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OPTIMAL PORTFOLIO IN A JUMP DIFFUSION DELAYED MARKET

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Abstract

It is known that martingales with respect to the filtration of a process with jump leading to market incompleteness. This property corresponds to the impossibility of 'replicating' an option by trading in the underlying asset. In this paper we study problem of finding optimal portfolio for option when the underlaying stock price follows the Stochastic Delay Differential Equation (SDDE) driven by jump process. We give a general expression for the hedging strategy which minimizes the variance of the hedging error, in terms of integral representations of the options involved.

Key Words : *Incomplete market, Equivalents martingale measure, Jump component, Optimal portfolio.*

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