

Interactive comment on “Optimal Design of Hydrometric Station Networks Based on Complex Network Analysis” by Ankit Agarwal et al.

Anonymous Referee #1

Received and published: 20 April 2018

I am not convinced that Fig.2 and Table 2 really help understand what the result of the implementation of the proposed ranking method gives if applied to a real observation network. The example in Fig.2 is extremely simple and can hardly be extrapolated to a raingauge network including hundreds of gauges. It is unclear what node 5 in figure 2, which illustrates the added value of the proposed ranking method, really stands for. What about raingauges that are poorly correlated with other gauges that could rather appear as dead-ends or even isolated nodes in the build network ? Some extracted maps from figure 4 showing on a limited size area, the topography along with the location and resulting ranks of the raingauges and maybe also the location of the 10% higher ranked removed gauges could improve a lot the presentation of the method.

Moreover, I confirm that additional validation is needed and this is acknowledged by

C1

the authors. At least the resulting variance of the rainfall fields corresponding to the various tested networks in table 4 should be provided. If significantly modified by the gauge selection method – probably moderately for the random selection method – it could have a major impact on the figures in table 4. This should be considered in the interpretations. But evaluations based on a leave-one-out approach should also be conducted.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2018-113>, 2018.

C2