

This manuscript documents and validates a daily gridded temperature dataset for Poland, designed for climatological applications. While the methodology is not innovative, it is appropriate for the authors' goals. The validation process uses recommended best practices and metrics, with the manuscript's primary strength being the detailed description of this validation. However, the communication of the research could be improved. With revisions addressing the following comments, the manuscript could be suitable for publication.

Main comments:

1. Station Data Description:

The section on station data requires significant expansion. Specifically:

- a) Are the data homogenized?
- b) Do you use a fixed number of stations over time, or do you include all available stations, potentially varying with time (as suggested in line 73)?
- c) If station number varies over time, how does this impact the dataset's time consistency?

Points a) and b) should be stated in the Abstract too.

2. Temperature Definitions:

- a) Clearly define TG, TX, and TN.
- b) Specify the day definition used (e.g., 00 UTC to 24 UTC).
- c) Does TG share the same day definition of TX and TN?

3. Methods and Equations:

- a) Define all symbols in equations (e.g., "r" in Eq. (2)).
- b) State fixed values, such as the number of sample points ("m").
- c) Provide parameter values for the methods used.
- d) Clarify the statement in lines 123–124: Are you not using elevation as a predictor? This needs to be explicit.

4. Manuscript Organization. The structure of the manuscript should be revised, some sections need to be moved and you should check for repetitions in the text. Some suggestions follows:

- a) Abstract: Avoid unclear phrases like "The linear RBF was employed by hold-out cross-validation (HO-CV) as the most suitable for the gridding procedure among other RBFs." If HO-CV was used for parameter optimization, clarify this. Listing specific scores may not be necessary in the abstract.
- b) Introduction: Clearly state motivations, research questions, and approach. Avoid mixing conclusions into this section (e.g., lines 36–42). Eliminate redundancies (e.g., lines 43–45). Clarify if line 60 refers exclusively to observational datasets.
- c) Reorganization: Consider moving Section 2.4 to the beginning of Section 3, avoiding redundancies (e.g., lines 156–157).
- d) Section 4: Reassess why trend analysis is treated as an application while extremes analysis in Section 3 is treated as validation. Both seem to be dataset applications. Provide a clear strategy for distinguishing these analyses.

5. Dataset Purpose: State whether this dataset is intended for near-real-time climate monitoring (e.g., with regular updates) or as a one-time release

6. Title. A more concise title, such as “PL1GD-T: High-Resolution Gridded Daily Air Temperature Dataset for Poland,” is recommended.

Minor comments:

Ensure consistent use of terms for TG, TN, and TX (e.g., TG is inconsistently referred to as TMEAN in Fig. 4 and TAVE in Section 4). Standardize abbreviations throughout the manuscript: e.g. replace 90% quantile and 10% quantile with 90th percentile and 10th percentile.

Line 260: This sentence seems abrupt and lacks context, making it feel disconnected from the surrounding text. Consider revising it to provide a smoother transition and explain its relevance to the discussion.