On Maximum Principle of Near-optimality for Diffusions with Jumps, with Application to Consumption-Investment Problem

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Abstract

In the present article, we prove a maximum principle for near-optimal stochastic controls for system driven by a nonlinear stochastic differential equations (SDEs in short) with jump processes. The set of controls under consideration is necessarily convex. The proof of our result is based on Ekeland's variational principle.

Keywords : First-order necessary conditions ; Near-optimal stochastic control ; Controlled diffusion with jumps ; Consumption-inve stment problem ; Ekeland's variational principle ; Convex perturbation.

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