

## **Generalized Gradient in Weak Maximum Principle with Non-differentiable Drift**

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### **Abstract**

We study the optimal stochastic control of systems driven by nonlinearly controlled stochastic differential equations with non-differentiable drift. The control-domain under consideration is necessarily convex and the diffusion coefficient can contain a control-variable.

**Keywords :** stochastic maximum principle; controlled diffusion; generalized gradient; non-differentiable drift; Ekeland's variational principle; convex control domain

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