

论文

求解一般抛物方程侧边值问题的Fourier正则化方法

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摘要:

逆热传导问题是严重不适定问题,它的解如果存在,其解将不连续依赖于定解数据,使得数值计算和理论分析都非常困难。但目前关于逆热传导问题的已有文献大都主要集中于讨论由标准热传导方程所描述的问题。该文给出了一种适用于由一般一维抛物方程所描述的逆热传导问题且具有Holder连续性的Fourier正则化新方法。

关键词: 逆热传导问题; 不适定问题; 抛物方程侧边值问题; 正则化方法; Holder连续性

分类号:

A Fourier Regularization Method with Holder Stability for Solving a General Sideways Parabolic Equation

FU Chu-Li, QIU Chun-Yu, ZHAO Hua

Abstract:

Inverse heat conduction problems (IHCP) are severely illposed in the sense that the solution (if it exists) does not depend continuously on the data. But now the results available in literature on IHCP are mainly devoted to the standard sideways heat equation. This paper remedies this by a new Fourier regularization method with Holder stability for a general sideways parabolic equation.

Keywords: Inverse heat conduction problem; Illposed problem; Sideways parabolic equation; Regularization; Holder stability.

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