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Lake Water Monitoring Data Assessment by Multivariate Statistics

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ABSTRACT

The application of multivariate statistical methods to high mountain lakes monitoring data has offered some important conclusions about the importance of environmetric approaches in lake water quality assessment. Various methods like cluster analysis and principal components analysis were used for classification and projection of the data set from a big number of lakes from Pirin Mountain in Bulgaria. Additionally, self-organizing maps of Kohonen were constructed in order to solve some classification tasks. An effort was made to relate the maps with the input data in order to detect classification patterns in the data set. Thus, dis-crimination chemical parameters for each pattern (cluster) identified was found, which enables better inter-pretation of the ecological state of the system. A methodology for application of combination of different environmetric methods was suggested as a pathway to interpret high mountain lake waters monitoring data.

KEYWORDS

Lake Water, Chemometrics, Water Quality, Pollution

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