

March 22nd, 2021
Zoom Meeting
2:00 P.M. - 3:00 P.M.

Prof. Song Yao
(University of Pittsburgh)

Optimal Stopping with Expectation Constraints

Abstract: We analyze an optimal stopping problem with a series of inequality-type and equality-type expectation constraints in a general non-Markovian framework. We show that the optimal stopping problem with expectation constraints in a concrete probability setting is equivalent to the constrained problem in weak formulation (optimization over joint laws of stopping rules with Brownian motion and state dynamics on an enlarged canonical space). Thus the value of the optimal stopping problem with expectation constraints is independent of the specific probabilistic setting. Using a martingale-problem formulation, we make an equivalent characterization of the probability class in the weak formulation, which implies that the value function of the constrained optimal stopping problem is upper semi-analytic. Then we exploit a measurable selection argument to establish a dynamic programming principle (DPP) in the weak formulation for the value of the optimal stopping problem with expectation constraints, in which the conditional expected integrals of constraint functions act as additional states.

Zoom link:

Topic: USC Math Finance Colloquium

Time: Mar 22, 2021 02:00 PM Pacific Time (US and Canada)

Join Zoom Meeting

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