

Interactive comment on “The within-day behaviour of 6 minute rainfall intensity in Australia” by A. W. Western et al.

Anonymous Referee #1

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Review of “The within-day behaviour of 6-minute rainfall intensity in Australia” by A.W. Western, B. Anderson, L. Siriwardena, F.H.S. Chiew, A. Seed and G. Blöschl, HESSD, 8, 3189-3231, 2011.

After reading the paper “The within-day behaviour of 6-minute rainfall intensity in Australia”, I am convinced that this paper deserves publication in HESS. The paper deals with the statistical behaviour and distribution of rainfall intensity with a high temporal resolution (6 min), for which long data sets from 42 rain gauges in Australia are used. I am particularly satisfied with the readability of the manuscript. It is a well-structured manuscript, which is clearly written. Moreover, the authors extensively discuss the choices they make, e.g., the choice of models and fitting methods. In general, the pa-

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per gives more insight into the characteristics of high-intensity rainfall and which models and fitting methods seem to be most appropriate, by performing extensive analyses.

I only have some minor comments: Page 3190, line 7: I find the term “efficiency of prediction” a bit confusing, since it is not a real prediction of rainfall (no numerical weather prediction has been performed).

Page 3191, lines 16-18: The distribution of rainfall intensity across a day can also be thought of as simply the intensity versus time, whereas in line 18 “time sequence of intensity” is already mentioned. Could this be clarified?

Page 3192. Why the well-known maximum-likelihood fitting method has not been used?

Page 3194, line 17: Maybe I missed it, but could you clearly mention the definition of a valid day?

Page 3196, line 8: I would be appropriate to add references to earlier work about L-moments. Hosking, J.R.M. and J.R. Wallis 1997: Regional frequency analysis: an approach based on L-moments. Cambridge University Press, Cambridge Hosking, J.R.M. and J. R. Wallis, and E.F. Wood, 1985: Estimation of the generalized extreme-value distribution by the method of probability-weighted moments. Technometrics, 27, 251-261.

Page 3202, line 19: It could be mentioned that a reduction in model parameter can lead to a (considerable) reduction in uncertainty of rainfall intensities.

Could the authors give a short description of the Köppen climate zones?

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 8, 3189, 2011.

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