

**ON APPROXIMATE SOLUTION OF THE ALGORITHMS AND NUMERICAL
COMPUTATIONS FOR SOME KIRCHHOFF TYPE
NONLINEAR INTEGRO-DIFFERENTIATION EQUATIONS**

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In the present paper we consider approximate solution issues for following two problems:

1. Nonlinear boundary value problem for the Kirchhoff type static beam. The problem is reduced by means of Green's function to a nonlinear integral equation. To solve this problem we use the Picard type iterative method.

2. Nonlinear initial-boundary value problem for the J. Ball dynamic beam. Solution of problem is founded by means of an algorithm, the constituent parts of which are the Galerkin method, a symmetric difference scheme and Jacobi iterative method.

For both of these problems are constructed the new algorithms of approximate solutions and numerical experiments are executed. The results of calculations are presented by tables and diagrams.