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Uncertain optimal control of linear quadratic models with jump. (English) Zbl 1286.93202

Math. Comput. Modelling 57, No. 9-10, 2432-2441 (2013).

Summary: Based on the uncertain optimal control with jump, in this paper, we study a kind of special uncertain optimal control problem: *linear-quadratic* (LQ) *uncertain optimal control problem with jump* which has a quadratic objective function for a linear uncertain control system with jump. We obtain a necessary and sufficient condition for the existence of optimal control. As an application, we discuss an uncertain LQ optimal control problem for the enterprize's investment decisions.

MSC:

93E20 Optimal stochastic control
49N10 Linear-quadratic optimal control problems

Keywords:

uncertain LQ optimal control with jump; principal of optimality; equation of optimality; necessary and sufficient conditions; enterprize's investment decisions

Full Text: DOI

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