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Abstracts of Short Communications and Posters

Section:

10. Partial Differential Equations

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Lizabeth Rachele, Purdue University, USA
Inverse Problems for Elastic Media
We consider the unique determination of the material properties of bounded, nonhomogeneous elastic objects from measurements made at the surface. The behavior of the object is modeled by solutions of hyperbolic systems of equations for elastodynamics. Surface measurements are modeled by the Dirichlet-to-Neumann map on a finite time interval.
This problem and techniques used in its study are closely related to those in, for example, seismology and medical imaging. The techniques used here, though, (from geometric optics, integral geometry, and microlocal analysis) result in the solution of a fully three-dimensional problem.