Hydrology and Earth System Sciences Discussions

Interactive comment on "Coupling Green-Ampt infiltration method and two-dimensional kinematic wave theory for flood forecast in semi-arid catchment" *by* L.-L. Wang et al.

Anonymous Referee #3

Received and published: 12 October 2011

I am afraid I must reject the submission, largely on the basis of very poor writing and organization of the study. In addition to many grammatical errors (too many for me to catch and track), the presentation of the material is not very organized and it was extremely hard to understand the objectives, approach, results and importance. Most statements were awkwardly written with poor grammar and were often run-on, composite statements. What I could make of the science needs improvement as well, most of which is described below.

In addition to a complete re-write, I found the following issues need to be addressed.

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper

1)The Shanbei model is considered to be the standard with which the two distributed models are evaluated. However there is absolutely no discussion of what the Shanbei model is and how well it performs in general, and in the study catchment

2) Better terminology needs to be used for the "sink filling model" and "Green-Ampt physical method", etc.

3) the Sink filling model needs to be described better. Since this overcomes the limitation of the kinematic wave model with depression storage, its very important to understand. Are the sinks filled by raising the elevation. Or is water "poured" into a sink and somehow removed from the calculation of discharge? Or both??

4)I find the "results" (actually named "application of models" section very lacking. They present discuss Fig 6 and discus is briefly, but also present Fig 7 with no discussion. Why present something and not describe how it informs their conclusions?

5) Most of the figures need much improvement. Most of them lack any description (including units of measure) of what is presented. Fig2: What are tne numbers and arrows, triangles, yellow areas, etc? Fig3: what are the numbers and units? Is this a map view, etc. Fig 4: what are i,j,x,y,w, dotted lines, etc. Fig5: grassland and water are not distinct colors. Fig6: Why is there no Shanbei model?

6) Fig 7 appears exactly the same as Fig6??? Why is Fig7 not discussed? Why is the Shanbei model not presented?

7) More discussion needs to be presented about why they think their model is superior to other models. They say it is, but it only really outperforms other models for two factors (peak error and peak time). Why is this? What is it about the catchment processes that make this model (or any model) better?

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 8, 8035, 2011.