

Department of Mathematics  
City University of Hong Kong

## Colloquium

Organised by Prof. P. G. Ciarlet and Prof. F. Cucker

### Spectral Methods for Learning High Dimensional Data

by

Dr. Lorenzo Rosasco

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**Abstract** : Learning can be described as the problem of making inferences from (possibly small) samples of noisy, high dimensional data. In this talk we will discuss a class of learning techniques that draw on the study of spectral properties of suitably defined, data dependent matrices. Stability of the methods is typically achieved via spectral filtering, that is, discarding components corresponding to small eigenvalues. The efficiency of the approach can be proved using random matrix theory to study the concentration properties of the empirical matrices and their spectra. Numerical experiments support the theoretical findings.

Date : 13 January 2010 (Wednesday)  
Time : 4:30pm – 5:30pm  
Venue : Room B6605 (College Conference Room)  
Blue Zone, Level 6  
Academic Building  
City University of Hong Kong

(Tea, coffee and cookies will be provided at the Faculty Conference Room in B6605 before the colloquium from 4:00 to 4:30pm. Please come and join us.)

**\*\* All interested are welcome \*\***

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