OPTIMAL CONTROL OF SWEEPING PROCESS OVER POLYHEDRAL CONTROLLED SETS

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The sweeping process plays an important role in the theory of variational inequalities and complementarity problems. It has many applications in mechanical and electrical engineering: mechanical impact, Coulomb friction, diodes and transistors, queues and resource limits, etc. Its main characteristic is the **discontinuous behavior of the dynamics** and, as a consequence, non-Lipschitzian behavior which is a very popular case in the **theory of differential equations and inclusions**. The **optimal control problem** for sweeping process has been studied recently with applications relating to theory of plasticity, ferromagnetism and ferroelectricity. However, the general case is still unanswered. In this direction, we present one possible method to obtain the necessary optimality conditions for this class of optimization problems in the case when the controlled sets are polyhedral.

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