CORE CENTER FOR OPERATIONS RESEARCH AND ECONOMETRICS

Université catholique de Louvain **UCL**

CORE-ECORE
MATHEMATICAL PROGRAMMING SEMINAR

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University of Edinburgh

Quantitative recovery guarantees of nonconvex algorithms for compressed sensing problems

Abstract. We describe how to use phase transitions as a suitable framework for comparison of compressed sensing algorithms for certain random matrix ensembles, and how to quantify in this framework state-of-the-art worst-case recovery results that rely on restricted isometry properties for some well-known algorithms such as l_1 relaxation and iterative hard thresholding algorithms. For the latter algorithms, that solve by gradient projection the nonconvex nonsmooth l_0 problem, we then present a novel average-case analysis that gives substantially improved phase transitions.
(This work is joint with J Blanchard , J Tanner and A Thompson).

The seminar will take place on
Thursday, **December 13, 2012** at **4:30p.m**
CORE, Room b_135, 34 voie du Roman Pays – 1348 Louvain-la-Neuve
http://www.uclouvain.be/en-44416.html