

Interactive comment on “Mean and extreme precipitation over European river basins better simulated in a 25km AGCM” by Reinhard Schiemann et al.

Anonymous Referee #1

Received and published: 8 February 2018

Review of: " Mean and extreme precipitation over European river basins better simulated in a 25km AGCM"

By: Schiemann et al. Submitted to: Hydrol. Earth Syst. Sci. Manuscript # HESS-2017-732

Recommendation: Minor revisions

Overview:

The Authors investigate the role of the horizontal resolution in representing mean and extreme precipitation over Europe, through a General Circulation Model, with a special

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focus on the different results over different river basins.

General comments:

1. This manuscript is well written and seems suitable for publication on HESS after a minor revision. 2. I would suggest to add a chapter, at least some sentences, comparing the 25 km GCM results with state of the art RCM results (EURO-CORDEX) in terms of biases. It is not necessary to show maps but a general evaluation based on existent literature is encouraged. 3. Few minor comment follow.

Specific comments:

- Page 2, line 2: “General Circulation Model”, is more appropriate than “Global Climate Model”. - Page 3, line 14: Can you expand a bit on the kind of parameterization used? Is there any difference between different resolutions/versions? - Page 4, line 20: in Figure 1,4,5,6 I would see also the intermediate resolution. Also I suggest to plot the bias in b,c,e,f instead of the absolute value. - Page 6, figure 2: I suggest to reduce the y range to 0.4-1.0. - Page 8, line 3: In order to highlight the catchment basin of the three rivers I suggest to use contours (or also the 3 rivers drawn in red colour) in figure 5a. - Figure 4: not clear the meaning of circles: verify the usage of the “observed maxima” description in figure 4. Also I suggest to uniform the ytick number in all of the subplots. - Figure 7: please add stippling to the model bias. The same for S4 and S6. - Page 15, Discussion: I think that this chapter must also include a discussion relative to chapter 3 and 4 results. - Page 16, line 3: Sentence not true when focusing on the Alps. - Page 20, line 30: I appreciate the “bullets approach” for the Conclusion but this is applied to half of the concluding remarks: the conclusion relative to 5.1 and 5.2 are not listed as bullets. Also part of the bullets is repeated in the last part of the conclusions (page 21).

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2017-732>, 2018.

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