

THE UNIVERSITY



OF HONG KONG

Department of Mathematics

COLLOQUIUM

Fast Low Rank Reconstruction via Nonconvex Optimization: Algorithms, Theory and Applications

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Abstract

Low rank models exist in many applications, ranging from signal processing to data analysis. Typical examples include low rank matrix completion and spectrally sparse signal reconstruction. We will present a class of computationally efficient algorithms that are universally applicable for different low rank reconstruction problems. The algorithms are developed by exploiting the low dimensional structure of low rank matrix manifold. Theoretical recovery guarantees will be presented for the proposed algorithms under certain random models, showing that the sampling complexity is essentially proportional to the intrinsic dimension of the problems rather than the ambient dimension. Extensive numerical experiments demonstrate the efficacy of the algorithms and extensions to phase retrieval and low rank matrices demixing will be briefly discussed.

Date: March 8, 2018 (Thursday)

Time: 12:00noon - 1:00pm

Venue: Room 210, Run Run Shaw Bldg., HKU

All are welcome