Hydrology and
Earth System
Sciences
Discussions

Open Access

Interactive comment on "Development of IDF-curves for tropical india by random cascade modeling" *by* A. Rana et al.

Anonymous Referee #1

Received and published: 13 June 2013

The paper applies partition coefficient/cascade modeling to the disaggregation of daily rainfall records with the purpose of short-duration IDF curve estimation. The data are from Mumbay, India. The modeling approach is a refinement of procedures applied by the authors and others to other precipitation records worldwide.

The paper is interesting and useful, but the authors should make some editing before publication:

The language should be improved. This is especially a problem in Section 3.1, where several sentences are unclear; Again with reference to Section 3.1, which deals with fitting the model to data and justifying specific assumptions on the parameters, it would be useful to support the modeling choices like the variation of b with scale, the as-

sumption that $P(0/1)=P(1/0)$, and the dependence of the beta-distribution parameter a on scale in Equation 4. The tables should report all the fitted parameters. I could not find the values of the parameters –> <xml and –> <xml in Equations 2 and 4. Table 2 lists values of –> <xml and –> <xml ; what are these quantities? Figure 3 shows empirical histograms of the partition coefficient and fitted beta distributions. The fitting should be explained, as in some cases (see for example the case in the first row and next-to-last column), the fit is clearly suboptimal. Also, I do not understand the plots of the beta parameter in Figure 4: the observed values do not seem to always fit the data well and the modeled values do not follow from Equation 4. It is critical that results be explained at a level of detail that makes them interpretable and reproducible.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 10, 4709, 2013.