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DEPARTMENT OF STATISTICS AND ACTUARIAL SCIENCE
THE UNIVERSITY OF HONG KONG

Public Seminar of PhD Candidate

Ms. RONG Yian

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will give a talk

entitled

APPLICATIONS OF COMONOTONICITY IN RISK-SHARING AND OPTIMAL ALLOCATION

Abstract

Comonotonicity is very often mistaken as a dependence structure that is too extreme and unrealistic. However, it is shown that the concept of comonotonicity is actually a helpful tool for solving several research and practical problems in capital allocation, risk sharing and optimal allocation. A general optimization problem of minimizing separable convex function with a linear constraint and box constraints is studied. A new approach of solving this constrained minimization problem explicitly by using the concept of comonotonicity instead of the traditional Kuhn-Tucker theory is introduced. The Key step of this new approach is to express each convex function as the expected stop-loss of some suitable random variable. Some qualitative properties of the solution and results in convex analysis with infimum-convolution are derived as well. The classical Pareto optimal risk-sharing problem is then revisited. By applying the standard machinery of the theory of comonotonicity, the optimal solutions are derived and Borch's theorem is recovered. The advantage of this new approach is that it can accommodate positivity constraint easily, which would otherwise lead to complicated analysis using the traditional Kuhn-Tucker theory.

on

Tuesday, September 23, 2014

2:00 p.m. – 3:00 p.m.

at

Room 301, Run Run Shaw Building

Visitors Please Note that the University has limited parking space. If you are driving please call the Department at 3917 2466 for parking arrangement.

All interested are welcome