

JACOBI NONLINEAR ITERATION METHOD FOR A DISCRETE
KIRCHHOFF SYSTEM

J. Peradze

Departments of Applied Mathematics and Computer Sciences
Tbilisi State University
380043 University Street 2, Tbilisi, Georgia

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Abstract

An initial boundary value problem for an integro-differential equation describing string vibration is considered. Using the Galerkin method and a Crank-Nicholson type scheme, the solution is discretized with respect to a spatial and a time variable. Thus the problem is reduced to a system of nonlinear algebraic equations which is solved by the iteration method. The convergence of the method is proved.

Key words and phrases: nonlinear equation, Kirchhoff string, iteration method, convergence.

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