

Kostya Borovkov, The University of Melbourne

On Limit Order Books Modelling

Abstract

A limit order book is a record of currently existing buy and sell orders for shares of a particular stock at a stock exchange. Mathematical modelling of the evolution of such records is of practical interest and is an interesting popular topic in modern applied probability theory.

We present some results of the empirical data analysis of the evolution of a real-life limit order book, for major company whose stock is traded at the Australian stock exchange (after preprocessing, the data included about 22 million limit and market orders placed over a year). Taking into account these findings, we construct “zero intelligence” Markovian models for the dynamics of limit order books and study their dynamics. In particular, we address the questions about ergodicity of the proposed models and the stock price evolution induced by the models dynamics. [Joint work with Justin Smallwood.]