

# Stabilization of Solution and Discrete Analogs for One Nonlinear Integro-Differential Equation Based on Maxwell System

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One nonlinear partial integro-differential equation is considered. The model arises in mathematical simulation of electromagnetic field penetration into a substance electro-conductivity of which essentially depends on temperature. Initial-boundary value problem with Dirichlet boundary conditions is considered. Large time behavior of solution is studied. Rate of stabilization is given. Stabilization and convergence of discrete analogs are proven. Wider classes of nonlinearity are investigated than one has been studied earlier. Various numerical experiments are carried out. Results of numerical experiments with the corresponding graphical illustrations are given.