

## ***Interactive comment on “Validation of two precipitation data sets for the Rhine River” by C. S. Photiadou et al.***

**Anonymous Referee #1**

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This paper compares two precipitation data sets, referred as CHR08 and E-OBS. The comparison is done by forcing the HBV conceptual hydrological model with the two precipitation data sets and evaluating model performance statistics. The authors show that overall CHR08 provides a better performance than E-OBS.

I understand that it is difficult to compare two potentially uncertain data sets, without knowing where the truth lies. But in my opinion, the way this is done by the authors does not allow to draw any meaningful conclusion. Although I think it is a good idea to use a hydrological model and observed discharge to compare the two data sets, the comparison needs to be as objective as possible. Here, the comparison is not objective because the HBV has been calibrated only using CHR08. In addition, there not seem

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to be a validation period.

A minimum set-up for the paper to be valuable is:

- To split the data series into calibration – validation.
- To calibrate and validate the HBV model using BOTH rainfall products, i.e. CHR08 and E-OBS.

Another limitation of the paper is that the model predictions are given without any uncertainty assessment. This does not allow evaluating if differences of model predictions for different rainfall products are meaningful. I think for a paper that deals with this problem an assessment of uncertainty is compulsory.

The authors could remove all the details that are not relevant for the objective of the paper. For example, all the details on climate models and correction factors given in the introduction. The acknowledgment of the limitations of the study (laming wrong correction factors for poor model performance) at the end of the discussion section is not very appropriate...

There are all other details that need to be corrected, such as wrong units of discharge, which is a flux and is given in  $m^3$ , but I will come back to these when the authors will provide a significantly revised paper.

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