

Interactive comment on “Application of a model-based rainfall-runoff database as efficient tool for flood risk management” by L. Brocca et al.

Anonymous Referee #1

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Review of the paper 'Application of a model-based rainfall-runoff database as efficient tool for flood risk management'

The paper by L. Brocca et al. proposes a modelling framework that uses a RR model coupled to a rainfall generator within a support system for rainfall-runoff scenario building, testing and assessment in the context of flood flows.

The paper follows an nice idea and tries to answer an interesting research question: 'how simple can we be without damaging the quality of the results and hence the decision-making process?'

They tested the system over two basins in Italy. The paper is well written and well structured. It reads very well.

C764

I am very much in favor of such a system (building a large 'look-up' database which has been built using data and models but can be very easily interrogated by the end-user/decision-maker to issue high flow/flood warnings, who often have no direct knowledge or linkages to the underlying science of a flood forecasting system.

There is not much I am concerned about in this paper; I believe the framework presented is easily applicable to a real decision-making example and should receive a lot of positive feedback.

I have just three rather minor comments:

- I assume the RR model has been tested in previous studies? Can you give details on past study performances of the model (section 2.3)?

- Why are the performance indices values lower in the calibration period than in the validation period for S. Lucia (Table 1)? I would expect the opposite. I feel this should be explained in section 4.2

- Table 2 shows the number of scenario simulations run for all hydro-meteo. variables for the presented test case. Do the authors know the minimum number of runs required in order to still yield the same performances or how many runs are required before the use of a different RR model would change the results? I understand the latter part of the question is more difficult to comment on but the former (min. number of runs required?) should be fairly straightforward.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 10, 2089, 2013.

C765