

Thank you once again for very helpful comments! Your comments in normal font, our replies in bold font.

1) Probably, the focus of this paper is more in hydrologic engineering than hydrologic science. We do not propose a new scientific hypothesis or method. We combine different datasets and methods into an operational forecasting system for poorly gauged basins. There is some innovative value in doing this, as recognized, for instance, by reviewer 2. We agree that the scientific discussion lacks detail in places and will address that in the revision, following your detailed comments below.

If the focus (hypothesis/experimental setup etc) will not change the paper is not suitable for publication in HESS, as the study presents only an incremental scientific contribution. Other journals might be more appropriate (e.g. J of Hydrologic Engineering) in that case.

We will extend and enhance the scientific discussion following all review comments and include a more detailed comparison of deterministic and probabilistic forecasts based on CRPS and other indicators. We will await editor feedback regarding suitability of the paper for HESS. One of the reasons for choosing HESS is its open access policy, which is in line with TIGER-NET philosophy and essential for our African target audience.

2) The data was downloaded from http://nomads.ncdc.noaa.gov/data.php#hires_weather_datasets The most recent data is online on the server, the older data is archived offline but can be ordered for FTP download. We hope this answers the question, we could provide detailed technical descriptions of what exactly was done on the web interface but this would probably be beyond the scope of this discussion forum.

I will check this, do the authors know if the data set is homogeneous (regarding model changes etc)

The GFS system is continuously updated, see <http://www.emc.ncep.noaa.gov/GFS/docs/GFS.performance.review.2013.pdf> To assess possible changes in the forecasted precipitation, we benchmarked GFS precipitation against FEWS-RFE precipitation (fig 2). This analysis was also performed for individual sub-catchments of the model (not reported in the paper). From these results, it does not look like there is a consistent, long-term change in GFS forecasted precipitation. It is clear that this will have to be confirmed at regular intervals during operational application of the system and may require re-calibration of the hydrological model at some stage. This discussion will be added to the revised version of the paper.

3) We report the persistence index (cf table 4) in order to compare the performance of our system to the persistence reference (i.e. last available observation). We do not see how to compute CRPS of the persistence reference, as this would require an estimate of the standard deviation of the persistence which we do not have. Additional input as to how to understand/address this comment would be very helpful.

See

http://www.eumetcal.org/resources/ukmeteocal/verification/www/english/msg/ver_prob_forec/uos3b/uos3b_ko1.htm

For hydrologic examples see

A comparison between ensemble and deterministic hydrological forecasts in an operational context Adv. Geosci., 29, 85–94, 2011 www.adv-geosci.net/29/85/2011/ doi:10.5194/adgeo-29-85-2011 and

The use of MOGREPS ensemble rainfall forecasts in operational flood forecasting systems across England and Wales Adv. Geosci., 29, 77–84, 2011 www.advgeosci.net/29/77/2011/ doi:10.5194/adgeo-29-77-2011

Thank you very much, this was very helpful! We understand that your suggestion is to treat persistence as a deterministic forecast and then compare CRPS and other indicators between persistence and our probabilistic forecasts. We will do this and report and discuss the results in the revised version of the paper.