**Hydrology and
Earth System
Sciences**

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Discussions

Interactive comment on "Climate change and sectors of the surface water cycle in CMIP5 projections" *by* P. A. Dirmeyer et al.

Anonymous Referee #1

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General comments

This paper presents a straightforward but interesting and relevant analysis of projected CMIP5 changes in hydrological quantities and their impacts on meteorological, agricultural and hydrological extremes. It timely points not only at changes in the means of these indicators but also in the interannual variability, affecting predictability and resilience often more than mean changes. The authors acknowledge that the direct link between the analysed indicators (10

Specific comments

- 8538L9: remove a "the"

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Interactive Discussion

Discussion Paper

- 8541L11: what does the spatial interpolation to a higher resolution than the native grid imply for the quantification of the modelled extremes? There is a risk of over- or underemphasising extreme precipitation at the grid level

- 8541L21: I can't find such overlapping locations on the map. Can you indicate some areas where this occurs?

- 8543: generally RCP4.5 shows a weaker signal than RCP8.5. Can we deduce from this RCP8.5 in the middle of the century is comparable to RCP4.5 end of century, assuming a high degree of linearity in the reponses?

- 8544L5-7: I suggest to swap the colors of the red and blue tones in fig 4: red pointing at low values, blue at high values. Nice plot!

- 8545L12: was land use change accounted for in the analyses? It was imposed in the CMIP5 runs

- 8547L5-20: I suggest to add a qualitative summary of these factors to table 3

- 8551L20-21: the sentence about amplification is not fully clear to me

- 8552L1: suggest to add "precipitation" after "mean"

- 8552L17: sentence is not correct

- Fig 4: the caption could mention that every symbol represents a single grid point. How about overlapping symbols: is the symbol size small enough?

- Fig 7 11: text on x-axis is unreadable; grey triangle in fig 11 does not show on my hardcopy

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 11, 8537, 2014.