
SHC 13. ARTIFICIAL NEURAL NETWORKS FOR FORECAST OF THE AMOUNT OF HEAVY METAL

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Heavy metals are important environmental pollutants even at very low concentrations. The primary sources of this pollution are the burning of fossil fuels, the mining and smelting of metalliferous ores, municipal wastes, fertilizers, pesticides, and sewage. These sources of pollution lead to toxic metal contamination of soil, aqueous waste streams and groundwater which pose major environmental and health problems. Our country is in a critical region in terms of water resources. Thus, for the development and preservation of water resources it is important to conduct a lot of research. For the determination of the status of the water sources, long-term data collection from monitoring stations, management in a common database, and the creation of a national water quality monitoring network, are required. Also, for the prevention of the water pollution, reliable forecasting of the amount of heavy metal is of great importance.

In this study, an approach for the forecast of the heavy metal values is presented with - Artificial neural networks (ANN) which is a forecasting application used in various areas. The suggested approach based on ANN to determine the change in heavy metal values was applied at Ergene Basin Stations. By applying the heavy metal values for Ergene Basin Stations in 2012-2013 determined by The Ministry of Environment and Urban Planning, the forecast of the heavy metal pollution in the basin in 2018 and 2030 were made. This study proposes that ANN can be utilized for the forecasting of the the heavy metal values.

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