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FUZZY SYNTHETIC EVALUATION OF WEIHE WATER QUALITY

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Abstract

Based on the fuzzy logic principle, a modified Fuzzy Synthetic Evaluation (FSE) is proposed to assess water quality status of Weihe River (Baoji, China). The potential application of the FSE has been tested in a case study. Twelve sampling locations of Weihe River and its tributaries in Baoji area were selected and seven water quality parameters of BOD₅, COD, fluoride, ammonia, total phosphorus (TP), total nitrogen (TN) and permanganate index, were monitored from 2008 to 2009. The findings clearly indicated that the methodology adopted in this study was reasonably close to the official reports published by the local Environmental Protection Agency (EPA) on the pollution problems in the study area. The water quality of Weihe River in Baoji area showed the Class II and III according to the Chinese classification standard. More importantly, this provides a good showcase of the modified FSE in river water quality evaluation.

Key words: Fuzzy Synthetic Evaluation, river water quality, water management, water quality criteria

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