Response to Reviewer 4 Comments

1. Summary

Thank you very much for taking the time to review this manuscript. Please find the detailed responses below and the corresponding revisions/corrections highlighted in the re-submitted files.

2. Questions for General Evaluation	**Reviewer's Evaluation**	**Response and Revisions**
Does the introduction provide sufficient background and include all relevant references?	Yes,	No response is required
Is the research design appropriate?	Must be improved	The authors addressed the reviewer comments
Are the methods adequately described?	Can be improved	The authors addressed the reviewer comments
Are the results clearly presented?	Can be improved	The authors addressed the reviewer comments
Are the conclusions supported by the results?	Can be improved	The authors addressed the reviewer comments
Are all figures and tables clear and well-presented?	Yes	No response is required

3. Point-by-point response to Comments and Suggestions for Authors

Comments 1: The manuscript entitled "A Comprehensive Comparative Study on Evapotranspiration in Mainland Portugal Based on Climate Reanalysis Data" presents an intercomparison of methods for estimating potential evapotranspiration (Ep) and reference evapotranspiration (Eto) for Portugal using different methods. It is well written and organized, with legible figures and the quality required for a good publication.

Response 1: The authors thank for the positive comment of the reviewer.

Comments 2: However, the biggest problem, in my opinion, is assuming data sources based primarily on satellite data (GLEAM) and a gridded analysis based on ERA5-Land reanalysis (Bristol) as the surface truth. The study should have been conducted by comparing the results of the methods with evapotranspiration values obtained from meteorological stations. The evapotranspiration values then calculated with stations would be compared to those obtained from GLEAM and ERA5Land, via the different methods, with the values obtained by the Penman-Monteith method serving as a reference for the comparisons. This observational limitation introduces uncertainty into the analyses and would need to be very well justified and proven based on observations, which can be used as primary sources for intercomparison. I recommend that the authors consider the above arguments for resubmitting the manuscript.

Response 2: The authors fully agree with the reviewer's comment that a comparison with evapotranspiration values derived from ground-based stations would be highly desirable,

particularly with regard to the main results related to Penman–Monteith reference evapotranspiration (Eto). However, despite substantial efforts to obtain the necessary ground observations, such data were not available for the study area, even for a short period. The only information that could be retrieved consisted of a few mean annual values in a couple of locations presented in older references and official reports, without sufficient detail regarding the methodologies or models used for their estimation. Given these limitations, a reliable and meaningful comparison could not be performed, and the authors therefore had to forgo this analysis. The only possible comparison is the one mentioned in line 204. Some previous attempts in Portugal to compare Eto datasets with evapotranspiration values obtained from measurements in meteorological stations were mentioned in the introductory section (line 100). However, in this study the brief comparison of Eto with various products considered only a few local ground stations and did not cover the entire Portuguese continuum.

4. Response to Comments on the Quality of English Language: No improvement is required.

5. Additional clarifications: The authors would like to emphasize that the revised text includes additional corrections and changes resulting from the other reviewers' comments, which have changed the line numbering in the revised document.