

## **Regional flood frequency analysis by L-moments for the middle and lower reaches region of the Yangtze River**

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**Abstract** The regional flood frequency analysis method based on L-moments proposed by Hosking in 1997 is applied to the flood frequency analysis of annual maximum flood volume for five hydrological stations, including Yichang, Shashi, Hankou, Luoshan and Datong, in the middle and lower reaches of the Yangtze River. The method of Hosking is a new one for Chinese traditional regional flood frequency analysis. The calculated results show that the five stations could be considered as a homogenous region for frequency analysis, so the index-flood method is used to calculate design values for each station, and the Wakeby distribution is recommended for the population growth-curve, because the other distributions, i.e. Pearson-III, GLO, GEV, GPA and GLN are not accepted by the Z statistic test.

**Key words** L-moment; regional flood analysis; Yangtze River; annual maximum flood volume; index-flood

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