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CONTRIBUTIONS TO THE IMPROVEMENT OF POLLUTION CONTROL IN LAKES AND AN APPLICATION FOR THE GOVORA LAKE

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Abstract

In this paper, the mathematical model is improved by considering the density variations of the liquid from the pollution source vs. pollutant's concentration of this liquid and by including the sorption-desorption term (SDT), which takes into account this physical process, played by a first-order decay model defined by two coefficients and an exponent. In order to practically use this improved mathematical model, the authors inferred the calculating relationships from automatic processing of monitored data during the process of pollution, so that to assess the three SDT function parameters and properly enhance the computer programming code **Storage_Lake_Zero.m**. Thus, at the resumption of the numerical simulation of the same real case of pollution, there was a significant improvement in line with the experimental concentration. Using the same numerical results for the SDT, different scenarios of chloride brine pollution in the Govora accumulation lake can be numerically simulated, with increased accuracy.

Key words: lake, numerical simulation, pollutant concentration, salts pollution

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