Inverse problems for PDE with finite measurements

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Abstract

In this talk, I will discuss uniqueness, stability and reconstruction for infinite-dimensional nonlinear inverse problems with finite measurements, under the a priori assumption that the unknown lies in, or is well-approximated by, a finite-dimensional subspace or submanifold. The methods are based on the interplay of applied harmonic analysis, in particular sampling theory and compressed sensing, machine learning and the theory of inverse problems for partial differential equations. Several examples, including the Calderón problem and scattering, will be discussed.

References

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