

Interactive comment on “Baseflow simulation of SWAT model in an inland river basin in Tianshan Mountains, Northwest China” by Y. Luo et al.

Anonymous Referee #2

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The paper is devoted to baseflow simulation in the Manas River, Tianshan Mountains, Northwest China, by using the improved SWAT with one and two reservoirs for modeling the deep aquifers. The approach is described clearly, and the results are so convincing. But the results interpretation seems “too simple” from recent point of view. After experience of few decades of using the flow simulation models in hydrology, after, say, the generalization of Beven (Beven K.J. Rainfall-runoff modelling. The Primer. Chichester : Ltd. John Wiley & Sons., 2000), we know that calibration of every complicated mathematical construction could provide flow simulation seem as “good results”. But the calibration result only couldn’t be a reliable proof of the model adequacy and conclusions correctness.

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Say, it is very natural and expected that two-reservoir approach in paper discussed provide the better results than one-reservoir approach – it is rather mathematical effect. What it means from point of view of reality, what results are more realistic – from one-reservoir or two-reservoir approach or from digital filtering? The automated digital filter is also king of a model. At least it asking for more detailed consideration in the paper and clear author hypothesis.

Some technical errors occur in manuscript that asking for careful author’s edition. The manuscript can be accepted for publication after a minor revision.

The following corrections/amendments are needed:

1. It is recommended to consider the modeling results in compare with real composition and properties of aquifers in the basin investigated more detailed and to formulate clearly the author position concerning to “reality” of different simulating results.
2. Table 1 mentioned on p. 10404, l. 12 (Physical features) does not exist. Please add it.
3. In spite of my own poor English (I’m sorry) I follow the Anonymous Referee #1 - language should be checked by a native speaker. Line 13, page 10411 - a capital letter in the start of sentence.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 8, 10397, 2011.

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