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## Sensitivity Analysis of Influence Factors of Rainfall Warning Index for Flash Flood Disasters

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**Abstract:** This paper took five factors including antecedent precipitation index, river roughness, water surface slope, confluence parameter and loss parameter in the calculation of rainfall warning index of flash flood disasters and employed the trend analysis and grey correlation analysis methods to analyze the sensitivities of the factors. The Beigouhe Watershed in Henan Province was taken as a case study. The results show that the factors influencing the rainfall warning index in turn are river roughness, water surface slope, antecedent precipitation index, loss parameter, confluence parameter. And the roughness should be selected as the most sensitive factor in the calculation of the rainfall warning index for flash flood. The study is significant to improve the accuracy of rainfall warning index.

**Key words:** flash flood disaster; rainfall warning index; sensitivity analysis

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