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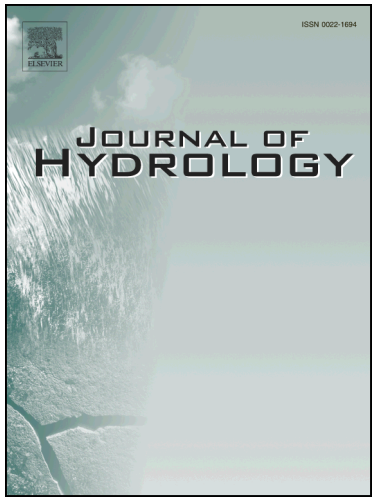

Research papers

Comprehensive drought characteristics analysis based on a nonlinear multivariate drought index

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ACCEPTED MANUSCRIPT

Comprehensive drought characteristics analysis based on a nonlinear multivariate drought index

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Abstract:

It is vital to identify drought events and to evaluate multivariate drought characteristics based on a composite drought index for better drought risk assessment and sustainable development of water resources. However, most composite drought indices are constructed by the linear combination, principal component analysis and entropy weight method assuming a linear relationship among different drought indices. In this study, the multidimensional copulas function was applied to construct a nonlinear multivariate drought index (NMDI) to solve the complicated and nonlinear relationship due to its dependence structure and flexibility. The NMDI was

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