

Interactive comment on “Climate changes of hydrometeorological and hydrological extremes in the Paute basin, Ecuadorean Andes” by D. E. Mora et al.

F Pappenberger (Editor)

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I thank the authors for their rebuttal and the reviewers for their constructive review. In balance I would encourage the authors to completely resubmit this paper and not submit a revision. I believe that the revisions/changes required are substantial and need to be reviewed in the HESSD format.

As justification, I only pick up on a few comments given by the reviewers, please see individual reviewers comments and author responses for more details.

Reviewer 1 for example argue to be “not convinced that it allows for the data analysis

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and inference that the authors claim it does. As a result, I do not think that most of the conclusions are valid, and several of are direct artefacts”. In particular, the reviewer questions the use of delta changes in the observed temperature. The authors promised to address this and indicate that they will modify the Impact factors to partially address this comment. I am looking forward to seeing this, but believe that this is quite a substantial change to the manuscript

Reviewer 2 questions the motivation and ‘faith’ one can have in such results. The discussion about the value of down scaling has been extensively discussed by Maraun (2010) however I think that a full discussion is beyond the scope of this paper, I do encourage the authors to reflect at least some of the criticism by the reviewer in a resubmitted version. Indeed one may come to the conclusion that even downscaled RCMs are not suitable for the applications they are thought for - as listed in the first paragraph of the paper (similar conclusions are drawn e.g. by Buytaert, et al. 2007, Cloke 2013 and many more) - although one may argue that they have never been designed to do so. Reviewer 2 also suggests that the analysis needs to be extended and raises a number of questions on the results. The authors indicated in their response that they will do so.

D. Maraun, et al.: Precipitation Downscaling under climate change. 2010, Recent developments to bridge the gap between dynamical models and the end user, Rev. Geophys. 48, RG3003, DOI: 10.1029/2009RG000314, 201

Cloke, H. L., et al. , 2013, Modelling climate impact on floods with ensemble climate projections. Q.J.R. Meteorol. Soc.. 139: 282–297, doi: 10.1002/qj.1998

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