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Uncertainty Analysis of Interpolation Methods in Rainfall Spatial Distribution— A Case of Small Catchment in Lyon

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ABSTRACT
Quantification of spatial and temporal patterns of rainfall is an important step toward developing regional water sewage models, the intensity and spatial distribution of rainfall can affect the magnitude and duration of water sewage. However, this input is subject to uncertainty, mainly as a result of the interpolation method and stochastic error due to the random nature of rainfall. In this study, we analyze some rainfall series from 30 rain gauges located in the Great Lyon area, including annual, month, day and intensity of 6mins, aiming at improving the understanding of the major sources of variation and uncertainty in small scale rainfall in-terpolation in different input series. The main results show the model and the parameter of Kriging should be different for the different rainfall series, even if in the same research area. To the small region with high den-sity of rain gauges (15km2), the Kriging method superiority is not obvious, IDW and the spline interpolation result maybe can be better. The different methods will be suitable for the different research series, and it must be determined by the data series distribution.

KEYWORDS

Cite this paper

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