

*For favour of posting*

DEPARTMENT OF STATISTICS AND ACTUARIAL SCIENCE  
THE UNIVERSITY OF HONG KONG

Seminar

**Dr. Jianhui ZHOU**

Department of Statistics  
University of Virginia  
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will give a talk

entitled

**FUNCTIONAL LINEAR MODEL WITH  
ZERO-VALUE COEFFICIENT FUNCTION  
AT SUB-REGION**

Abstract

We propose a shrinkage method to estimate the coefficient function in a functional linear regression model when the value of the coefficient function is zero at certain sub-region. The primary goal is to perform inferences for the nonparametric estimate of the coefficient function and to identify the null region in which the function is zero. Our proposal consists of two stages. In stage one, Dantzig selector is employed to provide initial location of the null region. In stage two, we propose to use a group SCAD approach to refine the estimated location of the null region and to provide the estimate and inference procedures for the coefficient function. We would point out that our grouping consideration has certain advantageous contributions in this functional setup. Theoretically, we show that our estimator enjoys the desired Oracle property; it identifies the null region with probability tending to 1, and it achieves asymptotic normality for the estimated coefficient function on the non-null region, as in the regular functional linear model estimation. Numerically, we found that the initial Dantzig estimator tends to conclude more areas being null than it should. Real data motivated simulation study is conducted to show the performance of the proposed method.

on

**Tuesday, December 16, 2008**

**11:00 a.m. – 12:00 noon**

at

**Room 524, Meng Wah Complex  
(behind the Chong Yuet Ming Amenities Centre)**

**Visitors Please Note that the University has limited parking space. If you are driving please call the Department at 2859 2466 for parking arrangement.**

All interested are welcome