ANALYSIS OF THE DISCRETE BECK METHOD SOLVING ILLPOSED PARABOLIC EQUATIONS [1]

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Abstract

A matrix formulation of the Beck method solving the Inverse Heat Conduction Problem is developed. A classical approach using maximum principles is applied in order to obtain stability estimates for the sequential procedure approximating the surface heat fluxes. On the basis of our estimates, a stronger form of the classical Courant–Friedrichs–Lewy condition ensures stability in a certain weak sense. Finally, numerical results are presented and discussed in view of the stability condition.

[1] Inverse Problems **10**(1994), 1–16