

## **Application of environmental fuzzy risk analysis in water resources planning**

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**Abstract** In this paper, the fuzzy theory is applied to risk analysis and the environmental risk of a large water resources project is studied. The risk scores of the environmental system under different exploitation scales are calculated. Based on this foundation, a mathematical model for optimal decisions for the exploitation scale of the water resources project is established, considering its environmental risk. As an example, the environmental risk value and optimal exploitation scale of the Bose hydro project are calculated. The result is identical to the actual designed value.

**Key words** water resources; environmental risk; fuzzy synthetic; exploitation scale

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