ON SOME STOPPING AND IMPULSIVE CONTROL PROBLEMS WITH A GENERAL DISCOUNT RATE CRITERIA

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Abstract: Optimal stopping and impulsive control problems are studied with a general, depending on the state of the process discount rate $g$. The criteria considered and results obtained are closely related to the type $R(g)$ of a discounted semigroup $(T^g_t)$. For the case where $R(g) < 0$, the continuity of value functions and the form of optimal stopping and impulse strategies corresponding to the ordinary discounted functional are shown. The case $R(g) = 0$ is studied under the assumption of uniform ergodicity and existence of a bounded positive eigenfunction for $(T^g_t)$, and then the ergodic stopping and impulsive control with long run average cost problems are solved.

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