

Department of Mathematics  
City University of Hong Kong

## Colloquium

Organised by Dr Weifeng QIU and Dr Xianpeng HU

### Smoothing spline mixed-effects density models for clustered data

By

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#### ***Abstract:***

Smoothing spline mixed-effects density models are proposed for the nonparametric estimation of density and conditional density functions with clustered data. The random effects in a density model introduce within-cluster correlation and allow us to borrow strength across clusters by shrinking cluster specific density function to the population average, where the amount of shrinkage is decided automatically by data. Estimation is carried out using the penalized likelihood and computed using a Markov chain Monte Carlo stochastic approximation algorithm. We apply our methods to investigate evolution of hemoglobin density functions over time in response to guideline changes on anemia management for dialysis patients.

**Date:** 26 February 2019 (Tuesday)  
**Time:** 4:30 – 5:30pm  
**Venue:** 2310, Li Dak Sum Yip Yio Chin Academic Building (LI)  
City University of Hong Kong

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