



## **Water Quantity and Quality Joint-Operation Modeling in Three Gorges, China**

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Water quantity and quality joint operation of dams and floodgates is a cost-effective way to improve the water environment of a river at present. The Three Gorges is facing potential threatening of water pollution problems because accidental water pollution events have occurred sometimes. Taking a river containing the Three Gorges Reservoir and the Gezhouba Reservoir, which is one of the most attentive river sections in the Yangtze River basin, as the study area, this paper considers objectives of flood control, pollution prevention, and a water quantity and quality joint-operation model of dams and floodgates was established. By analyzing the operation rules of various composed scenarios, a three-stage operation method (TSOM) of water quantity and quality was proposed based on the model. Several typical operation scenarios were selected to be simulated. The joint operation of dams and floodgates will play a positive role in improving the current water quality of the main stream in the Yangtze River.