

REGULARIZATION OF A 2-D STRONGLY DAMPED WAVE EQUATION WITH STATISTICAL DISCRETE DATA

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Abstract

In this work, we consider an inverse problem for a strongly damped wave equation in two-dimensional with statistical discrete data. The problem is severely ill-posed in the sense of Hadamard, i.e, the solution does not depend continuously on the data, therefore we shall use the trigonometric least squares method associated with the Fourier truncation method to regularize the unstable solution of the problem. Finally, the convergence rate is also investigated numerically.

Key words: Strongly damped wave equation, statistical inverse problems, ill-posed problems, regularization.