



The Hong Kong University of Science & Technology

Department of Mathematics

PhD Student Seminar

**Eigenvector Distribution for Spiked
Covariance Matrix**

by

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Abstract

In random matrix theory, one of the central topics is the limiting behavior of eigenvalues and eigenvectors of random matrices under fixed rank perturbations. A famous model, raised by Johnstone, is the so-called spiked covariance matrix model. It is a sample covariance matrix with population Σ which has all its eigenvalues equal to one except for a few eigenvalues (spikes). From the Principal Component Analysis (PCA) point of view, the main task is to study the limiting behavior of the top eigenvalues and eigenvectors of the spiked sample covariance matrix. In this talk, we will consider the high dimensional setting, namely both the sample size n and the dimension p are large. We identify the limiting distribution of the eigenvectors associated with the largest eigenvalues under fully general assumptions.

Date: Thursday, 2 May 2019

Time: 15:30 p.m. - 16:30 p.m.

***Venue: Room 4475, Academic Building
(near Lifts 25-26), HKUST***

All are welcome!