

ON INVERSE PROBLEM FOR A CLASS OF FOURTH ORDER STRONGLY DAMPED NONLINEAR WAVE EQUATIONS

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Abstract

In this paper, we study the initial inverse problem for a class of fourth order strongly damped linear wave equations. In the beginning, we show that the problem is ill-posed in the sense of Hadamard. Next, we propose the method called: the Fourier truncation method for stabilizing the problem. Convergence estimates are established under a priori regularity assumptions on the problem data.

Key words: inverse problem, ill-posed problem, Fourier truncation method, regularization