In this paper, the authors quantified and corrected the aggregation bias resulting from spatial heterogeneity in evapotranspiration (ET) estimates in a land evaporation model using the second-order Taylor expansions mathematical framework, an approach published by the authors previously in 2017. The GLEAM land surface model was chosen as its governing equations for calculating ET (Priestley-Taylor method) were amenable to analytical instead of numerical solutions and Switzerland was selected as the study area where high-resolution data (500m) on the ET drivers are available. This work is interesting and has important implications for Earth System Models. It can be accepted after several comments are addressed.

General comments

In Figures 3 and 4, the graph for 1/32 degree seems missing. Moreover, Figures S2 and S3 (two selected days) indicate that the result shown in graph (1/32 degree) is not as good as other coarser resolutions, what is the possible reason for this?

The soil moisture plotted in Figure 1(B), S2(a) and S3(a) stands for the volumetric soil moisture (should be smaller than soil porosity) or soil moisture saturation (i.e. volumetric soil moisture/soil porosity, ranging from 0 and 1)? In addition, because spatial heterogeneity in soil moisture is found as the dominant driver of aggregation bias in ET estimates, perhaps the authors can provide the corresponding spatial distribution graph of soil moisture across different grid scales by averaging the 500m soil moisture in the supporting information.

Specific comments

Lines 58-61, it will be much clearer to the readers if the authors cite separately which literature found ‘increases in average ET’ and which literature reported ‘decreases in grid-cell average ET’.

Line 117, 0.25-degree spatial resolution (i.e. corresponding to what kilometers?).

Line 156 and Line 174, compared equation (6) and (7), the interception term (containing information about precipitation) in equation (7) is gone, why? Especially considering that this interception term is quite important as shown in Figure 1(E) and 1(F) as well as Figures S2(a) and S3(a).

Lines 222-224, how did the authors conduct the “average” algorithm?

Table 1, the two example days showed that variance of soil moisture is the dominant driver of aggregation bias in ET estimates, is this true for all the other days?

Technical corrections

Lines 309, 390, 381, section **5.1** and **5.2** is typo.