

## **Comment on hess-2021-249**

Anonymous Referee #2

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Referee comment on "Karst spring recession and classification: efficient, automated methods for both fast- and slow-flow components" by Tunde Olarinoye et al., Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2021-249-RC2>, 2021

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Thank you for the opportunity to review this manuscript " Karst spring recession curve analysis: efficient, accurate methods for both fast and slow flow components." The authors have presented an intriguing combination of techniques to separate and quantify fast and slow flow components of a spring hydrograph recession. This is an exciting and valuable contribution to the literature and, while the methodology appears technically sound, there are a few overarching issues that I feel need to be addressed prior to final publication.

First, the use of a snow-dominated system violates much of the underlying assumptions of recession curve analysis. Namely, that the recession behavior is controlled by infiltration and flow path properties within the rock itself. In a snowmelt system, this is not often the case - snowpack often acts as a separate storage component in the system that is not controlled by aquifer properties but instead by a combination of sublimation, melt, and refreeze processes. To continue utilizing this site, the authors should be clear up front about this potential violation of assumptions and utilize this in the discussion of the results.

Similarly, it would be valuable to discuss the potential implications of seasonality of precipitation (and soil moisture) on infiltration capacity in the mediterranean system. Either more information on when recession curves are in relation to seasonal precipitation or discussion of this impact on the fit of the results would be valuable.

Generally, the document could use some minor grammatical review to correct some minor issues throughout.