

APPLIED MATHEMATICS COLLOQUIUM

Sparse Recovery Beyond Compressed Sensing

Carlos Fernandez-Granda

(Courant Institute and Center for Data Science, NYU)

Abstract: Recovering sparse signals from underdetermined linear measurements is a challenging problem. Deconvolution in reflection seismology and imaging, source localization in EEG, estimation of relaxation parameters in MRI, and direction-of-arrival estimation in radar can all be reformulated as sparse inverse problems. Convex-programming methods based on ℓ_1 -norm minimization are widely applied to tackle such problems in practice, but current theoretical guarantees are mostly focused on randomized measurement operators that are not relevant to these applications. In this talk, we present a theoretical framework to analyze these methods for realistic deterministic operators, which yields exact-recovery guarantees under certain conditions on the signal support that are related to the correlation structure of the linear operator.

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4:15PM

MIT, Room 4-237

Applied Math Colloquium: <https://math.mit.edu/seminars/amc/spring18/>
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Massachusetts Institute of Technology
Department of Mathematics
Cambridge, MA 02139



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