THE UNIVERSITY OF CHICAGO

Department of Statistics

DISSERTATION PRESENTATION AND DEFENSE

RUMING WANG

Department of Statistics
The University of Chicago

THREE ESSAYS IN MATHEMATICAL FINANCE

WEDNESDAY, April 1, 2015, at 2:00 PM
Eckhart 110, 5734 S. University Avenue

ABSTRACT

This dissertation uses mathematical techniques to solve three problems in mathematical finance. The first two problems are on model-independent pricing and hedging of financial derivatives. We use asymptotic expansions to express derivative prices and implied volatilities. Then just by using the first few terms in the expansions, we get simple and accurate formulas, which can also help us find connections between different products. The last problem is on optimal trading strategies in a limit order book. Under a very general setup, we solve explicitly for a dynamic decision problem involving choosing between limit order and market order.

For information about building access for persons with disabilities, please contact Laura Rigazzi at 773.702-0541 or send an email to lrigazzi@galton.uchicago.edu. If you wish to subscribe to our email list, please visit the following web site: https://lists.uchicago.edu/web/arc/statseminars.