On Linear Stability of the Steady State Solution and Numerical Approximation for a Nonlinear Partial Differential System

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The linear stability of the steady state solution of one nonlinear partial differential system is considered. Possibility of Hopf type bifurcation is observed. The algorithm of approximation solution for corresponding initial-boundary value problem is constructed. Its numerical realization is implemented, analysis of obtained results is carried out and graphical illustrations are given.