

**MACQUARIE UNIVERSITY
DEPARTMENT OF MATHEMATICS AND STATISTICS
STATISTICS SEMINAR SERIES**

Speaker: Professor Ken Siu, Department of Actuarial Studies and Business Analytics, Macquarie University

Date: Tuesday 4 September 2018, Time 1-2pm

Venue: Room 264, 14 Sir Christopher Ondaatje Ave

Title: Option Pricing with Market Frictions and Regime Switching

Abstract:

Market frictional costs prevail in financial markets and play a significant role in asset pricing as well as other important areas in economics and finance. In this talk, I shall discuss a modelling framework, which aims to integrate the impacts of three fundamental features including market frictional costs, regime switches and ambiguity on option prices. The ask and bid prices of a European option in such incomplete market are characterized as solutions of coupled nonlinear partial differential equations. An approach based on the minimization of a relative entropy is used to determine a fair value between the ask and bid prices. A simple closed-form solution to the minimization problem is obtained, which indicates that the fair value does not price the regime-switching risk in the presence of market frictions. Numerical experiments on the model are conducted. The numerical results indicate the significance of incorporating market frictional costs in option valuation under the regime-switching environment.

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