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**Andrew Papanicolaou\*** (ap1345@nyu.edu), 12 Metrotech Center, Department of Finance and Risk Engineering, Brooklyn, NY 11201. *Nonlinear Filtering and Non-Markov Control in Financial Portfolio Optimization.*

Latent states are filtered from financial data using the Zakai equation. However the ensuing portfolio optimization problem is a non-Markov decision process because the posterior distribution of states is path dependent. There are a number of ways to solve this type of optimization, including backward stochastic differential equations (BSDEs) or through polynomial basis approximation. This talk explores these methods. (Received September 13, 2018)