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Gu Wang* (robuw@umich.edu) and **Erhan Bayraktar**. *Quantile Hedging in a Semi-Static Market with Model Uncertainty*.

With model uncertainty characterized by a convex, possibly non-dominated set of probability measures, the investor minimizes the cost of hedging a path dependent contingent claim with a given expected success ratio, in a discrete-time, semi-static market of stocks and options. We prove duality results that link the problem of quantile hedging to a randomized composite hypothesis test. By assuming a compact path space, an arbitrage-free discretization of the market is proposed as an approximation. The discretized market has a dominating measure, which enables us to calculate the quantile hedging price by applying the generalized Neyman-Pearson Lemma. Finally, the performance of the approximate hedging strategy in the original market and the convergence of the quantile hedging price are analyzed. (Received August 11, 2015)