Pricing the real option with regime-switching jump-diffusion models

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ABSTRACT

In this talk, we consider irreversible investments under regime-switching jump-diffusion models. When an underlying cash flow process follows a regime-switching jump-diffusion model, the investor's objective is to find an optimal investment time to maximize the discounted expectation of a payoff function. First of all, the project value which is the discounted expectation of the cash flow stream can be evaluated by solving an partial integro-differential equation (PIDE). Then the optimal investment time is concerned with a Hamilton-Jacobi-Bellman (HJB) equation. We carry out numerical experiments with finite difference methods to analyze the behaviors of the real option with regime-switching jump-diffusion models.