

List of Changes

1. Lines 173-174 of pages 9. The repeated content has been deleted, in response to Comment 2 of Reviewer #2.
2. Lines 235-236 of page 12. “two” in this sentence has been corrected as “three”, in response to Comment 3 of Reviewer #2.
3. Line 246 of page 13. “Figure 13” in this sentence has been deleted, in response to Comment 4 of Reviewer #2.
- 4.

Note: The above changes are indicated using track changes in the marked-up revised manuscript.

Response to Reviewers' Comments

Dear Editor and Reviewer,

Thank you for the reviewers' valuable comments and suggestions on our manuscript. We have carefully reviewed your feedback and made the necessary modifications to the manuscript. The detailed corrections are listed below, point by point:

Response to Reviewer #2:

Comment 1:

The manuscript has been greatly improved. The findings can provide new insight into runoff generation mechanism, and help development of hydrological model. Some minor revisions should be made or clarified.

Response 1:

Thank you for your valuable feedback. Your comments have significantly improved the manuscript, and we have carefully incorporated your suggestions into the revised version. Below is a detailed response to each of your comments. We hope our revisions meet your expectations and make the manuscript suitable for publication.

Detailed comments:

Comment 2:

Line 173, 'These measurements were taken at 10-minute intervals' can be deleted, because in previous sentence 'at 10-min intervals' appeared.

Response 2:

Thank you for your comment. We sincerely apologize for the oversight and have removed the duplicated content in the revised manuscript. (Lines 173-174, page 9).

Comment 3:

Line 235-237, Two primary response types..., illustrating these three types', please keep consistent.

Response 3:

Thank you for your comment. We regret the mistake and have unified the expression of the number of response event types in this paragraph. We also verified the terminology throughout the text to ensure consistency. In the revised manuscript, the sentence has been corrected to: "Three primary response types were identified based on the number and shape of streamflow peaks: unimodal, bimodal and hybrid bimodal events." (Lines 235-236, page 12)

Comment 4:

Line 245-246, '...refer to Figures 12 and 13.' I cannot see bimodal or hybrid bimodal events in Figure 13.

Response 4:

Thanks for your comment. Events B1 and B4 in Figure 13 are bimodal, and events B2 and B3 are hybrid bimodal. Additionally, events B1 and B3 correspond to Figures 12c and 12e, respectively. We apologize for any confusion. Figure 13 focuses on isotopic content and runoff hydrograph separation analysis, which may not clearly highlight the event types. This oversight is our mistake,

and we appreciate your feedback. To improve clarity, we have removed references to Figure 13 in the revised manuscript. (Line 246, page 13)

Comment 5:

Line 318-319, ‘...between 5hr to 9.9days after the occurrence of the direct peak.’ Please make sure the peak delay is 9.9 days in such a small watershed, and there is no rainfall event during these 9.9 days.

Response 5:

Thank you for your comment. We confirm that the delayed peak appeared 9.9 days after the direct peak based on actual observations within the watershed. While sporadic rainfall occurred during some delayed streamflow peaks, causing minor direct peaks, we manually removed these by connecting the initial rise to its inflection point on the recession limb. This ensures the accuracy of our lag time determination.

Considering the brief duration of these direct peaks, their removal does not impact the overall trend of the delayed streamflow. The hydrograph shape and stormflow volume indicate a slow rise and a small peak for the delayed streamflow in this event, which had a lag time of 9.9 days. This could be due to the watershed's drier condition following a dry year, leading to slower outflow of water sources forming the delayed peak.

In our ongoing work on stormflow generation mechanisms, we observed three events (including this one mentioned here) with delayed peaks lagging more than a week, where both the peak and stormflow yield were smaller. Consequently, we excluded these events in subsequent analysis, focusing on bimodal events with more pronounced and high-yield delayed peaks.

However, for this study, which aims to characterize the rainfall-runoff response, we categorized 95 events into three types based on hydrograph shape. Thus, we retained the event with a 9.9-day lag when calculating the lag time of delayed peaks. We sincerely appreciate your valuable comments and questions, which have significantly contributed to improving our manuscript.

The authors extend their heartfelt gratitude to the reviewers for their kindness and helpful suggestions, which have greatly improved our manuscript. We have submitted the revised version to your esteemed journal and eagerly await your favorable response.

Yours

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