DEPARTMENT OF STATISTICS AND ACTUARIAL SCIENCE
THE UNIVERSITY OF HONG KONG

Departmental Seminar

Professor Chengyong TANG

Department of Statistical Science
Fox School of Business and Management
Temple University
USA

will give a talk
entitled

HIGH-DIMENSIONAL STATISTICAL INFERENCES WITH OVER-IDENTIFICATION

Abstract

High-dimensional statistical inferences with general estimating equations are challenging and remain less explored. In this study, we attempt to solve two such problems with empirical likelihood (EL). The first one concerns statistical inferences associated with multiple components of the high-dimensional model parameter, and the second one is on developing a statistical test for assessing the validity of the model specification with general estimating equations in the high-dimensional setting. For the first problem, we propose to construct a new set of estimating equations such that the impact from estimating the high-dimensional nuisance parameter becomes asymptotically negligible. Based on the new construction, we then estimate the confidence region by the EL ratio. For the second problem, we propose a test statistic as the maximum of the marginal EL ratios respectively calculated based on individual components of the high-dimensional estimating equations. Our theoretical analysis establishes the validity of the proposed procedures, accommodating exponentially growing data dimensionality and over-identification, and the numerical examples demonstrate promising performance and potential practical benefits of our proposed methods.

on

Monday, May 6, 2019

(Refreshments will be served from 10:45 a.m. <u>outside Room 301 Run Run Shaw Building</u>)

11:00 a.m. – 12:00 noon

at

Room 301, Run Run Shaw Building

<u>Visitors Please Note</u> that the University has limited parking space. If you are driving please call the Department at 3917 2466 for parking arrangement.

All interested are welcome