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Stochastic Stefan-type Problems and Order Book Dynamics

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Moving boundary problems allow to model macroscopic systems with phase transition at an inner boundary. Motivated by problems in economics and finance, more explicitly price-time continuous modelling of the limit order book, we consider a stochastic and non-linear extension of the classical Stefan-problem in one space dimension. More precisely, the dynamics on buy and sell side in an electronic financial markets are modeled by respective second order stochastic partial differential equations which are separated by an inner interface: the mid-price. We discuss new results beyond existence theory, such as approximations of the solution.

Summary

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