



DEPARTMENT OF APPLIED MATHEMATICS

應 用 數 學 系

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

Colloquium

**A predictor of systemic risk and particle systems interacting through
hitting times**

by

**Professor Mykhaylo Shkolnikov
Princeton University**

Abstract

We propose an interacting particle system model for the mutual exposures of banks. In the model banks may default, possibly triggering cascades of defaults of other banks. When the aggregate losses from default cascades are so large that they force a jump in the appropriate limiting system of banks, we speak of a systemic event (providing the first truly endogenous definition for the latter). Our main results show that, when the number of banks is large, the relative asset value profile of banks that are close to failure can be used as a predictor of systemic events. This is joint work with Sergey Nadtochiy, University of Michigan.

Date : 4 January, 2018 (Thursday)

Time : 11:00a.m. – 12:00noon

Venue : Y404, The Hong Kong Polytechnic University

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