Interactive comment on “Uncertainty analysis of hydrological ensemble forecasts in a distributed model utilising short-range rainfall prediction” by I. D. Cluckie et al.

Anonymous Referee #2

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The authors address an important issue: the in general underestimation of precipitation in ensemble weather prediction systems. The authors come with a possible way to address the issue.

It is unfortunate that a relatively very small catchment has been chosen to address this issue. The typical resolution of ensemble systems is much coarser- in this case the ECMWF EPS has been used with a spatial resolution of roughly 80x80 km. Thus already 1 pixel covering 6400 km2 - as compared to the catchment size of 135 km2. I am not sure if with all sorts of downscaling techniques you’ll get somewhere, since the
origin of the data is still the EPS resolution

The authors do state that the methodology they propose and discuss is not suitable in a forecasting mode. This is in my opinion exactly the added value application domain of ensemble prediction: possible expected weather patterns. So it could be argued, if the solution proposed in this publication has useful practical applications.

Given the above, it is quite obvious that a gauge-calibrated hydrological model will underpredict discharge using weather ensembles as they are produced, and indeed some sort of procedure is needed. Like discussed above, I am not sure if the solution suggested here is a practical way forward.

Ideally, EPS-based discharge forecasts should be compared to and run with a calibrated hydrological model forced by data of the similar nature, so some sort of EPS climatology.

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