Title: Bias correction of satellite rainfall estimation using a radar-gauge product
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General comments:

This manuscript intends to demonstrate the skills of the bias of the satellite rainfall estimation using a radar-gauge product. This reviewer does not have the knowledge of the ensembles of bias fields and it is hard the follow the discussion of section 3, especially the mathematical expressions. While this reviewer favors of using radar-gauge product to correct the satellite rainfall estimation, the rainfall estimations by employing geostationary satellites is phasing out as more and more polar orbiting satellite based microwave sensors are becoming available. The authors clearly stated the advantage of geostationary satellites with higher spatial and temporal resolution. At the same time, this reviewer considers that the polar orbiting satellites will provide more accurate rainfall estimation than the geostationary satellites within the next decade, particularly after the launch of NASA Global Precipitation Measurement mission core and constellation satellites. Even in the presence numerous polar orbiting satellites, the rainfall estimate by microwave sensors has large error bars over land and coast. Therefore, radar-gauge products can be vital to correct the microwave based rainfall estimate. Perhaps, one can transfer the method of ensembles of bias fields to the microwave rain estimate.

This reviewer thinks that the authors should discuss the microwave sensor based rain estimate. Overall, the study seems to be original and the practical significance is rated good assuming that the methodology can be applicable to the microwave sensor based precipitation estimate. Since this reviewer cannot follow the methodology section in detail, there will no comment on the technicality of the study and therefore there is no recommendation for acceptance or rejection of the manuscript. However, the following specific comments intend to improve the presentation of the study.

Specific comments:

1)A map of the study area can be useful for section 2.

2) What is the justification of rain/no-rain threshold of 0.1 mm h^{-1}? Any reference?

3) Third sentence under section 3.1 (This is under ……) is too long.

4) On page 8925, the range parameter should have units of “km”.

5) On page 8926, 3rd line, “The model is relatively insensitive for a range value of 4 to 7 km”. The figure does not show that.

6) No reference should be given in the conclusions.

7) Please plot figure 4 in long-log space.

8) The figures (5-8) are difficult to follow unless it will be printed in color.