

Dear Editor,

Thank you for your decision following reviewers' reports. We appreciate your helping and constructive implication in this review process. You will find in this letter a reply to your report and to reviewers' comments.

Best regards,

Martin Le Mesnil, on behalf the co-authors

NB: In the present document, line numbers refer to the revised manuscript with all revision marks displayed.

I) Response to Editor

Comments to the Author:

The revised manuscript has received very favourable reviews and the authors time and effort on improving their paper is very much appreciated. I would just ask the authors to respond and reflect on Reviewer 1's comments and minor changes before publication that I shall quickly review...., Jim.

Thank you. We carefully read the reviewers comments and implemented corresponding modifications to the revised version of the manuscript.

II) Response to reviewers

Response to Anonymous Referee #2

The authors have improved their manuscript according to the recommendations of the editor and the reviewers. In particular, they have extended their justification for using topographic catchment divides.

We are grateful for this positive feedback on the revised manuscript.

However, I think that in their description of IGF based models (l 70ff) it is not clear that conceptual models can follow a topographic delineation for surface flow components but a hydrogeologic delineation for groundwater flow components. The paragraph reads as if the concepts of topographic and hydrogeological divides would be mutually exclusive but they are not in modelling. I would personally not write that models with IGF follow a topographic delineation approach as in l 74. I agree that groundwater catchment delineation is subject to much higher uncertainty than topographic delineation.

We agree with this statement and acknowledge that models can follow a topographic delineation for surface runoff simulation in addition to a hydrogeological delineation for groundwater flow. Nevertheless, delineating hydrogeological boundaries for all our catchments would demand complementary investigations and cannot be automatically computed (unlike topographic boundaries). Moreover, those delineations would introduce important uncertainties. We modified sentences accordingly in lines 74 and 77.

I think the article can be published now with technical corrections:

- l 42 accent at Lopez missing
- l 63 "Merz and Blöschl"
- fig. 7: mixed, not mixt
- l 788: quickis -> quick is
- In some references, capitals are used. I think that the style of the list of references should be checked against the journal style.

We modified the manuscript according to these remarks.

Response to Anonymous Referee #3

In „Impact of karst areas on runoff generation, lateral flow and interbasin groundwater flow at the storm-event timescale” Le Mesnil et al study the influence of karst on runoff generation processes using a large number storm event a large number of catchments with variable degree of karst coverage. Event descriptors are compared to catchment attributes and climatic descriptors. Despite large variations among their catchments, they show that karst areas show increased infiltration from rivers during floods, increased flood times with lower peaks, and lateral losses to other catchments.

A previous version of the manuscript got a general positive feedback but recommendations in the frame of major revision had to be performs, mostly in terms of more detailed analysis especially yon the interpretations of the interbasin groundwater flow (IGF). Following the remarks of the AE and the referees, the authors performed substantial revisions and provided a strongly improved version of their manuscript:

- Subsection 5.3 was extended with an additional figure and elaboration about the relationship between IGF and fast and slow flow components
- Added more information and a new figure in subsection 5.1 that provides more insights into the seasonality of IGF in different regions.
- Also added information and a new figure in subsection 5.2 that visualizes the differences between topographic and subsurface, “hydrogeologically active” catchment areas.
- Elaborated the novelty of this study, added more justification for chosen methods and added more complete literature review, clarified the meaning of some of the used variables, and clarified in the conclusions that their work addresses gaps of karst research at the stream and river scale (not the aquifer scale).

For all those reasons, I feel confident recommending publication.

[We are grateful for this positive feedback on the work done for manuscript revision.](#)