For favour of Posting

THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

PHD STUDENT SEMINAR

Fast Algorithms for Spectrally Sparse Signal Reconstruction

By

Miss Xueyang QUAN

Abstract

Spectrally sparse signals are commonly encountered in various applications, such as inverse scattering, analog-to-digital conversion, and radar imaging. We're interested in recovering an *r*-spectrally sparse signal with or without dampness from the time-domain samples. One way is based on the Hankel matrix model, and we propose an efficient preconditioned fast iterative hard thresholding algorithm (PFIHT) to solve this. But all Hankel matrix models don't exploit the prior of undampedness case, so the Hankel-Teoplitz matrix factorization model is introduced. Although the Hankel-Toeplitz gradient descent algorithm (HT-GD) solves this problem well, we propose to speed up the convergence of it by using preconditioning techniques.

Date : 2 May 2024 (Thursday)

Time : 9:30am

Venue : Room 3598 (Lifts 27-28)

All are Welcome!