

UNICAMP – IMECC
Departamento de Matemática

Seminário de Sistemas Dinâmicos e Estocásticos

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Título: Arbitrage and hedging in a non probabilistic framework
for financial mathematics

Data: Sexta-feira, 5 de novembro de 2010, 13h30min

Local: Sala 321 do IMECC

Resumo. After a brief review of the notions of arbitrage and hedging in probabilistic market models, we will describe the basic definitions and concepts of an alternative approach which starts with a set of trajectories without any probabilistic structure. The main technique we need is integration with respect to functions of finite quadratic variation, namely Follmer's analytical approach to stochastic integration. This approach allows to define non probabilistic (NP) market models and prove a main no arbitrage result for such models. We will provide applications of this result to several examples of NP market models, the examples cover continuous trajectories as well as trajectories with jumps. We will also remark how hedging is performed in such models. Finally, we provide applications of the no arbitrage in our NP models to probabilistic models which are not semi martingales, a setup not usually accessible by the classical risk neutral pricing methodology.

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