

数学与系统科学研究院

计算数学所定期网络学术报告

报告人: 杨在 教授

(西安交通大学)

报告题目:

Geometry and recovery of spectral-sparse signals

邀请人: 刘亚锋 副研究员

报告时间: 2022年12月22日(周四)

下午 16:00-17:00

报告工具: 腾讯会议 (ID: 478-1365-3406)

会议链接:

<https://meeting.tencent.com/dm/3WoH5WwglOOj>

Abstract:

Spectral-sparse signals are those sparse in the Fourier domain and are very common in wireless communications, radar, sonar, medical imaging and other applications. Their recovery from noisy, limited measurements is a constantly important problem and has motivated the prominent research topic of compressed sensing. It is cast in state-of-the-art methods as low-rank structured (Hankel, Toeplitz) matrix recovery by applying Kronecker and Carathéodory-Fejér theorems. In this talk, we will introduce previous low-rank matrix recovery methods and point out their limitations from a geometric point of view. After that, we propose a new low-rank optimization method, which resolves the previous limitations, by studying the geometry of spectrally sparse signals. We demonstrate its effectiveness with a simple nonconvex algorithm. Finally, extensions and future research directions will be highlighted.

欢迎大家参加！