

## ***Interactive comment on* “Theoretical investigation of process controls upon flood frequency: role of thresholds” by I. Struthers and M. Sivapalan**

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We thank the reviewer for the positive and constructive comments provided. As the reviewer offers no major points of contention with the content or findings of the manuscript as is, this response will restrict itself to describing our response to the technical suggestions provided at the end of the review.

Minor typographical errors picked up by the reviewer (missing spacing between some in-line equation contents, and discrepancies in the figure legend of Figure 7a) have been corrected as requested. The suggested rewording of the phrase used to describe the meaning of the parameter grouping “ep.tb” (inter-event expected potential evaporation volume) has been adopted.

Regarding the reviewer's suggestion that the number of curves be reduced in certain figures (eg. figure 4b), it is the author's contention that the number of curves is not inordinately large (i.e. the number of curves does not negatively impact the legibility of the figures, or ability to match each curve to its legend entry). It is true that many of the curves overlap one another, which might suggest that these 'duplicates' are superfluous. On the contrary, these overlapping curves serve to illustrate that, beyond the primary process control, scatter in the response behaviour associated with significant changes in other model parameters (as well as stochastic variability implicit in the approach used) is relatively minor. We would therefore argue that retaining these curves provides some beneficial insight into process controls without significantly impairing the clarity of the figures in question.

We accept the suggestion of the reviewer to improve the description of equivalence between a "wet-season, dry-season" seasonality case and a case without seasonality. Additional description has been added to Section 3.7 to clarify what is meant by equivalence between a case with seasonality and a case without seasonality, as well as to clarify how the input storm and interstorm parameter values of equivalent cases are related.

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 3, 3279, 2006.

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