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Hydrology and Earth System Sciences
Discussions

Interactive comment on "Improving flood forecasting capability of physically based distributed hydrological model by parameter optimization" *by* Y. Chen et al.

Anonymous Referee #2

Received and published: 11 December 2015

This paper improves our ability for parameter optimization in the physically-based distributed hydrological modelling efforts. Therefore, to me, the paper worth publishing in the journal. However, there are a number of comments to be responded before it is published. Also a revision will be needed for the style and stcructure of the paper; e.g., a precisely written English and text without typographical errors. There are a lot of mistyped words that should be corrected. There is a problem with using abbreviations. The authors should avoid using abbreviations unnecessarily. However, once decided, they must be used properly and continuously. Also avoid using active voices such as 'We assume (Page 10610 Line 6), use 'It is assumed' instead. There are long sentences separated by commas; better these sentences are divided.

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Although the comments are high in number they are all doable, thus the revision can be considered minor. Such revision will be helpful in bringing the paper to the publishable level. My comments are listed as follows:

1. Abstract: Abbreviate 'Physically-based distributed hydrological models' as PBDHMs here.

2. Abstract: Extend PSO

3. Page 10606 Line 5: Give reference to WEHY model of Kavvas et al. (2004, 2006).

References are as follows:

Kavvas, M., Chen, Z., Dogrul, C., Yoon, J., Ohara, N., Liang, L., Aksoy, H., Anderson, M., Yoshitani, J., Fukami, K., and Matsuura, T. (2004). "Watershed Environmental Hydrology (WEHY) Model Based on Upscaled Conservation Equations: Hydrologic Module." J. Hydrol. Eng., 10.1061/(ASCE)1084-0699(2004)9:6(450), 450-464.

Kavvas, M., Yoon, J., Chen, Z., Liang, L., Dogrul, E., Ohara, N., Aksoy, H., Anderson, M., Reuter, J., and Hackley, S. (2006). "Watershed Environmental Hydrology Model: Environmental Module and Its Application to a California Watershed." J. Hydrol. Eng., 10.1061/(ASCE)1084-0699(2006)11:3(261), 261-272.

4. Page 10608 Line 3: What does SCE stand for?

5. Page 10608 Lines 8-9: WET Spa or WET Sps?

6. From Page 10613 Lines 16 to Page 10614 Line 4: Section 2.5.1 PSO: Give references properly; also no need to mention that much detail. Long sentences are there.

7. Page 10616 Lines 14-17: The sentence needs revision.

8. From Page 10618 Line 22 to Page 10619 Line 12: Better to present all these values in a table / tables.

9. From Page 10618 Line 25 to Page 10619: 10 soil types are mentioned here. As a

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hydrologist, I am not familiar with the soil type and I do not understand how each will affect on the model.

10. Page 10627 Lines 16-19: Bullets 4 and 5 are results not Conclusions. Simply delete.

11. Tables 3 and 4 can be combined as both are almost the same.

12. In Fig 6, it is expected to have a figure corresponding to the upper panel as in Fig 5a.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 12, 10603, 2015.

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