

Supporting Information for

Utilizing Entropy-Based Method for Rainfall Network Design in Huaihe River Basin, China

Jian Liu ^{1,2,*}, Yanyan Li ^{1,2}, Yuankun Wang ³ and Pengcheng Xu ⁴

¹ Water Resources Research Institute of Shandong Province, Jinan 250014, China;
liyanyan026@outlook.com

² Shandong Province Key Laboratory of Water Resources and Environment, Jinan 250014, China

³ School of Water Resources and Hydropower Engineering, North China Electric Power University,
Beijing 102206, China; yuankunw@ncepu.edu.cn

⁴ College of Hydraulic Science and Engineering, Yangzhou University, Yangzhou 225008, China;
m18994113495@163.com

* Correspondence: water_liujian@163.com

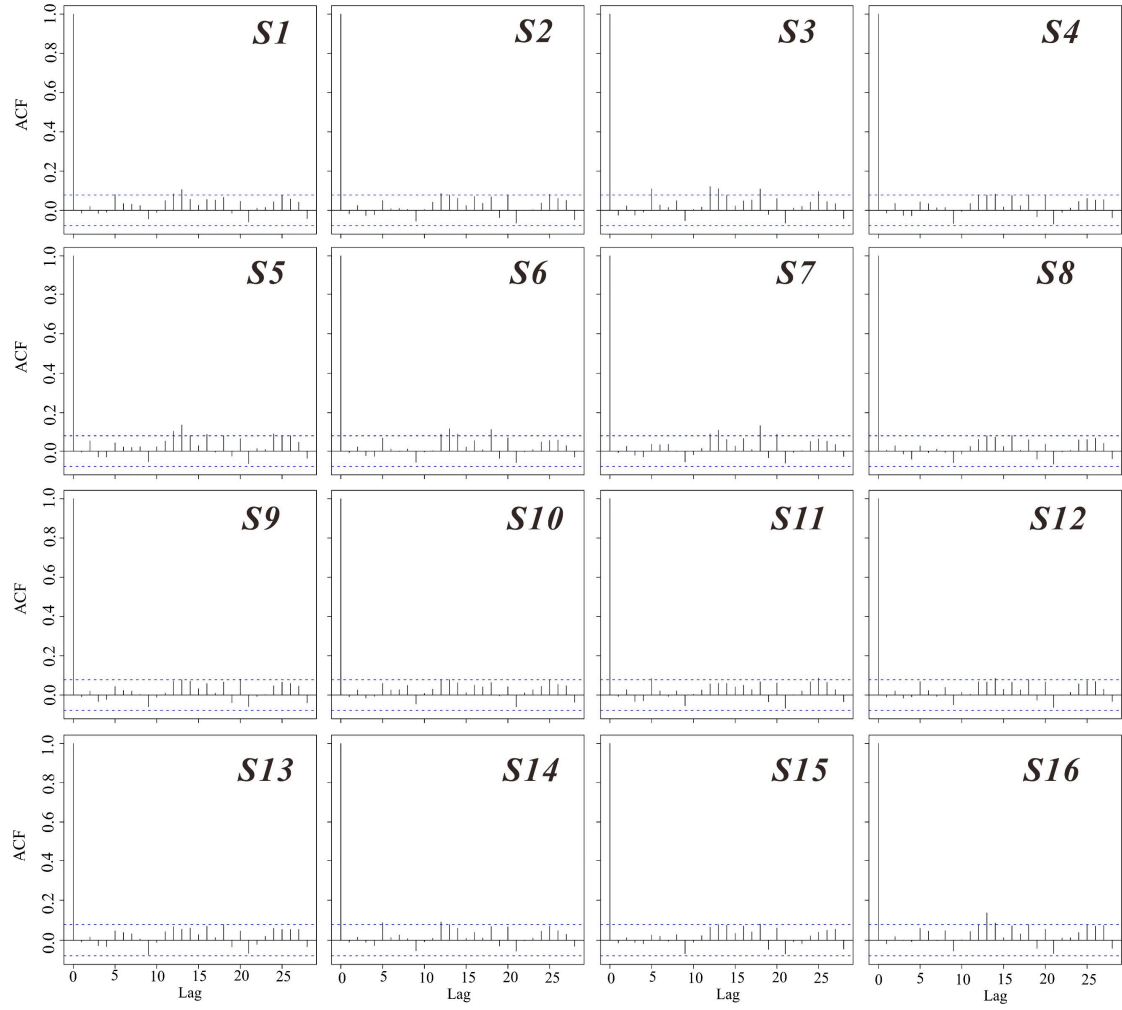


Figure S1(a). Results of autocorrelation tests for processed precipitation series of selected 16 stations with $n_{EI} = 3$. ACF: autocorrelation function value. ACF is between the two blue dashed lines in the figure, which recommends processed data can obey the independent and identically distributed assumption (*i.i.d.*). On the contrary, ACF value exceeds two blue dashed lines which denotes the data could not stick to the *i.i.d.* assumption.

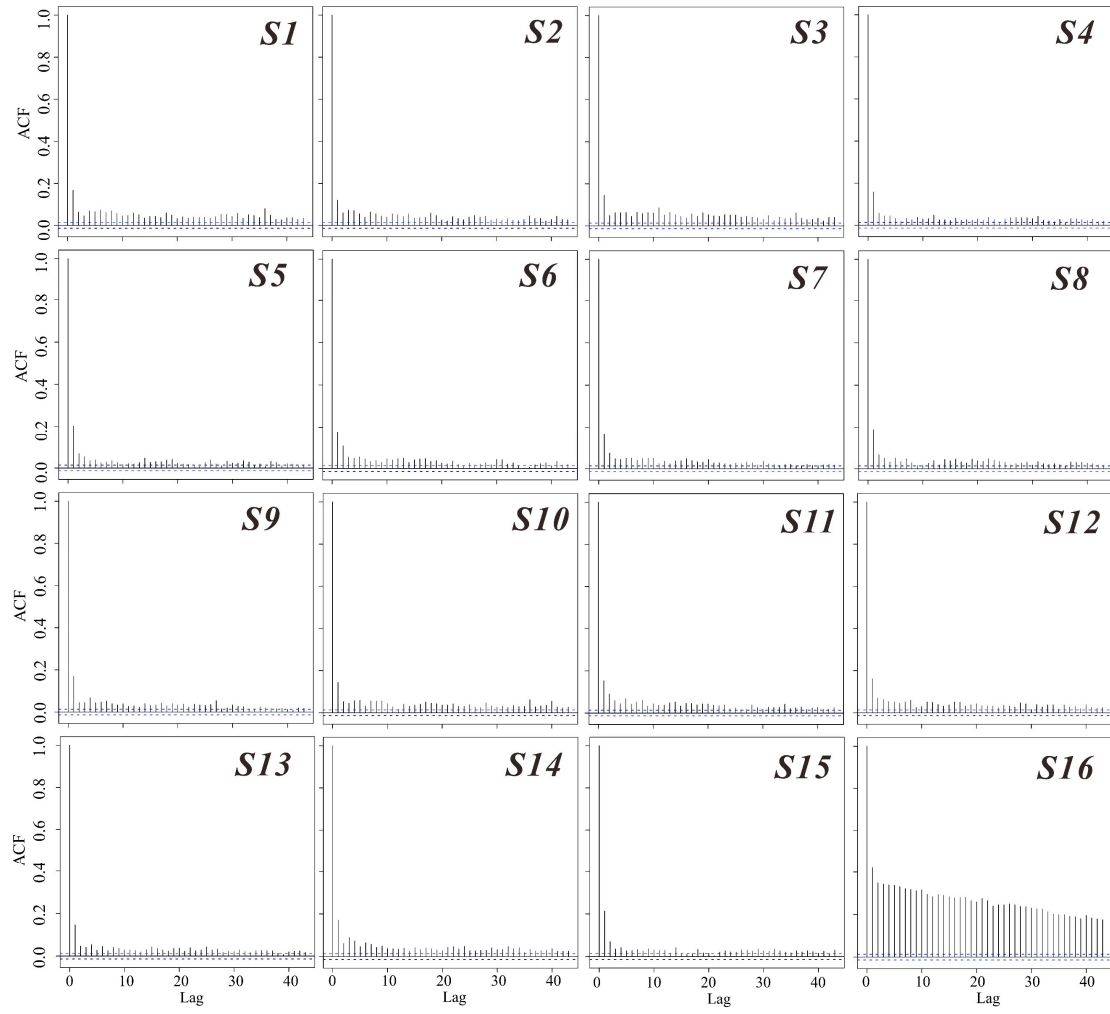


Figure S1(b). Results of autocorrelation tests for original daily precipitation series of selected 16 stations.

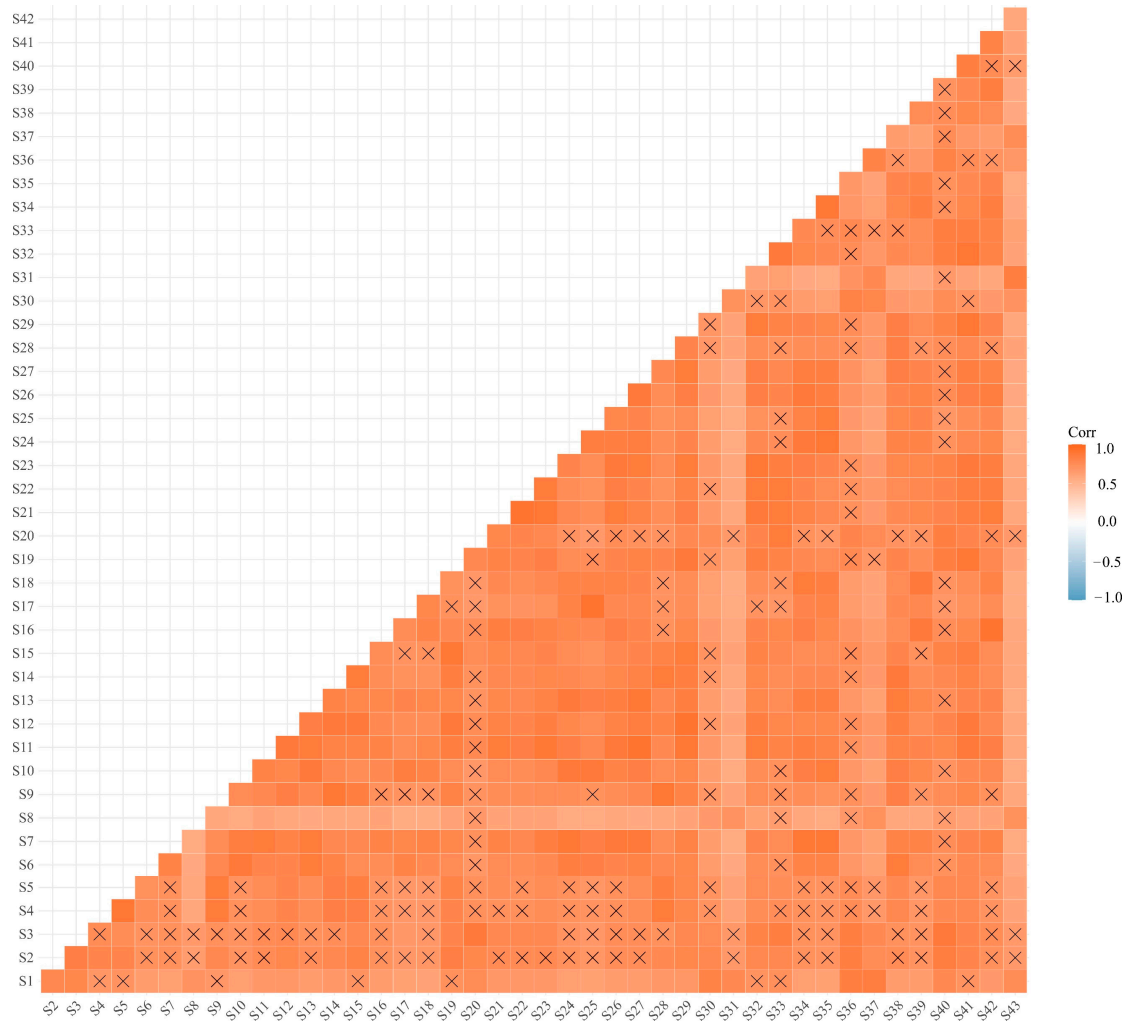


Figure S2(a). Correlation coefficient graph for processed precipitation series of all 43 stations with $n_{EI} = 3$. “X” denotes a significant correlation level of over 95%.

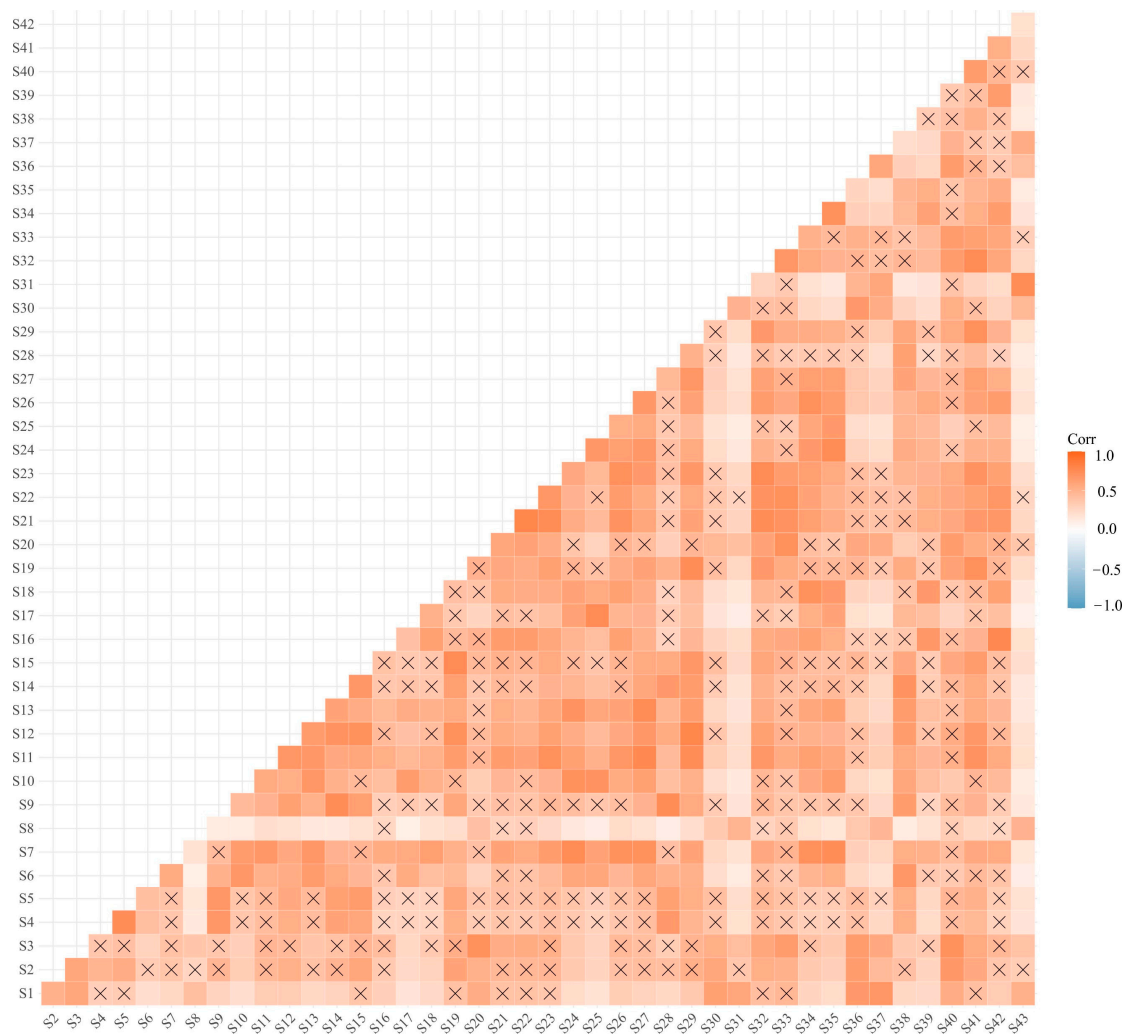


Figure S2(b). Correlation coefficient graph for original daily precipitation series of all 43 stations. “x” denotes a significant correlation level of over 95%.

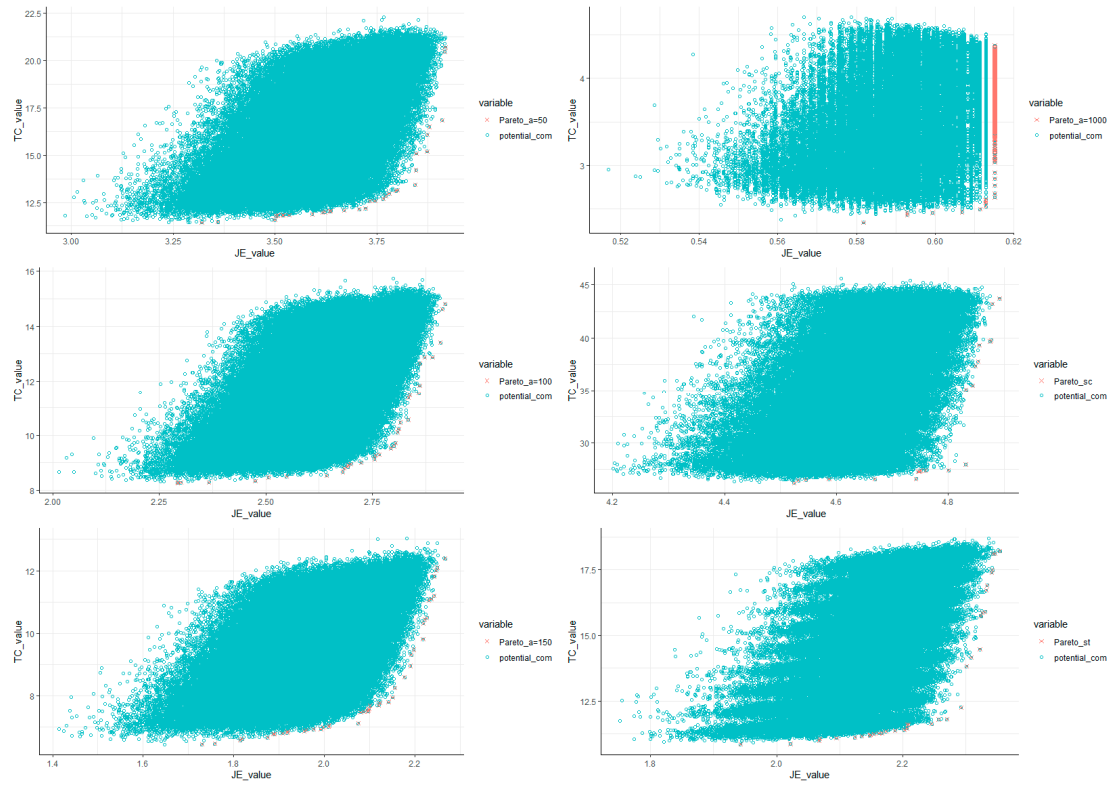


Figure S3. Process of the optimization of network design based on the Pareto solution for three discretization methods. Pareto_a=50, 100, 150 and 1000 denoted the Pareto solution set through flood function-based discretization approach with 4 kinds of parameters. Pareto_sc denoted the Pareto solution set through EWH-Sc method while st denoted Pareto solution set through the EWH-St method in the above figure. Potential_com denoted 90000 potential gauge combinations.