Nat. Hazards Earth Syst. Sci. Discuss.,
https://doi.org/10.5194/nhess-2018-402-AC2, 2019

Natural Hazards and Earth System Sciences
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Discussions

Interactive comment on "Multicriterion assessment framework of flood events simulated with the vertically mixed runoff model in semiarid catchments in the middle Yellow River" *by* Dayang Li et al.

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Received and published: 10 April 2019

Answer to RC #2

I think you performed a lot work whose results deserve to be published. The topic addressed in your manuscript is interesting and I think that not only statistical hydrologists will benefit from its publication, either from the decision-makers point of view as well as from the perspective of semiarid catchments. However, I noticed several instances in your manuscript that force me not to accept it for publication in its current state. First,

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Discussion paper

I would like to emphasize that all my detailed comments are included in the attached PDF file. Please, kindly see this attached file at the same scale, so you could find the places which my comments point to properly. The paper is well structured, but a large number of style corrections is required.

Answer: We thank the reviewer for the positive comments on our manuscript. Detailed style corrections are attached in the nhess-2018-402-supplement.pdf.

General Comments:

The discussion of the results is not clear and, in my opinion, could be extended due to the huge effort made in the study. The authors are encouraged to extend the discussion of the results obtained by the explanation of possible causes of differences among hydrological models.

Answer: Thank you for these constructive suggestions. We have added more explanation for clarity. Details are shown in the attached nhess-2018-402-supplement.pdf.

The initial condition is essential for this type of simulations. Thus, the authors should explain better this section.

Answer: Thank you for this good suggestion. We have written the paragraph and added some detailed information as follows:

"The initial condition has important effects in modeling flood events. The VMM model was run continuously from 1983 to 2009 for each catchment. Two initial values are the initial tension water storage (W0) and the initial free water storage (S0) should be determined. Both of them represent the moisture content of the soil and were assumed to be zero due to the dry conditions at 00:00:00 on January 1, 1983. Rainfall data were available only at an hourly time step over the periods of flood events, and for other periods, they were available at a daily time step. Hence, the time step of simulation was daily between flood events and hourly within flood events."

Regarding the references shown in the manuscript, some are not listed in the reference

list, and also there are some errors in the reference list. Please, check the standards of the journal and correct them.

Answer: We have checked all references and corrected the errors.

I strongly recommend to undertake some check of the language (e.g. by some professional service offered directly by Springer on you websites). Without a doubt, there are some places in the text that are hardly understandable due to the language.

Answer: Thank you for this good suggestion. The manuscript has been edited for language by a professional editing service. All amendments are shown with track changes in the attached nhess-2018-402-supplement.pdf.

I believe my comments will help you improve your MS, which will lead to is final publication.

Answer: Thank you. Your comments greatly helped us improve the manuscript, which we hope is now suitable for publication.

Please also note the supplement to this comment:
https://www.nat-hazards-earth-syst-sci-discuss.net/nhess-2018-402/nhess-2018-402-AC2-supplement.pdf

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