

Interactive comment on “Can the two-parameter recursive digital filter baseflow separation method really be calibrated by the conductivity mass balance method?” by Weifei Yang et al.

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This is something that occurred to me after submitting my review that I have not seen much discussion of. One difference between the CMB method and other methods based on the hydrograph (eg Eckhardt or the local minima techniques) is the number of times in a year that the stream is conceived to be fed entirely by baseflow. Assigning a single value for EC(BF) based on the highest stream EC generally means that the calculated baseflow is 100% only on one or two days at low summer flows. However, the hydrograph techniques generally predict that the stream is fed by baseflow multiple times in the year between the high flow peaks. This difference in conceptualisation

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probably relates to how the techniques apportion the waters (so with the CMB, the baseflow component may be mostly saline groundwater and the hydrograph techniques may be grouping all delayed water stores as baseflow). If changing BFI in the Eckhardt method only results in a decrease in the volume of baseflow but not the frequency of when the stream is estimated to be dominated by baseflow, there will always be disagreement on short timescales. Perhaps this is worth commenting on.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2020-488>, 2020.

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