Environmental Engineering and Management Journal

November/December 2009, Vol. 8, No.6, 1421-1427
http://omicron.ch.tuiasi.ro/EEMJ/

"Gheorghe Asachi" Technical University of Iasi, Romania

MODELING AND SIMULATION OF QUALITY INDICATORS OF SURFACE WATER

Valerian Antohe*, Constantin Stanciu

"Dunărea de Jos" of Galati University, Faculty of Engineering Brăila, 29 Calea Călăraşilor, 800507 Brăila, Romania

Abstract

The efficient understanding and application of mathematical models in the study of environmental phenomena keep up with the latest results in the mathematical domain which could provide solutions for controlling, analyzing, predicting and study of risk phenomena. This paper presents a browsing through some mathematical categories of interpreting statistical data, examples and their analysis in connection with the degree of polluting the water down the Danube River with the help of quadratic interpolating functions spline and a reflection in other structure specialized in monitoring of environment. Water quality model usually consist of a set of mathematical expressions relating one or more water quality parameters. There is a connection between water temperature and the dissolved oxygen for example. Others parameters introduced like variables connected in an example of a mathematical function could design a water quality functional model during time series. It is assumed that Danube River water breathe like a living being. The way in which this process can be controlled using statistical data and also how we can predict, analyze, prevent the critical period, these are some goals for this review. Future investigation will be focused in many other connections between water quality parameters, and finding some numerical function which can describe a good prediction.

Key words: forecast, mathematical model, spline functions, the water quality

* Author to whom all correspondence should be addressed: e-mail: valerian_antohe@yahoo.com