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DEPARTMENT OF STATISTICS AND ACTUARIAL SCIENCE
THE UNIVERSITY OF HONG KONG

STAT6003 Research Postgraduate Seminar

Mr. WONG Tsun Yu Jeff

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will give a talk

entitled

**ON THE TIME VALUE OF PARISIAN RUIN TIME
IN (DUAL) RENEWAL RISK MODEL**

Abstract

In ruin theory, one of the most interested problems is to study how long a line of business can run without facing a solvency problem. A business is said to be ruined once there are any financial issues as reflected by the surplus level of the business such that it can no longer be sustained. The survival time of the business is termed "ruin time" in the context of ruin theory.

According to the traditional definition, ruin is declared right away when the business is facing a negative surplus. However, such definition on ruin tends to ignore the potential profitability of the business should it survive the negative surplus. This issue is handled by a recent concept called Parisian ruin, with the corresponding survival time of the business termed "Parisian ruin time". Under such Parisian concept, a business is only declared ruin should the surplus level stays negative continuously for a prescribed length of time. The interpretation would be that a business is still regarded running normally should it recover from the negative surplus quick enough.

In the context of compound Poisson risk model, Dassios and Wu (2008) analyzed the problem by studying the Laplace transform to the Parisian ruin time under exponential claims. However, little has been done in a more general framework, not to mention the scarce study in a dual model setting. Motivated by Dassios and Wu (2008), the Parisian ruin time will be studied in both the renewal risk model and the dual renewal risk model in this talk. It turns out that under a mild distributional assumption that either the inter arrival time or the claim size is exponential (while keeping the other arbitrary), the introduction of appropriate excursions, together with the consideration of appropriate ruin quantities to the reflected path, is crucial to the analysis. Expressions for the Laplace transform to the Parisian ruin time will be derived. Numerical examples will also be performed at the end to justify the accuracy of the results.

Reference:

Dassios, A. and Wu, S. 2008. Parisian ruin with exponential claims. Preprint available at <http://stats.lse.ac.uk/angelos/docs/exponentialjump.pdf>.

on

Friday, May 23, 2014

2:30 p.m. – 3:30 p.m.

at

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

All interested are welcome