Relationship Between Dynamic Programming and the Maximum Principle under State Constraints

Kyung-Eung Kim

Yonsei University, Department of Mathematics, Seodaemoon-ku Shinchon-dong 134, Seoul, Republic of Korea, <u>kim0105@math.yonsei.ac.kr</u>

Abstract: Bellman's dynamic programming and Pontryagin's maximum principle are two basic tools for studying optimal control theory. We consider the optimal control problem under state constraints and examine the relationship between the maximum principle and dynamic programming via the adjoint, Hamiltonian and value functions. For this purpose the notions of generalized superdifferentials are introduced.



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