Irreversible investment decision problem with jumps on finite time horizon

Sunju Lee¹ and Younhee Lee²

1) Division of Medical Mathematics, National Institute for Mathematical Sciences, Daejeon, 34047, Republic of Korea
2) Department of Mathematics, Chungnam National University, Daejeon, 34134, Republic of Korea

Corresponding Author: Younhee Lee, lyounhee@cnu.ac.kr

ABSTRACT

A real option on finite time horizon is considered under a regime-switching jump-diffusion model. The investor wants to determine an optimal investment time to maximize the discounted expectation of a payoff function. In this talk, the value of a project is evaluated by solving a partial integro-differential equation (PIDE) and it can be expressed as a closed-form solution. Then the value function and the optimal investment time can be computed by using an operator splitting method. A number of numerical simulations are performed to compute the value function and to find the optimal time to invest in the project.