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Andrew L Papanicolaou* (andrew.papanicolaou@nyu.edu), 6 Metrotech Center RH519, Brooklyn, CA 11201. *Numerical Methods for Backward SDEs for Control with Partial Information.*

This talk considers a non-Markov control problem arising in a financial market where asset returns depend on unobserved factors. Latency of the factors requires the investor to maintain an up-to-date posterior distribution, which is a stochastic probability measure that is of infinite dimension. Infinite dimensionality of the posterior means this optimization problem involves conditioning on a state that cannot be differentiated in the traditional sense, and hence cannot be solved using HJB equations. This talk will show how the problem is analyzed and solved using backward stochastic differential equations (BSDEs), and present non-PDE-based algorithms for obtaining numerical solutions. In financial applications, this problem is relevant to managing portfolios of commodities ETFs where the pretext for uncertainty is the latency of convenience yields that affect ETF returns. (Received October 15, 2015)