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Discussions

# *Interactive comment on* "Rainfall and temperature estimation for a data sparse region" *by* R. L. Wilby and D. Yu

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The accurate simulations of hydrological process in a basin without sufficient hydrological data is a challenge that remains unsolved in hydrological since (D. Jones and Kay 2007; Kokkonen et al. 2003; Post, J. A. Jones, and Grant 1998). As the authors' correctly pointed out (Wilby and Yu 2013), this challenge is exacerbated in regions where agencies need to prioritize climate risk reduction measures, especially in developing countries. The authors presented some of the ways in which this has been addressed in Yemen in the past: isohyet precipitation maps, geo-statical methods, spatial interpolations and stochastic weather generators. The limitations of these methods – dependence on physical landscape and climate attributes, ground truthing, over- and



underestimates – were briefly mentioned.

The authors' present an interesting way of estimating local data in data scarce areas using publicly available remotely sensed data and available metrological data, which is seen as one way to deal with challenge (Lakshmi 2004). The results of the work was gridded precipitation and temperature maps as well as parameters for local weather station simulations that calibrated well with observed data. This makes me very enthused about the method used here. The authors' have presented a really interesting case that makes it suitable for application in many data scarce regions.

However, although the authors' have also highlighted the ways of improving this work, it will be good if they can also address (if possible) issues of dealing with predictive uncertainties surrounding their proposed method (D. Jones and Kay 2007). I acknowledge that dealing with uncertainties in ungauged catchments is extremely difficult, if not impossible. However, a lack of mention of how to handle predictive uncertainties may mislead the reader in replication of their methods. Also, the mentioning predictive uncertainty will provide a clearer view of how accurate the proposed method is. The author's only need to mention how predictive uncertainties can be incorporated in future works.

I congratulate the authors' of moving us closer to finding the solution to predictions in ungauged basins.

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