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**Marco Mazzola\*** ([marco.mazzola@imj-prg.fr](mailto:marco.mazzola@imj-prg.fr)). *Neighboring feasible trajectories in infinite dimension.*

In optimal control theory under state constraints, approximations of solutions of the control system by trajectories lying in the given constraint set are very useful for applications. For instance they can be used in the study of the regularity of the value function and the non degeneracy of first order necessary conditions for optimality. In this talk we are interested in this kind of results when dealing with differential inclusions of the form

$$\dot{x}(t) \in Ax(t) + F(t, x(t)),$$

with  $x(\cdot)$  staying in a given closed subset of an infinite dimensional separable Banach space. The presence of the operator  $A$ , the infinitesimal generator of a strongly continuous semigroup, makes the differential inclusion be a convenient tool for the study of control problems involving PDEs. This is a joint work with H el ene Frankowska and Elsa Maria Marchini. (Received September 13, 2016)