

SEMINARIO

OPTIMIZACIÓN Y EQUILIBRIO

Expositor :

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Title:

Fully convex optimal control problems and impulsive systems.

Abstract:

We are interested in fully convex optimal control problems, that is, problems whose Lagrangian is jointly convex in the state and the velocity. Problems of this kind have been widely investigated by Rockafellar and collaborators in the absence of state constraints. In particular, it has been established that the adjoint state (which is an absolutely continuous arc as well as the state of the system) solves a dual optimal control problem, and that the dual value function is the conjugate function of the primal value function.

In this talk, we discuss properties of the primal value function when state constraints are considered. It is well-known that under these conditions, the adjoint state may have jumps, leading to a dual problem whose domain is no longer the space of absolutely continuous arcs, but the space of arcs of bounded variation. By the symmetry involved in the duality, the domain of the primal problem need to be extended to arcs of bounded variation as well, which yields to a primal impulsive dynamical system.

Miércoles 06 de Enero a las 16:30 hrs, Sala de Seminarios DIM, quinto piso, Torre Norte, Beauchef 851.

