A generalization of Beck's method for Inverse Heat Conduction Problems

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Abstract

A finite dimensional variational approach for Inverse Heat Conduction problems is studied. By means of the gradients and the Hessian of the minimizing functional, the unknown heat flux in form of a step function is characterized as the solution of a linear system of equations. In special cases, one obtains the well-known Beck method and a generalization thereof. The latter allows the determination of an optimal number of future times.

Keywords:

Inverse Heat Conduction problems, variational approach, finite dimensional approximation, Beck's methods

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