

Application of a fuzzy comprehensive model for drought assessment: Jinan City, China, case study

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Abstract Drought is different from other natural hazards and it is difficult to recognize the seriousness of drought at its beginning. Economic, environmental, and social drought impacts can be enormous. The purpose of this paper is to comprehensively evaluate drought degree. Based on the single-objective method of drought assessment, a fuzzy assessment model for drought assessment is introduced; several influencing factors, such as surface water, groundwater, soil moisture and precipitation are considered in evolving a new system of drought assessment and realizing drought assessment quantitatively. This model was applied to some areas for drought assessment and was found to be uniform in evaluating the degree of drought.

Key words fuzzy theory; drought assessment; drought indexes; comprehensive assessment; Jinan City, China