crucial for the construction of appropriated spaces of generalized controls and generalized trajectories and for the characterization of any generalized optimal solutions.

Impulsive Control

Fernando Lobo Pereira

This presentation concerns a class of dynamic optimization problems in which the control space is enlarged in order to include not only measurable functions as in the conventional formulation but also measures.
In this context, it is possible to address classes of applications for which it is natural to admit trajectories that are functions of bounded variation. Naturally, the definition of the solution concept becomes a key issue since it is of fundamental importance to ensure properties enabling the derivation of results analogue to those in standard Control Theory.
After introducing the solution concept and some of the main properties, the following results will be discussed:
1. Necessary Conditions of Optimality in the form for a Maximum Principle.
2. Optimality Conditions of the Hamilton-Jacobi type
3. Lyapunov Stability Conditions.