

## ***Interactive comment on “Watershed classification for the Canadian prairie” by Jared D. Wolfe et al.***

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### Response to Referee #3 - Summary

Comments from Referee #3 focused on the Canonical Correlation Analysis (CCA). We appreciate their request for more detail regarding our analysis, and we discuss some shared concerns among reviewers in our response to Referee #1. Although a complete explanation of the CCA method is beyond the scope of the current work, please see below regarding our responses to Referee #3’s feedback.

In order to reduce the ambiguity in how we applied canonical correlation analysis in this study we will rewrite the section describing the approach. Canonical correlation analysis was used for the purpose of estimating mean annual runoff and the 1:100 year flood for the 4175 watersheds because it was felt that it provided a more independent means of regionalization than using terms directly applied within the subsequent cluster

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analysis. In regards to any inconsistency in using two methods - canonical correlation analysis and hierarchical cluster analysis - the former was used for the regionalization exercise to derive streamflow estimates for each watershed and the cluster analysis to classify the watersheds. The latter was not used to regionalize flows, and is considered a better tool for this purpose than canonical correlation analysis. Overall, we believe that addressing these concerns and providing added clarity in our methods will enhance our manuscript. We appreciate the feedback given by the reviewers.

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2018-625>, 2019.

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