

Interactive comment on “Complex networks, streamflow, and hydrometric monitoring system design” by M. Halverson and S. Fleming

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Received and published: 22 May 2015

We thank the reviewer for his positive assessment of our discussion paper, including a recommendation of publication pending minor revisions, and for identifying some specific directions for further improvements to the manuscript.

All of the review comments have been accepted and incorporated into the revised paper, without exception. Our literature review has been significantly expanded, including but not limited to the additional citations recommended by the reviewer. We have also provided more complete discussions of the basic network theoretic concepts of clustering coefficient, degree distribution, and path length, as recommended by the reviewer. In tandem, these two types of changes resulted in a restructuring of the introductory

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section of the paper, as well as other edits throughout the manuscript, including but not limited to several references to the important work of Sivakumar and Woldemeskel (2014). Additionally, while the community detection process is only one aspect of our study, and a full review of the subject is outside the scope of this research paper, the reviewer was correct in noting that this topic could benefit from some additional explanation, and in particular that its potential implications to catchment classification should be identified. Both of these recommendations have also been accepted. In particular, some further explanation of the algorithms, as relevant to this study, is now provided in Section 4.1, and the possible relationships to regime typing and catchment classification are concisely but explicitly noted in the concluding section, along with a citation to Sivakumar et al. (2015).

References:

Sivakumar, B., Singh, V. P., Berndtsson, R., and Khan, S. K.: Catchment Classification Framework in Hydrology: Challenges and Directions, *Journal of Hydrologic Engineering*, 20, doi:10.1061/(ASCE)HE.1943-5584.0000837, [http://dx.doi.org/10.1061/\(ASCE\)HE.1943-5584.0000837](http://dx.doi.org/10.1061/(ASCE)HE.1943-5584.0000837), 2015.

Sivakumar, B. and Woldemeskel, F. M.: Complex networks for streamflow dynamics, *Hydrology and Earth System Sciences*, 18, 4565–4578, doi:10.5194/hess-18-4565-2014, <http://www.hydrol-earth-syst-sci.net/18/4565/2014/>, 2014.

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HESSD

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