NUMERICAL MODELING TO CHANGE THE GROUND WATER LEVEL THE WATER AREA

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ABSTRACT

An urgent problem related to the process of changing the level of ground and pressure water is solved in the article; the problem is described by a system of partial differential equations and various corresponding initial, internal and boundary conditions. To derive a mathematical model of the process under consideration, a detailed review of scientific papers devoted to various aspects and mathematical support of the object of study is given. To conduct a comprehensive study of the process of filtering and changing the salt regime in groundwater, a mathematical model and an effective numerical algorithm are proposed taking into account external sources and evaporation. Since the process is described by a nonlinear system of partial differential equations, it is difficult to obtain an analytical solution. To solve it, a numerical algorithm based on a finite-difference scheme is developed, and an iterative scheme is used for nonlinear terms, which checks the convergence of iterative method.

KEYWORDS: *Mathematical Model, Numerical Algorithm, Groundwater, Ground And Pressure Water, Soil.*

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