



Department of Mathematics
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Seminar

Computational 3D Imaging: Sparse Recovery and PSF Engineering

*Professor Robert Plemmons
Wake Forest University (Emeritus)*

Abstract

The goal of three dimensional (3D) imaging is to seek the complete structure of objects in our surroundings, which offers several computational challenges. Afterwards, we need to be able to extract information from objects in the image data such as distance from the imaging system, as well as other information such as brightness and shape that are essential in a wide range of applications. Here we overview recent work with several co-authors for 3D image data computations, including (1) a summary of recent methods to enable snapshot 3D imaging with optimization-based image recovery using trust-region algorithms for nonconvex sparse methods and (2) depth from defocus using point spread function (PSF) engineering with applications to microscopy and, especially, satellite debris tracking in space situational awareness. Co-authors include J. Erway, R. Marcia, S. Prasad, P. Pauca, and T. Torgersen.

Date : October 5, 2016 (Wednesday)
Time : 4:30p.m. – 5:30p.m.
Venue : C4, Lady Shaw Building,
The Chinese University of Hong Kong

All are Welcome