

Interactive comment on “Assessing water resources in China using PRECIS projections and VIC model” by G. Q. Wang et al.

Anonymous Referee #3

Received and published: 25 September 2011

The manuscript is within the scope of HESS and of interest for a broad audience. The authors research the changes in rainfall and runoff using the PRECIS projections and the VIC model, respectively, in 125 gauged catchments in China. However, the current form of the manuscript should be revised in order to be acceptable for publication.

The authors are encouraged to add the mathematical background of VIC model, so that it will be fully described and defined. In that way, it will be clear how the seven hydrological parameters have been calibrated and validated. Furthermore, it should be clarified how these parameters have been calculated in the ungauged catchments.

What is more, it would be useful to present the results of the hydrological parameters through boxplots.

Despite the fact that the authors state in their conclusions that the projected runoff are uncertain, more emphasis should be given on this aspect, which is my major concern about this manuscript. There are many publications claiming that climate models have not been designed as a tool for water resources management (e.g. Kiem and Verdon - Kidd, 2011), consequently they should not be used for the assessment of water resources. Furthermore, it is unrealistic to expect the required level of accuracy for adaptation-type analysis, since they are not ready for “prime time” in water resources applications (Kundzewicz and Stakhiv, 2010). From the points mentioned above, I believe that the authors should stress on the uncertainty of climate models, which is increased in smaller scales and especially when the rainfall patterns in a single catchment are studied (Blöschl and Montanari, 2010).

Technical corrections

There are many typing errors through the whole manuscript and the English language should be replenished. The references section should, also, be revised, since there are some mistakes. I will give some characteristic examples.

p7295, l29 – p7296, l1: The whole sentence should be restructured.

p7296, l7: Replace “founded” with “found”. At the same line, it is written “China et al.” which obviously does not make sense.

p7296, l4: Replace “results” with “result”.

p7296, l8: Remove “(Hans, 2006)”.

p7298, l15: Replace “Raw et al.” with “Rawls et al.”

In the reference section Hansen et al., 2000 is missing.

You should correct the reference to Jones et al., 2005, as you have confused the surnames with the authors’ first names in both the reference section and at p7295, l26-29. Additionally, you do not have to refer to them twice in the same sentence.

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You should correct the reference to Loukas et al., 1996, as you have confused the surnames with the authors' first names in both the reference section and at p7295, l23.

Additional references

Blöschl, G., and A. Montanari (2010), Climate change impacts - Throwing the dice? , Hydrol. Processes, 24, 374–381, doi:10.1002/hyp.7574.

Kiem, A. S., and D. C. Verdon - Kidd (2011), Steps toward “useful” hydroclimatic scenarios for water resource management in the Murray - Darling Basin, Water Resour. Res., 47, W00G06, doi:10.1029/2010WR009803.

Kundzewicz, Z. W. & Stakhiv, E. Z. (2010) Are climate models “ready for prime time” in water resources management applications, or is more research needed? Editorial. Hydrol. Sci. J. 55(7), 1085–1089.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 8, 7293, 2011.

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