On the joint analysis of the discounted total payments to policyholders and shareholders

Eric C.K. CHEUNG[1], Haibo LIU[2], Jae-Kyung WOO[3]

[1]*Department of Statistics and Actuarial Science, University of Hong Kong, Pokfulam, Hong Kong (Email: eckc@hku.hk, Phone: (852)3917-8315)*
[2]*Department of Statistics and Actuarial Science, University of Hong Kong, Pokfulam, Hong Kong (Email: h0923502@hku.hk)*
[3]*Department of Statistics and Actuarial Science, University of Hong Kong, Pokfulam, Hong Kong (Email: jkwoo@hku.hk)*

Speaker: Eric C.K. CHEUNG

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Abstract

In this talk, we propose a generalization of the Gerber-Shiu expected discounted penalty function, which allows us to analyze jointly the discounted aggregate claim amounts until ruin and the discounted total dividends until ruin. These two quantities are of great importance as they respectively represent the insurer's payments to its policyholders and shareholders, but in the literature they are often studied separately. Some exact results for the generalized Gerber-Shiu function are discussed. Numerical examples involving the covariances between any two of (i) the discounted aggregate claims until ruin; (ii) the discounted dividend payments until ruin; and (iii) the time of ruin are presented along with some interpretations.