We would like to thank the reviewer for the comments and suggestions, which have helped us to improve this paper significantly. Our detailed responses are provided point by point below.

Major comments:

The authors only compared the basin-averaged precipitation, and then the modeled discharges (with TOPMODEL and WEB-DHM) in the basin. Since the spatial patterns of precipitation may also affect the modeled discharges (with semidistributed/distributed hydrological models), I suggest you also investigate how the spatial distributions of different precipitation data (after downscaling to 300 m grids) have affected the modeled discharges.

Response:

Thanks for the suggestion. Discussion has been added in section 5 in the revised paper as below.

‘The spatial distribution of different precipitation data is not considered in this study. The study region is a small river basin, as shown in Fig. 1, there are only 11 grids inside the basin boundary for the precipitation products with a spatial resolution of 0.25 degree. Within a grid of 0.25 degree, there are no differences in precipitation amount between the 300 m × 300 m grids used in hydrological models, and differences exist at the level of 0.25 degree grids only. Sapriza-Azuri et al. (2015) suggested that the spatial variability of precipitation has little influence on rapidly responding river discharges; this study is the case because the flow transport time from the most upper part of the basin to the downstream discharge gauge is 6 hours, which is shorter than the daily and monthly time steps of discharges investigated. Therefore, the spatial distributions of precipitation products with a resolution of 0.25 degree in the relatively small river basin have little influence on the simulated discharges. However, the assumption of uniform distribution can be regarded as another uncertainty source against spatial variability, and its influence can be assessed using the proposed uncertainty

quantification framework. This will allow us to compare the relative contributions of the assumption to those from other sources such as hydrological models, which will be investigated using a much larger river basin in the future work.'

In the conclusions section, more explanations have been added:

'It should be noted that this finding should be further tested with more river basins, in particular large river basins accounting for spatial variability in precipitation products.'

Minor comments: Page 9338, line 5: change "usually-neglected area" to small river basin.

Response:

Thanks for the suggestion. Changes have been made accordingly in the revised paper.

Page 9339, line 21: please confirm that if your reference of APHRODITE data is appropriate. You may add another reference by Dr. Yatagai.

Response:

Thanks for the suggestion. Change has been made accordingly.

Page 9347, line 14: FAO should be "Food and Agriculture Organization".

Response:

Thanks for the suggestion. Changes have been made accordingly in the revised paper.

Page 9362, lines 9-17: I guess that the spatial distributions of different precipitation products may contribute to the uncertainty in discharge simulations. Therefore, it is better to compare the observed precipitation with each precipitation product in their spatial patterns within the basin.

Response:

Thanks for the suggestion.

As explained above, the spatial distributions of precipitation products with a big resolution in the relatively small case study river basin have little influence on the daily and monthly discharges simulated.

Page 9362, lines 18-24: it is dangerous to draw such a conclusion. You may re-write the conclusion after checking the accuracy of different precipitation products in their spatial distributions, through comparing to gauge observations.

Response:

Thanks for the suggestion.

As explained above, the spatial distributions of precipitation products with very big grids in such a small river basin have little influence on the simulated discharges. Discussion has been added in section 5 in the revised paper, and this conclusion has been re-written as below:

'Fifth, discharge simulation depends on a good coalition of a hydrological model and a precipitation product, and a better precipitation product does not necessarily guarantee a better discharge simulation. This suggests that, although the satellite-based precipitation products are not as accurate as the gauge-based product, they could have better performance in discharge simulations when appropriately combined with hydrological models. It should be noted that this finding should be further tested with more river basins, in particular large river basins accounting for spatial variability in precipitation products.'

Figure 1: the unit of "m" should be given for DEM legend.

Response:

Thanks for the suggestion. Change has been made accordingly.

Figure 4: Please explain ANOVA in the figure caption and also in the body text.

Response:

Thanks for the suggestion.

The caption has been changed to ‘Fig. 2 Diagrammatic flowchart of the proposed framework for quantification of uncertainty contributions to ensemble discharges simulated using precipitation products on the basis of the analysis of variance (ANOVA) approach.’

In the body text, the following sentence has also been added in the first paragraph in section 2.5.

‘(d) quantification of individual and interactive contributions using the analysis of variance (ANOVA) approach including contributions from precipitation products, hydrological models and interactions between models and products.’

Figures 6-9: it is better to mention that the values in comparisons are basin-averaged ones.

Response:

Thanks for the suggestion. Changes have been made accordingly.

Figure 11: The caption should be "False alarm ratio, probability of detection, and critical success index for the six precipitation products."

Response:

Thanks for the suggestion. Changes have been made accordingly.

Figure 17: please indicate (a) and (b) in your figure caption.

Response:

Thanks for the suggestion. Changes have been made accordingly.

Reference:

Sapriza-Azuri, G., Jódar, J., Navarro, V., Slooten, L.J., Carrera, J., Gupta, H.V., (2015). Impacts of rainfall spatial variability on hydrogeological response. *Water Resources Research*, 51(2): 1300-1314. DOI:10.1002/2014wr016168