Review Report of "P-LSHv2: a multi-decadal global daily evapotranspiration dataset enhanced with explicit soil moisture constraints"

General comments:
This paper provides an improved process-based land surface ET fluxes algorithm integrated with a soil moisture constraint scheme. The parameters are calibrated based on global flux tower observations over various climates and biomes, with uncertainty and sensitivity well quantified. The calibrated model is then used to generate a global daily evapotranspiration dataset, which outperforms its previous version and aligns well with other benchmark products. This new ET dataset will be a valuable reference for global energy budget and water balance studies.

The resubmitted manuscript is well written with high content clarity and comprehensive analysis. The comments from the two reviewers are well addressed, and the modifications in the updated manuscript are proper. Some comments addressed in the discussion, such as the dominant effects between energy vs. moisture constraints in high latitude regions, and the impact of deeper root-zone soil moisture, are interesting and worthy directions for further studies in the future. I recommend that the updated manuscript be accepted for publication.

Specific comments:

1. The type of prior distributions used for the parameters should be mentioned somewhere in the text. It would also be helpful to indicate the prior intervals in Figure 4 to make the comparison between prior and posterior more obvious.