IWRM2018-113
8th International Water Resources Management Conference of ICWRS

Multi-model ensemble hydrologic simulation using BP Neural Network on the Yalung River Basin

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The hydrological model is one of the significant and effective ways in detecting the complex hydrological processes. Different models have different strengths in capturing the various aspects of the hydrologic processes. Relying on a single model usually leads to some simulation uncertainties. Ensemble approaches based on multi-model hydrological simulations can decrease the uncertainties to a certain extent. In this paper, taking the Yalung River Basin as the case study, three commonly used hydrological models: SWAT, VIC and BTOP, were selected and used for independent simulation with the same input and initial values firstly, and then BP artificial neural network method was employed to combine the three results. Results show that, the BP ensemble results present better than those from single model simulation.