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DEPARTMENT OF STATISTICS AND ACTUARIAL SCIENCE
THE UNIVERSITY OF HONG KONG

Seminar

Professor Xian ZHOU

Department of Applied Finance and Actuarial Studies
Macquarie University
Sydney, Australia

will give a talk

entitled

A NEW CREDIBILITY ESTIMATION OF DISTRIBUTION FUNCTIONS WITH APPLICATIONS TO EXPERIENCE RATING IN GENERAL INSURANCE

Abstract

This work presents a new credibility estimation of the probability distributions of risks under Bayes settings in a completely nonparametric framework without any assumption on the prior distribution. We further show the applications of the method in general insurance premium pricing, a procedure commonly known as *experience rating*, which utilizes the insured's claim experience to calculate a proper premium under a given premium principle (referred to as a *risk measure*). Since our method estimates the probability distributions of losses, not just the means and variances, it provides a unified nonparametric framework to experience rating for arbitrary *premium principles*. This encompasses the advantages of the well-known approaches introduced by Bühlmann and Ferguson, while overcomes their drawbacks.

We establish an empirical Bayes method by considering loss distributions as a stochastic process, which is shown to be asymptotically optimal. The performance of our estimates in comparison with traditional methods is also evaluated through theoretical analysis and numerical studies. The premium estimates produced by our approach are shown to be close to the optima that are only available under specific model assumptions.

on

Wednesday, December 7, 2011

2:00 p.m. – 3:00 p.m.

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