Hydrology and Earth System Sciences Discussions

Interactive
Comment

Interactive comment on "Are streamflow recession characteristics really characteristic?" *by* M. Stoelzle et al.

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This manuscript compares the results obtained from recession curve fitting for different (a) selection criteria for recession periods and (b) curve-fitting methods for the selected recessions. The findings are interesting, but the presentation could be improved in several ways.

Primary concerns:

1) Say more about how the differences in recession timescale and inferred storage are logical consequences of the methods selected. For example, fitting a lower envelope (Brutsaert) will by design give longer recession timescale than fitting to an average

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recession rate (Kirchner). As another example, because the relationship between Q and -dQ/dt is in fact not linear on a log-log scale, excluding high flows (the first few days after peaks) would be expected to affect the retrieved linear regression parameters a, b in a systematic way. Thus, the discussion should as much as possible explain the differences seen in terms of the intrinsic properties of the methods employed.

2) Along the same lines, the different methods were devised under different theoretical assumptions and largely for different purposes. It probably is not fully correct to say that the differences found between methods "elucidate a considerable uncertainty", since these differences are not some quasi-random scatter; rather, depending on the application, one of the methods may well be the most appropriate one to use to estimate a recession curve, while others are inappropriate.

Secondary concerns:

1) Give more characteristics of the catchments used (area, climate, land cover) and ideally a citation for the streamflow data.

2) Is the rho at the beginning of the last paragraph on p. 10575 different from the rho-bar that appears afterward? Also, should be "Spearman's" in the Table 1 caption.

3) Fig. 3: If there are only 20 watersheds, how can there be multiple outliers from the "whiskers extending to upper and lower 5% percentiles"?

4) Fig. 4: Give the same number of significant digits (e.g. 2) for the regression coefficients in all cases.

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