The Hong Kong Polytechnic University
Department of Applied Mathematics

Seminar

Reinsurance Games with Two Reinsurers

By

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Abstract

This paper studies reinsurance contracting and competition in a continuous-time model with ambiguity. The market consists of one insurer and two reinsurers, who apply the expected-value premium principle and the variance premium principle to price reinsurance contracts, respectively. The reinsurance contracting problems between the insurer and reinsurers are resolved by Stackelberg differential games, and the reinsurance competition between two reinsurers is settled by a non-cooperative Nash game. We obtain the closed-form equilibrium strategies for all three players under both a tree structure and a chain structure. A detailed comparison study reveals that the tree structure is preferred to the chain structure from a social planner's perspective, and the tree structure is generally preferred from the insurer's perspective.

This talk is based on a series of joint works with Jingyi Cao (York), Dongchen Li (Brock), and Virginia Young (Michigan).

Biography

Dr. Zou is an assistant professor in the Department of Mathematics at the University of Connecticut (UConn). Prior to joining UConn in Fall 2017, he was an acting assistant professor at the University of Washington and a TUFF Fellow at the Technical University of Munich (Germany). He obtained his PhD from the University of Alberta (Canada) in 2015, with specialization in Mathematical Finance. His main research areas are stochastic control with applications in actuarial and financial mathematics, and recent interests include cryptocurrencies, sports betting, and predictive analytics. For more information about his research, please visit his website https://sites.google.com/site/zoubin019/.

Date: 6 April 2023 (Thursday)
Time: 10:30-11:30 (Hong Kong Standard Time GMT +8)
Venue: TU101
Speaker: Dr. Bin Zou, University of Connecticut
Host: Dr. Zuoquan Xu, The Hong Kong Polytechnic University

*** * * ALL ARE WELCOME * * ***