

HESS Editor Response

We thank the editor, Dr Ursino for her work in editing and reviewing our paper.

We assume that the editor's comment: **"Please, address the main remark raised by reviewer #2 concerning the graphical representation of the data."** refers to a point by the Anonymous referee #3 report dated 2nd October (labelled Report #2) which commented:

In this work, projections from two periods (a past one, and a future one), are used. I was expecting that the availability of these two periods would be exploited to assess the impact of the use of CP-RCM data to evaluate the evolution of hydrological indicators. However, it seems not to be the case. Actually, in most figures (except Fig 3 where all data are aggregated, and Figure 10 where we see that the past period is used), results are presented on unknown periods. This poses two issues: the first one, is that we simply don't know exactly what is shown. The second one is that, if the two periods are mixed, it involves that two different distributions of climate variables are mixed, troubling the conclusions we can draw. This issue needs to be tackled.

In our response to the review, we clarified that our study does not consider projections from two-periods (historical and future) in CP4A. We only consider the 'historical' CP4A runs which are statistically consistent with the large-scale climate between 1997-2007 but do not reproduce annual climate (such that in CP4A the rainfall in 2000 is does not reproduce the observed rainfall in 2000 – but that the overall statistics of the CP4A rainfall between 1997-2007 are consistent with observed statistics for the same period). We have strengthened this clarification in the manuscript and have made it clear that "all results discussed refer to the 'historical' CP4A/P25 runs, we do not use the 'future' runs at any point in this study." (Line ~386). Along with this statement we have also added additional clarification statements throughout the methods section. Finally, we have also made it clear in every figure caption that the results refer to the CP4A/P25 historical runs.

For example, the Fig. 4 caption has these lines added:

"Plots cover rainfall recorded/simulated between June 2000 and February 2007, which is the period where CP4A/P25 and IMERG overlap. These 'historical' CP4A/P25 simulations are statistically consistent with the observed climate between March 1997 and February 2007."

Where there is a time-evolving x-axis, the following lines have been added to figure captions (such as Fig. 10):

It is worth noting that while the x-axis covers 1997-2007, the 'historical' CP4A/P25 simulations are only designed to be statistically consistent with the observed climate rainfall between March 1997 and February 2007. They cannot replicate individual rainfall events observed over this period.

We hope the updated manuscript addresses the point raised, if not we are more than happy to provide additional alterations.