



Minisymposium 14 - Stochastische Marktmodelle

Utility maximization with partial information and further constraints

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We consider a multi-stock market model where prices satisfy a stochastic differential equation with instantaneous rates of return modeled as an unobserved stochastic process, e.g. a continuous time, finite state Markov chain. The investor wishes to maximize the expected utility of terminal wealth but for his investment decisions only the prices are available to him.

It is convenient to use continuous-time models to approximate the discrete-time trading on the market, since these models often allow us to derive optimal trading strategies quite explicitly, in this case by using HMM filtering results and Malliavin calculus. But in these models where the drift of the stock returns is not constant, the optimal strategy may lead to extreme long and short positions which can result in bankruptcy if we trade in discrete time only.

In this talk we compare different constraints and model reformulations which may lead to more stable strategies: E.g. using non-constant volatility models, Levy-noise, convex constraints (no short selling), or risk constraints like e.g. bounded shortfall risk.