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Stochastic Impulse Control with Regime-Switching Dynamics

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Highlights

- We investigate dynamic optimal control with intervention costs and regime shifts.
- Regime shifts can be partially controlled.
- We provide a direct approach to construct the value function and optimal strategies.
- Our analysis is based on quasi-variational inequalities in Sobolev spaces.
- We establish a verification theorem under minimal regularity conditions.
- We illustrate our approach by in an optimal product management application.

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