NUMERICAL SOLUTION OF THE POSITIONAL BOUNDARY CONTROL PROBLEM FOR THE WAVE EQUATION WITH UNKNOWN INITIAL DATA

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The problem of one-sided boundary Neumann control is considered for the one-dimensional wave equation. Information about the initial state of the process is absent. Instead, the values of Dirichlet observations are received in real time at the controlled boundary. The aim is to bring the process to a complete rest by means of positional boundary controls. To solve this problem, we propose an efficient numerical algorithm with an optimal guaranteed damping time. Some results of numerical experiments are presented.

Keywords: wave equation, positional control problem, numerical solution.

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