On Stability Of Hyperbolic- Elliptic Differential Equations With Nonlocal Integral Condition

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Abstract

The nonlocal boundary value problem for a hyperbolic-elliptic equation

$$\begin{cases} u_{tt}(t) + Au(t) = f(t), & 0 \le t \le 1, \\ -u_{tt}(t) + Au(t) = g(t), & -1 \le t \le 0, \\ u(-1) = \int\limits_0^1 \alpha(s)u(s)ds + \psi, \, u(0) = \varphi. \end{cases}$$

in a Hilbert space H with the self-adjoint positive definite operator A is considered. The stability estimates for the solution of this problem are established.

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