Mathematics and CS Seminar

PDE Afternoon: Uniqueness, stability and single measurement recovery for the fractional Calderón problem

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Host: Jan Maas

In this talk I discuss a nonlocal inverse problem, the fractional Calderón problem. This is an inverse problem for a fractional Schrdinger equation in which one seeks to recover information on an unknown potential by exterior measurements. In the talk, I prove uniqueness and stability of the "infinite data problem"and then address the recovery question. This also yields (at firstsight) surprising insights on the uniqueness properties of the inverse problem in that it turns out that a single measurement suffices to uniquely recover the potential.These properties are based on the very strong unique continuation and approximation properties of fractional Schrdinger operators, which are of independent interest and which I also discuss in the talk.This is based on joint work with T. Ghosh, M. Salo and G. Uhlmann.

Wednesday, December 12, 2018 02:45pm - 03:45pm
Big Seminar room Ground floor / Office Bldg West (I21.EG.101)

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