NUMERICAL SOLUTION TO A SIDEWAYS PARABOLIC EQUATION[1] [2]

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Abstract

The inverse heat conduction problem can be considered to be a sideways parabolic equation in the quarter plane. This is a model of a problem, where one wants to determine the temperature on both sides of a thick wall, but one side is inaccessible to measurements. A numerical procedure for this severely illposed problem is suggested, which consists in two steps namely a mollification of the data and a marching difference scheme. The numerical method is proved to be stable. Several computational results are presented and discussed.

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