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Multifactorial Fuzzy Approach for the Assessment of Groundwater Quality

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ABSTRACT

This paper describes the utility of fuzzy Simulink model to assess the groundwater quality levels in Tiruchirappalli city, S. India. Water quality management is an important issue in the modern times. The study aimed at examining the influence of multiple parameters of ground water on potable quality. The data collected for Tiruchirappalli city have been utilized to develop fuzzy Simulink approach. This is illustrated with seventy nine groundwater samples collected from Tiruchirappalli corporation, S. India. The characteristics of the groundwater groundwater for this plain were monitored during the years 2006 and 2008. The quality of groundwater at several established stations within the plain were assessed using Fuzzy simulation. The results of the calculated fuzzy logic Simulink model and the monitoring study have yielded good agreement. Groundwater quality for potability indicated high to moderate water pollution levels at Srirangam, Ariyamangalam, Golden Rock and K. Abisekapuram depending on factors such as depth to groundwater, constituents of groundwater and vulnerability of groundwater to pollution. Fuzzy logic simulation approach was a practical, simple and useful tool to assess groundwater quality. This approach was capable of showing the water quality assessment for drinking on fuzzy Simulink model

KEYWORDS

Groundwater, Potability, Fuzzy Simulation, GIS, Tiruchirappalli

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