



DEPARTMENT OF APPLIED MATHEMATICS

應 用 數 學 系

**The Hong Kong Polytechnic University
Department of Applied Mathematics**

Colloquium

Risk Allocation and Systemic Risk

by

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Abstract

The financial 2007/2008 crisis revealed that too few attention was paid to a sound risk and uncertainty management in particular in its systemic dimension. In this work, we present a risk measure designed to address the global and intrinsic risk of multidimensional interconnected system such as banks or counterparty risk in a central clearing house. The goal is two fold: on the one hand, it provides the total amount of liquidity that has to be reserved for the system to overcome financial stress situations. On the other hand, and foremost it addresses the respective amount that each member has to reserve in function of their exposure to the whole system and the systemic risk they put on the system. The analysis of the risk allocation brings some insight on the nature of the systemic risk by pointing out the elements in the financial system that are systemically relevant. We finally address the quantitative aspects by presenting how these high dimensional computations can be solved in an efficient manner using Chebyshev interpolations and Monte-Carlo/Fourier Methods. Joint Work with Yannick Armenti, Stephane Crepey and Antonis Papapantoleon, in cooperation with LCH Clearenet S.A.

Date : 9 January, 2017 (Monday)

Time : 3:00p.m. – 4:00p.m.

Venue : TU801, The Hong Kong Polytechnic University

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