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Assessment of Water Quality of Euphrates River Using Cluster Analysis

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ABSTRACT

Multivariate statistical method including cluster analysis (CA) was used to assess temporal and spatial variations in the water quality of Euphrates River, Iraq, for a period 2008-2009 using 16 parameters at 11 sampling sites. Hierarchical CA grouped the 8 months into three periods (I, II and III) and classified the 11 sampling sites into two groups (I and II) based on similarities of water quality characteristics. The temporal pattern shows that April has higher pollution level relative to the other months. Spatially, sampling site 7 (S7) has lower pollution level while the other sampling sites have higher pollution level. Thus, this study shows usefulness of cluster analysis method for analyzing and interpreting of surface water dataset to assess the temporal and spatial variations in the water quality parameters and the optimization of regional water quality sampling network.

KEYWORDS

Cluster Analysis; Surface Water; Euphrates River; Iraq

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