

Optimal Control of the Sweeping Process Generated by Moving Convex Polyhedra

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Abstract

We study a new class of optimal control problems of the sweeping (Moreau) process governed by differential inclusions, which are described by the normal cone mapping to moving polyhedral convex sets in finite-dimensional spaces. The main attention is paid to deriving necessary optimality conditions for such unbounded discontinuous differential inclusions with intrinsic state constraints. This is done by developing the method of discrete approximations and employing appropriate tools of second-order variational analysis and generalized differentiation.

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