

Interactive comment on “Correcting the radar rainfall forcing of a hydrological model with data assimilation: application to flood forecasting in the Lez Catchment in Southern France” by E. Harader et al.

Anonymous Referee #3

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Comments on "Correcting the radar rainfall forcing of a hydrological model with data assimilation: application to flood forecasting in the Lez Catchment in Southern France" by Harader et al.

General Comments. This manuscript investigates the data assimilation to a hydrological model with corrected radar rainfall. The subject matter is relevant to scope of HESS, especially for its special issue on "Latest advances and developments in data assimilation for operational hydrologic forecasting and water resources management".

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I recommended an acceptance after a moderate (detailed comments are given below).

Specific Concerns/Comments

1. First of all, I think there is a little logical issue with its structure. I think the authors want to show the advantages of DA and rainfall correction for flooding forecasting. If it is the case, a table (or figure) comparison on how they can improve the model result would be better. For example, one row shows the model result with raw radar rainfall, second row shows the result with corrected rainfall with observations, and the third row show it with DA.
2. The authors have adopted a simplified Kalman Filter in this study. My question is that why this method has been chosen. Does it have advantages over other DA methods? If so, what they are. A comparison with modelled results from other DA methods would be good.
3. Introduction section. It is too long and should be shortened.
4. Hydrological model. This section should be significantly shortened. I think the model is not developed by authors themselves. One or two key formulas plus some key references should be enough.
5. Date assimilation methods. Is this method developed or modified by authors themselves? If they simply use existing methods in the literature, this section can be significantly condensed and the original references should be cited. If it is a new method developed by authors, it should be clearly explained.
6. Table 3. What does the star (*) mean?
7. Figures 1 and 2 should be combined.
8. I do not think Figures 3-7 are necessary, because they are not developed by authors themselves. They are simply copied from the model manual.

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