

Interactive comment on “Hydrological characterization of cave drip waters in a porous limestone: Golgotha Cave, Western Australia” by Kashif Mahmud et al.

Anonymous Referee #1

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In the submitted manuscript Mahmud et al. provide a detailed study on the dynamics of cave drips at a large karst cave in South West Australia. The authors use a large set of automatically recorded drip rate records to classify and cluster the different drips by their statistical properties and knowledge from previous research. They show that established classification schemes do not apply to their data set but their new clustering method provided a clear distinction of 4 clusters of drip types within the cave. The most prominent one, cluster 1, consisted of drips that were mostly controlled by matrix flow, which is in accordance with previous classification using LiDAR imaging. The other clusters were expressed by a stronger hydrological variability in terms of mean discharge and flow variability.

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The manuscript is generally well-written, the methods are clearly explained and the conclusions are well supported by the results and discussion. Some improvement is necessary in terms of structure and detail: Some parts of the methods appear in the results section and should be moved to the methods description. Also the elaborations about the drip characteristics are a bit too detailed and may be shortened to improve the readability of the manuscript. Finally, another subsection addressing the impact of the results of this study would be very valuable for the karst and cave hydrology communities. I am confident that this can be done in the frame of minor revisions.

Please see the attached and commented pdf for more detailed specific and technical comments.

Please also note the supplement to this comment:

<https://www.hydrol-earth-syst-sci-discuss.net/hess-2017-127/hess-2017-127-RC1-supplement.pdf>

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2017-127>, 2017.

C2