PRELIMINARY ANALYSIS ON THE RIVER DANUBE WATER QUALITY BY USING DIFFERENT KINDS OF METHODS

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Abstract: In Romania, the surface waters monitoring is carried out for most of the water quality indicators, according to the specific European Directives, generally once a month. The most important surface water in Romania is the Danube River, which is the second largest river in Europe. In this study, approximatively 30 chemical and physico-chemical indicators were monitored weekly for over a two-month period. The parameters were determined using different types of methods (volumetric, electrochemical, spectrophotometry, AAS).
The results obtained were subjected to a preliminary statistical study which included: t-Test, Pearson correlation and BoxPlot representation. Other statistical methods among which ANOVA, PCA, FA etc. will be applied later. Preliminary statistical methods have led to some expected results, but also to some surprising results. For some of the indicators (e.g., nutrients), it would be better if the monitoring were performed weekly rather than monthly as it is performed in the moment. This would help authorities intervene in time to identify the pollution event and, why not, the polluter.

Key words: surface water monitoring, statistical analysis