Hydrology and Earth System Sciences
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Discussions

Interactive comment on "Uncertainties in calculating precipitation climatology in East Asia" *by* J. Kim and S. K. Park

Anonymous Referee #3

General comments

The manuscript presents the uncertainty in calculating the fundamental climatological characteristics of precipitation over the East Asian region for the 28-year period from 1980 to 2007 using statistical comparisons. The manuscript is well written and concisely presents the characteristics of precipitation in East Asia based on five gridded-raingauge observational precipitation datasets and assimilation data. However, there are not sufficient discussions about the observational datasets and assimilation data, i.e., locational information of observed data (raingauge station), and how to calculate the multi-dataset ensemble mean. Therefore, I recommend publication after considering the following comments.

C3705

Specific comments

1. Page 7768 line 9-17: please, explain what are new methods for scientific findings in this study compared to a recent study of Kim et al. (2015). Is it a kind of case study applying to just different regions? If yes, the authors need to highlight why the study is needed.

2. Page 7769 line 7- 15: More detailed description in the text regarding Table1 is needed. The authors mainly discuss about the comparisons of statistical variables (mean, standard deviation, and linear trend) between the observational data and ensemble mean data as a reference data. Although the ensemble mean used in the study is constructed using an equal weighting, the availability of observed data could influence the mean. Furthermore, I would strongly suggest that the locational information of selected data is provided; for instance, over-plotting the approximate location of the field observation sites for each data. Page 7772 line 19-20: Please, provide distribution of the observation sites to support this sentence.

3. Pages 7769 line 16-19: What is a definition of fine-resolution (0.25x 0.25?) and coarse (2.5 x 2.5?) in this study?

4. Page 7769 line 16-19: Please, clarify what is "the same conclusions" when examined uncertainties of the coarse resolution GPCP data (Adler et al., 2003).

5. Page 7770 line 10-12: Please, explain how to calculate the reference data (the multi-dataset ensemble mean). Before the comparison of five gridded precipitation datasets using Taylor diagram, the authors need to provide clearly how to grid observed data used in the current study.

6. Page 7772 line 14-16 and line 24-25, and Page 7773 line 1-2 : Is SNR 5 a critical value to determine uncertainty? Please, explain more and provide some references.

6. Page 7773 line 25-26: To draw a meaningful conclusion in trend analysis, authors need to show statistically significant trends over the regions before discussing uncer-

tainty of the trends.

7. Page 7781: Please, modify confusing color bar and different scales of each variable in Figure 1. Particularly for Fig.1c and 1f the displayed color bars are difficult to distinguish between positive and negative trends (e.g., -0.003 to 0.000 in Fig.1c, 0 to 0.0015 in Fig.1f). In order to compare the figures properly, the range of color bars should be synchronized.

Technical corrections

Page 7769 line 22: please replace "properties" with "property".

Page 7774 line 5: you may want to replace "liner" with " linear".

Page 7774 line 27: you may want to change "rage" to "range".

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