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Hydrology and Earth System Sciences
Discussions
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Interactive comment on "A pre-calibration approach to select optimum inputs for hydrological models in data-scarce regions" *by* E. Tarawneh et al.

Anonymous Referee #1

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1. General comments

The authors addressed a major issue of dealing with scarce data having different sources as well temporal and spatial scales for hydrological modelling purposes.

The methodology was very clear and the obtained results are of high importance particularly for hydrologists and soil and water conservation specialists working in dry environments.

The paper was very well written and illustrated.

The bibliography is complete and relatively up to dated.

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Discussion paper

2. Specific comments

âĂć It is recommended to further justify the choose of the SWAT model (P4) with case applications particularly in similar environments, âĂć For the land use maps (p5): o Did you consider that there were no major changes during the simulation period ? o A part from the Wala dam, are there other hydraulic structures (soil and water conservation, water harvesting, etc.) in the watershed. If yes, how did you represent them in the model ? âĂć Provide a summary of the used soil characteristics for the two soil maps (p5-6) and indicate properly the measured and the estimated ones âĂć Using average monthly discharge data (p7) in a dry environment needs to be well explained and justified. In fact, in these areas, flood events occur generally in most of the cases in very short periods (some hours). Therefore, even using daily averages may cause some problems with model calibration and validation !. âĂć What do you mean by "Howard Humphreys and Partners (1992) identify a strong log linear relationship ..... after Tarawneh (2007)" ? (p7). May I understand that the sediment yield was estimated based on this relationship ?. âĂć In Figures 3 (P24) and 4 (P25): are all these classes exist in the study watershed ?

3. Technical corrections

* P5 L10: Replace 'Luzio et al., 2002' by 'Di Luzio et al., 2002' (it is the same author) * P5 L26: Check if it is Leon, 2007 or Leon, 2013 * P6 L23: Replace 'by (Neithsch et al., 2001)' by 'by Neithsch et al. (2001)' * P7 L10: Replace 'see for exampleZhang' by 'see for example Zhang' * Ageena et al (2014): not found in the text * Ageena et al. (2013): not found in the text * P16 L36: Check if the reference of Montheith is complete ? * P17 L22: Check if you need to type twice 2009 * P17 L34: Check if you need to type twice 2008b * P27: Correct 2000-200 !! * Figure 9 (P30): Check if the scenarios 13, 18, 5 and 3 are included in the graphs !

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