

ACMS Applied Math Seminar

Ngoc Thanh Do
Missouri State University
Thursday, October 10, 2019
154 Hurley Hall
3:30 - 4:30 pm



Theoretically Exact Solution of the Inverse Source Problem for the Wave Equation with Spatially and Temporally Reduced Data

The inverse source problem for the wave equation arises in several promising emerging modalities of medical imaging. Of special interest here are theoretically exact inversion formulas, explicitly expressing solution of the problem in terms of the measured data. Almost all known formulas of this type require data to be measured on a closed surface completely surrounding the object. This, however, is too restrictive for practical applications. I will present an alternative approach that, under certain restriction on geometry, yields explicit, theoretically exact reconstruction from the data measured on a finite open surface. Numerical simulations illustrating the work of the method will be presented.

This is joint work Leonid Kunyansky. The talk is accessible for graduate students.

The Department of Applied and Computational
Mathematics and Statistics

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