



Partial Differential Equations and Applied Mathematics Seminar

Determining the shape of a flat scattering screen with one measurement

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I will describe my results with Päivärinta and Sadique from 2020. We consider the problem of fixed frequency acoustic scattering from a sound-soft flat screen: a single incident wave interacts with an unknown flat obstacle (a subset of a two-dimensional plane) to produce a scattered wave. The far-field pattern of this wave uniquely determines the shape of the screen. Compared to earlier work by Alves and Ha-Duong from 1997, we have generalized the method to work with arbitrary incident waves. We characterize exactly when the incident wave gives unique determination, and why it is impossible in other cases.

Friday, June 7th, 2024 at 2:00 PM

Korman Center, Room 245

www.math.drexel.edu/~cf823/pde_seminar/index.html

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