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Brownian particle systems as models of large equity markets.

We will discuss some new developments in stochastic portfolio theory. More precisely, we will consider a new class of models for large equity markets, which are equally capable of explaining the macroscopic structure of the markets as the original first-order models of Fernholz and Karatzas; in addition, the new models also explain some of the microscopic properties of equity markets, such as the discrepancy between the leakage of capital at the top ranks and in the bulk of the market. In addition, we describe a method for the simulation of leakages within this framework via an approximation by discrete interacting particle systems. Based on joint work with Ioannis Karatzas and Soumik Pal. (Received September 17, 2012)