The manuscript touches upon an interesting and important subject, the creation of ensemble gridded data sets. The manuscripts presents a FORTRAN-to-Python translated, yet also improved, software package. In addition, the manuscript shows a number of example applications of the software. The manuscript could be a welcome addition to what is currently available to the scientific community.

The manuscript is written in a clear style, is interesting to read, and provides well-chosen examples.

Response: Thank you for the comprehensive review and insightful feedback on our manuscript. We have addressed each of your comments in detail below and revised the manuscript accordingly.

MAJOR COMMENTS

1) Given the importance of creating ensemble grids, which is reflected by the title and introduction, it would be desirable that the authors spend more time on explaining the way in which the software generates the ensemble members. Currently, the discussion of the ensemble creation methodology is not detailed enough.

Response: Thank you for emphasizing the significance of ensemble estimation. To address this, we have expanded Section 2 to provide more comprehensive explanations of both deterministic and probabilistic estimations, including both text descriptions and equations. We also divided Section 2 into three sub sections to be clearer. The updated methodology section now includes all essential introductions and has clearer organizations. Equations (5)-(7) provide a complete description of the probabilistic estimation.

Meanwhile, we still recommend readers consult the original documents cited within this section for in-depth understanding of intricate technical details such as the generation of SCRFs. The primary objective of this paper is to introduce the GPEP package, building upon established methodologies from GMET's legacy documents and codes. Echoing too many details that have been well documented in previous publications could distract from the contribution of this manuscript.

2) In the examples, there is much attention for the predictive accuracy of the ensemble mean. However, there is less emphasis on the accuracy of the ensemble dispersion. Given that one of the main pros for using this software is that it can create an ensemble data set, I would suggest that the authors show the accuracy of the gridded ensemble dispersion, for example by showing rank histograms.

Response: Thanks for the suggestion. The evaluation of probabilistic outputs will be a good demonstration for the GPEP. We have added the rank histogram and relevant analyses for precipitation, Tmean and Trange in Section 4.2.

3) The repository is somewhat minimal. Please consider including some example scripts, possibly in a Jupyter Notebook. Since the paper is essentially a presentation of new software, the repository could have some more features to introduce the software to new users.

Response: Yes, we have added a Jupyter Notebook that illustrates the steps to download, execute, and visualize the test cases. This notebook is designed to be user-friendly and is complemented by thorough explanations. Additionally, it provides pointers to more in-depth documentation when required. We also note that the conversion of GMET to GPEP represented a substantial amount of work that is documented by this paper, and the development of extended user support will naturally

be expected to grow as applications are undertaken. Over years of the existence and publications on GMET, user cases were only first introduced to the repository with GMET v2.0. GPEP has benefited from including some of those as a starting point.

MINOR COMMENTS

The text is clear and well-written. However, the figures require some more attention.

Fig. 1: Please make clear in the figure caption what LWR1, LWR2 and RF are. Also, in the main text, discuss why LWR2 is so much slower than LWR1.

Response: We have added explanations in the figure caption. The reason why LWR2 is slower than LWR1 is probably caused by factors such as the complexity and overhead of sklearn and the implementation difference (LWR1 is translated from Fortran codes using LU decomposition). We will investigate more in the future when optimizing the speed of GPEP. More discussions have been added in the main text.

Fig. 2: Please make sure to show axis lables and physical units in all figures.

Response: Done.

Fig. 3: Please make sure to show axis lables and physical units in all figures. The axis numbers on the x-axis are unreadable. Also, please make the color range of (c) and (d) the same.

Response: Done.

Fig. 4: Please make sure to show axis lables and physical units in all figures.

Response: Done.

Fig. 5: Please make sure to show axis lables and correct physical units in all figures. The axis numbers on the x-axis are unreadable.

Response: Done.

Fig. 6: It is unclear what is shown here; is this for a specific location, or is at a spatial average for a specific polygon? Please explain in figure caption.

Response: It is the spatial averaging for the latitude/longitude extents in the figure caption. We have added more explanation.

Fig. 7: Please make sure to show axis lables and physical units in all figures.

Response: Done.

Fig. 8: Please make color range of (b) and (c) correspond.

Response: Done.9