Optimal Stopping under Ambiguity

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Abstract

The talk will start with a discussion of risk measures and their role in the current financial crisis. We will take this as our motivation to study robust multiple prior models, with special focus on optimal stopping problems. We develop first the discrete time theory for optimal stopping with multiple priors. We then show our recent results for continuous time that are related to the theory of backward stochastic differential equations. In particular, we are able to derive a Partial differential equation (HJB equation) for the value function. We use this theory to solve some optimal stopping problems in Finance, including American Call, Shout, and Barrier options.