FMSP

FMSP Lectures

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Recovering time-dependent inclusion in heat conductive bodies by a dynamical probe method

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Abstract:

  Many articles solve a version of the Calder'on inverse problem for the heat equation. The biggest part of them assume that the unknown conductivity do not depend on time t. But they are very few results concerning the time de- pendent situation, and they are based on the computation of an ansatz for the parabolic equation:

- A reconstruction method of an unknown moving inclusion by a dynamical probe method was performed by Daido-Kang-Nakamura in 2007, but it works for the one dimensional spatial space only,

- An energy estimate for x-multidimensional convex inclusions.

In the talk I will present a dynamical probe method based on special fundamental solutions of the heat equation and basic inequalities :

this approach is very close to the probe method for the elliptic Calderon inverse problem, and does not require regularity of the inclusion.