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Hydrology and Earth System Sciences Discussions

Interactive comment on "How crucial is it to account for the Antecedent Moisture Conditions in flood forecasting? Comparison of event-based and continuous approaches on 178 catchments" *by* L. Berthet et al.

Anonymous Referee #1

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The manuscript deals with a topic that has potential interest for flood modellers and people working on Forecast Services. Comparative analysis of the performance of modelling strategies has been addressed by numerous papers,regarding this topic the main contribution of the the manuscript is that the results provided are based on the information coming from a great number of watersheds ensuring, thus, their robustness.

The main conclusion drawn by authors is that event-based models will perform reasonably well for flood forecast if proper initialization strategies and updating techniques are adopted. This conclusion can be accepted as a thumb rule in applying the tested

model for flood forecast purpose, but which extent this general conclusion depends on the model used is not convincingly addressed in the discussion of the results. Furthermore the combined effect of assimilation techniques and initialization procedure on model's performance would require more results and a deeper discussion (only one example showing a unspecified initialization procedure, Â£poor-man's initialization?, is presented).

In the introduction the authors mention that event-based models are preferred because of some kind of "cultural reasons" of the modellers. These are not the only reasons, event-based models are preferred tools some water resources related topics such as flush-floods or sediment transport associated to torrential rainfall in Mediterranean areas

Results about the effect of time to peak are poorly described in the paper, a table providing the summary statistics and conclusions drawn from it, would improve the manuscript.

Other minor comments are as follow:

A better graphical information of the structure of the model (Figure 2) is needed. Please check the reference of Moore et al., it is quoted with different published date in the text and the reference section.

Finally, apart from some misspelling and typing errors, I have some doubts on the correctness of some expressions. Therefore, I would suggest that English language is carefully reviewed.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 6, 1707, 2009.