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Earth System Science Data Discussions

Interactive comment on "Future Flows Climate: an ensemble of 1-km climate change projections for hydrological application in Great Britain" *by* C. Prudhomme et al.

Anonymous Referee #1

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Clear and tidy article with little to comment on in terms of technical aspects. Minor comments concerning methodologies, presentation of work and original climate model data.

1. Whilst the 11 member RCM ensemble comprise some representation of parameter uncertainty in HadRM3 it under-samples one of the largest sources of uncertainty, i.e. that of the bounding GCM. It would be useful to the reader if the authors could provide further details on the characteristics of the 11 member ensemble in terms of what uncertainty is represented and what isn't (and a link to relevant web site on UKCP09 would be useful for the reader).

2. Is there an issue that different downscaling methodologies are used to downscale temp and precip independently? Are inter-variable relationship altered, and if so - is this a concern since they are both used in follow on hydrological model applications?

3. Both the quantile mapping and the linear additive transfer function appear to work on a point to point (or cell to point) basis. How does this effect spatial relationships in the new high-res grid?

4. To illustrate the impact of scaling, it would be useful to provide an example of what a transformed (temp/precip) series may look like (e.g. show time series pre/post-transformation).

5. The last sentence of section 5 suggest that the climatology of the downscaled data should be representative of that of the observed data. Could you perhaps give an example that this is true, e.g. provide seasonal rainfall/temp distributions for wet/dry areas.

6. Table 1. I've not seen HadSM3 mentioned in the manuscript text, clarify?

That's all folks

Interactive comment on Earth Syst. Sci. Data Discuss., 5, 475, 2012.