



香港浸會大學
HONG KONG BAPTIST UNIVERSITY

Department of Mathematics
Institute of Computational and Theoretical Studies
Statistics Research and Consultancy Centre

Distinguished Lecture Series

Robust Recovery and Detection of Structured Signals



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Editor of The Annals of Statistics, 2010-2012
Medallion Lecturer of Institute of Mathematical Statistics, 2009
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Date: 8 January 2015 (Thursday)

Time: 5:00 pm - 6:00 pm (Preceded by Reception at 4:30 pm)

Venue: 1/F Shiu Pong Hall, Ho Sin Hang Campus,
Hong Kong Baptist University

Abstract

A large collection of statistical methods has been developed for estimation and detection of structured signals in the Gaussian and sub-Gaussian settings. In this talk, we present a general approach to robust recovery and detection of structured signals for a wide range of noise distributions. We illustrate the technique with nonparametric regression and detecting and identifying sparse short segments hidden in an ultra long linear sequence of data. A key step is the development of a quantile coupling theorem that is used to connect our problem with a more familiar Gaussian setting. An application to copy number variation (CNV) analysis based on next generation sequencing (NGS) data is also discussed.

✦ ✦ ✦ **All are welcome** ✦ ✦ ✦

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