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Title : Utility maximization problem under model uncertainty including jumps

Abstract:

We study a problem of utility maximization under model uncertainty including jumps. The problem is formulated as a sup/inf, the supremum being over strategies and consumptions, and the infimum over a set of models. We characterize first the dynamic of the value process of our stochastic control problem as the unique solution of a generalized quadratic backward stochastic differential equation with jumps (in short BSDE) with non bounded final condition. Moreover, we study a comparison theorem and a regularity properties for these class of BSDE's, in order to solve the utility maximization problem over terminal wealth and consumptions. We characterize also the optimum consumption plan and wealth in terms of a backward-forward system which is derived from the maximum principle. The talk is based on joint work with Monique Jeanblanc and Armand Ngoupeyou (2009).