

***Interactive comment on* “The benefit of high-resolution operational weather forecasts for flash flood warning” by J. Younis et al.**

Anonymous Referee #3

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Given the specific space-time scales of flash flood events, flash flood forecasting is characterised by short lead time, which implies both the integration of meteorological and hydrologic forecast. This feature points out to the larger uncertainty associated with this kind of events. In this paper, the authors show the benefit of high resolution operational weather forecasts for flash flood warning. The authors apply a model consistent approach for the determination of discharge threshold exceedances and results indicate that high resolution operational weather forecasting combined with a rainfall-runoff model could be useful to determine flash floods more than 24 hours in advance. Overall, the paper is significant and interesting and should be published in HESS.

Figure 6: The authors could show how vary the forecast performances (in term of Hits, False alarm and Missed alarms) for different values of model efficiency (such as Nash-

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Sutcliffe efficiency). This may be done for the basins reported in figure 6. There may exist a lower limit concerning the "uncalibration" of the rainfall-runoff model, for which the proposed methodology is not applicable.

351:28-29. I think that improvements in forecasting performances could be obtained by the individuation of a methodology to transfer model parameters from gauged to ungauged basins. It is not clear how the parameters were set across the different basins.

354:26-27. I think that the use of a daily discharge threshold may lead to a high number of false alarms particularly in the case of basins with area lower than 50-100km² which are the most prone to flash flood. I think that further studies should be planned in order to apply the same methodology to another case study for which hourly discharge thresholds can be extracted.

359:26. It would be better to extend the 6 months forecasting assessment to at least one year.

360:23-26. I think that also the number of false alarms should be limited. Even if they can be identify they will be "false alarms" for the vast number of people warned. The credibility of a warning system may be lost due to excessive false alarms.

Technical Comments: Please simply go through the article and pay particular attention to the grammar. There are several errors that need to be adjusted before this paper can be considered publication worthy.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 5, 345, 2008.

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