



## **Research and application of watershed hydrological model identification method**

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Study by the case of the small and medium-sized watersheds in the eastern part of Liaoning Province, analyze and compare the applicability of hydrological models based on the mechanism of model runoff and flow, then establish an indicator system for watershed hydrological model identification considering climate characteristics, underlying surface conditions and human activities. The climate characteristics of the study area were analyzed when the XAJ model, the DHF model and the TOPMODEL were used as alternative models. Principal component analysis was used to determine basin area/main channel length, channel ratio, forest coverage, topographic index and climate type as input indicators for watershed hydrological model identification, then the analytic hierarchy process is used to identify hydrological models suitable for flood simulation in each study basin. The flood simulation results show that the established hydrological model identification index system is representative and the identified hydrological model could well reflect the runoff and flow characteristics of the watershed.