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Hydrology and Earth System Sciences
Discussions

Interactive comment on "Anatomy of simultaneous flood peaks at a lowland confluence" *by* Tjitske J. Geertsema et al.

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Dear editor,

We are very pleased with the constructive reviews and encouragement from both reviewers to proceed towards publication of the work in HESS. When we look at the comments of the reviewers, we conclude that there are no major objections to the methodology used or robustness of the conclusions. In our view, the comments are mainly textual, and below we will outline how we intend to proceed with further improving the manuscript.

From the first review (from Paul Bates) we understand that we need to explain more about the origin of the flood pulse (discussion points 1, 3 and 5). In our view, there is

no annual flood pulse, but there are multiple discharge peaks clustered in the winter season. Paul Bates is right, however, that this depends on the type of catchment. We will discuss this dependency in a counter-hypothesis in the introduction and cover this topic extensively in the discussion. In addition, we will explain the water level response to simultaneous occurrence of discharge waves on the basis of standard hydraulic theory (discussion point 4). The other discussion points of Paul Bates concern smaller textual suggestions, which we will include.

From the second reviewer we understand that we need to explain the DTW method and its application more clearly (major discussion points 1 and 2). We are happy to do this, for which we can elaborate on the input data and better explain figure 4. We intend to revise figure 4 and the text of the method chapter to describe step-by-step the way we used the method. Moreover, we will refer to more literature about the DTW method. In addition, we will better explain the origin of the precipitation data in the text (major discussion point 3) and together with the counter-hypothesis (we formulate, based on comments of the first reviewer), we will elaborate on the precipitation distribution effects (major discussion point 4). The other points of discussion can be addressed by small textual suggestions, which we are happy to incorporate in the manuscript.

We would like to thank again the reviewers for their constructive feedback and for their help to improve the manuscript. We are convinced that an improved version of the manuscript will be of interest to the readers of HESS.

With best regards,

Tjitske Geertsema, on behalf of all authors

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