeding with the acceptance process at your earliest convenience.

Thank you once again for your time and editorial handling of our submission.

Yours sincerely,

Jie Huang & Shichang Kang

30 June 2026

Response to Reviewer #2

I commend the addition of Table 5, which clearly summarizes the analytical performance and quality assurance parameters. However, I note a few inconsistencies between the table and the main text. For example, for TGM, the text reports a precision of <3% based on manual injections, whereas Table 5 indicates an analytical precision of <8%. It would be helpful to clarify whether these values refer to different definitions of precision (e.g., instrumental versus overall analytical or field precision), or to ensure consistency across the manuscript. The same point may apply to other matrices.

Response: Thank you for the thoughtful comment. We fully agree with the need to clarify the precision values for TGM.

The <3% precision mentioned in the original text referred specifically to manual injection tests using zero-air calibration for the Tekran 2537B analyzer, which is a separate procedure for instrument performance verification rather than a reflection of the actual analytical precision of TGM measurements. To avoid confusion, we have removed that sentence from the revised manuscript.

For TGM measurements using the Tekran 2537B analyzer, the analytical precision is consistently <8% (RSD), which is now correctly stated in Table 5. We have also carefully reviewed the precision definitions and consistency for all other environmental matrices, ensuring that the values reported in the text and in Table 5 are now fully aligned across the manuscript.

Regarding the new Figure 2, which shows the number of valid hourly TGM measurements per month, it is not clear to which station it refers, given that TGM was measured at two sites. This information should be specified for both stations.

Response: Thank you for the comment. We agree that Figure 2 should clearly indicate which station the data represent. As noted, the Tanggula station was established only for a short-term campaign (January 2016) focused primarily on frozen soil-air flux chamber measurements, and thus it could not provide a full year-round time series comparable to Nam Co. Therefore, the monthly statistics of valid hourly TGM measurements shown in the new Figure 2 are exclusively derived from the Nam Co station, where long-term continuous observations were feasible. We have now clarified this in the figure caption and in the corresponding text to avoid any ambiguity.

Finally, I attempted to access the datasets via the provided link (<https://www.ncdc.ac.cn/portal/metadata/17e11af4-5db4-4cc1-a0fa-227cd90c6822>), but the “HTTP download” option did not allow access to the individual .csv files. I therefore could not verify whether the requested edits had been implemented, and I would recommend checking that the data files are fully accessible.

Response: Thank you for pointing out the access issue. We have now uploaded the latest .csv files to the data repository and carefully checked the data files following your suggestion to ensure that they are fully accessible.