The Hong Kong Polytechnic University
Department of Applied Mathematics

Colloquium

Sub-linear Algorithm for Recovering Sparse Fourier Series

by

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Abstract

We present new deterministic algorithms for the sparse Fourier transform problem, in which we seek to identify $k \leq N$ significant Fourier coefficients from a signal of bandwidth N. Previous deterministic algorithms exhibit quadratic runtime scaling, while our algorithms scales linearly with k in the average case in the noiseless setting. We also present a multi-scale algorithm for noisy signals which proves to be extremely robust and efficient. This multi-scale algorithm is based on the beta-expansion scheme for robust A/D conversion. We also present the first efficient algorithm for ultra-high dimensions signals.

Date :   16 February, 2016 (Tuesday)
Time :   2p.m. – 3:00p.m.
Venue : TU801, The Hong Kong Polytechnic University

* * *   ALL ARE WELCOME   * * *