40th SAAS HKU anniversary
統計及精算學系

For favour of posting

DEPARTMENT OF STATISTICS AND ACTUARIAL SCIENCE
THE UNIVERSITY OF HONG KONG

## 40th Anniversary Seminar Series


**Professor Michael TAKSAR**

*Department of Mathematics*
*University of Missouri*
*USA*


will give a talk

entitled

# REGULAR-IMPULSE STOCHASTIC CONTROL IN FINANCIAL/INSURANCE OPTIMIZATION MODELS


Abstract

We consider a dividend optimization model for an insurance company. The company can control the risk by applying the excess-of-loss reinsurance scheme. The payment of dividends is subject to taxation at the rate of (1-k) and in addition each time the dividends are paid out, a set-up cost of K is incurred. The objective is to maximize the present value of the discounted dividends payments until the time of bankruptcy. An additional feature of this model is a presence of liability payments which the company has to pay at a constant rate no matter what. (Some other models like the ones with noncheap reinsurance can be reduced to the model with the constant liability).

This becomes a regular-impulse stochastic control problem. We show how to solve it explicitly and describe the optimal policy. There is a rather interesting dependence of the structure of the optimal policy on the parameters of the system, in particular on K and the liability rate. In the case when the set-up cost is too high the problem can be reduced to the optimal stopping problem similar to the one which appears in the American option pricing model.


on

**Wednesday, August 7, 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