

For favour of posting

DEPARTMENT OF STATISTICS AND ACTUARIAL SCIENCE
THE UNIVERSITY OF HONG KONG

Seminar

Professor Qiwei YAO

Department of Statistics
London School of Economics
U.K.

will give a talk

entitled

**ESTIMATION OF EXTREME QUANTILES FOR
FUNCTIONS OF DEPENDENT RANDOM VARIABLES**

Abstract

Motivated by a concrete risk management problem in financial industry, we propose a new method for estimating the extreme quantiles for a function of several dependent random variables. In contrast to the conventional approach based on extreme value theory, we do not impose the condition that the tail of the underlying distribution admits an approximate parametric form, and, furthermore, our estimation makes use of the full observed data. The proposed method is semiparametric as no parametric forms are assumed on all the marginal distributions. But we select appropriate bivariate copulas to model the joint dependence structure by taking the advantage of the recent development in constructing large dimensional vine copulas. Consequently a sample quantile resulted from a large bootstrap sample drawn from the fitted joint distribution is taken as the estimates for the extreme quantile. This estimator is proved to be consistent as long as the quantile to be estimated is not too extreme. The reliable and robust performance of the proposed method is further illustrated by simulation.

on

Wednesday, June 8, 2016

(Refreshments will be served from 2:15 p.m. outside Room 301 Run Run Shaw Building)

2:30 p.m. – 3:30 p.m.

at

Room 301, Run Run Shaw Building

Visitors Please Note 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