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Spatial and temporal variations of river water quality using multivariate statistical techniques

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Abstract The assessment of temporal/spatial variability and the interpretation of large and complex datasets of water quality were performed using multivariate statistical techniques such as cluster analysis (CA) and factor analysis (FA). Water quality of the Nerus River for 27 parameters was monitored at eight sampling stations. Three different similarity groups between sampling sites that reflected different water quality parameters were identified by the CA, while the FA/principal component analysis has determined nine factors responsible for the data structure that account for 82.24% of the total variance of the dataset. 14 parameters are needed to explain 82.24% of water quality changes for both temporal and spatial, hence the significant data reduction was not achieved. The findings suggested the compulsion and effectiveness of environmental techniques for interpretation of large datasets are targeting to gain information about water quality using temporal and spatial characterizations at the designated water monitoring stations in the river.

Keywords **Author Keywords:** [Spatial and temporal assessment](#); [Water quality](#); [River water](#); [Nerus River basin](#); [Multivariate analysis](#)

Keywords Plus: [LAND-USE](#); [GROUNDWATER COMPOSITION](#); [PAHANG RIVER](#); [BASIN](#); [TERENGGANU](#); [POLLUTION](#); [PATTERNS](#); [CLASSIFICATION](#); [APPORTIONMENT](#); [EVOLUTION](#)

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