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Hydro geochemistry Evaluation of Ground Water using Multivariate Factor Analysis in Srikakulam Costal Region of Andhra Pradesh, India

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ABSTRACT

The present research study, is an attempt to evaluate the quality of ground water in Srikakulam region of Andhra Pradesh by characterizing ground water samples collected from nearby Kalingapatnam creek stream joining the sea in Srikakulam district during pre monsoon and post monsoon seasons. 12 parameters viz., pH, EC, TDS, Na, K, Ca^{+2}, Mg^{+2}, Cl^{-}, HCO_3^{-}, NO_3^{-}, SO_4^{-2}, PO_4^{-3} were determined. The multivariate factor analysis is performed for pre and post monsoon chemical data set. It provides an insight into the source of parameters which are mainly responsible for the water quality variations that occur in the area including the sea water intrusion. The present research study elucidates the effectiveness of factor analysis in evaluating the hydro geochemistry of ground water quality in this coastal region which is dominated by natural and anthropogenic activities.

Keywords: Ground Water, Quality, Factor analysis, Coastal region, Monsoon.