LONG-TERM BEHAVIOR OF A STOCHASTIC MODEL FOR ORDER BOOK DYNAMICS

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Abstract

We propose a stochastic model for the continuous-time dynamics of a limit order book. The model strikes a balance between two desirable features: it captures key empirical properties of order book dynamics and its analytical tractability allows for fast computation of various quantities of interest without resorting to simulation. We compare empirically observed long-term behavior (e.g. unconditional properties) of the order book to simulations of the fitted model they indicate how well the model reproduces the average properties of the order book.