

Interactive comment on “Rainfall estimation over the Wadi Dhuliel arid catchment, Jordan from GSMaP_MVK+” by E. Abushandi and B. Merkel

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We are very grateful to Prof. Hussein Al-Rimmawi from Birzeit University for his contribution and helpful comments on our manuscript. We would like to take this opportunity to answer his questions and explain our point of view:

1- The study area needs to be drawn within the context of Jordan and only not be restricted on Wadi Dhuliel (fig. 3).

Answer:

Figure no. 3 will be modified to draw the study area within Jordan.

2- Some references are not complete, such as such as (Who) in page 1666 line 23,

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which needs the year of publication, and FAW (2005) did not appear in references list.

Answer:

All references will be carefully checked .

3- There are too many tables and figures. They are confusing and they may be reduced without harming the quality of paper. In addition the quality of figures is not adequate and needs to be clarified specially the legends and names positioning.

Answer:

The first two figures will be removed and added as a text, figure no. 4 and 5 will be combined in a single Climograph. Table 5 will be moved to appendix section. The figures quality will be improved before publication.

4- On page 1676, the authors stated that Spearman correlations are significant but in fact they are not.

Answer:

Unfortunately, the correlation coefficients were mistyped in the present manuscript. All Spearman's correlation coefficients and P values will be corrected as follows:

'The heavy storm events correlation coefficient was 0.75 ($P = 0.084$), while for light and moderate storm events rho was 0.62 (two tailed $P = 0.008$) and 0.66 (two tailed $P = 0.071$), respectively.'

5- The authors did not address the possibility of the impact of global warming on variability of rainfall.

Answer:

As I experienced during the international conference on food security and climate change in dry areas/ Amman, as well as, from a number of studies, Jordan as any other neighbouring countries is facing climate change. The clear evidence of observed

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climate change in Jordan is the rising of temperature gradients. However, studying the impact of climate change on rainfall variability requires long period of meteorological data. Although the GSMaP_MVK+ dataset has a short period, we do acknowledge that this particular issue should be addressed.

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