

Seminário de sistemas dinâmicos e estocásticos

Departamento de Matemática - IMECC - UNICAMP

Utility maximization in pure-jump models driven by marked point processes and nonlinear wealth dynamics

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Resumo:

We explore martingale and convex duality techniques to study optimal investment strategies that maximize expected risk-averse utility from consumption and terminal wealth. We consider a pure-jump model driven by (multivariate) marked point processes in presence of margin requirements such as different interest rates for borrowing and lending. Margin requirements are modelled by adding in a margin payment function to the investors wealth equation which is nonlinear with respect to the portfolio proportion process. We give sufficient conditions for existence of optimal policies for agents with logarithmic and fractional power utility. We find closed-form solutions for the optimal value function in the case of pure-jump models with jump-size distributions modulated by a two-state Markov chain

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