5007-00-190 **Daniella Porto*** (danielinha.dani@gmail.com), Sao J. do Rio Preto, Brazil, and **Geraldo Nunes Silva**, Sao J. do Rio Preto, Brazil. *Approximation methods for impulsive optimal control problem.* Preliminary report.

The aim of this work is study the impulsive optimal control problem

$$(P) \qquad \begin{array}{ll} \min & J(x,\Omega) = H(x(0), x(T)) \\ & dx = f(x,u)dt + g(x,v)d\Omega, \quad t \in [0,T]; \\ & (x(0), x(T)) \in C, \end{array}$$

where $x : [0,T] \to \mathbb{R}^n$ is a function of bounded variation, $u : [0,T] \to \mathbb{R}^m$ and $v : [0,T] \to \mathbb{R}^r$ are Borel measurable, $\Omega := (\mu, \{v_t, \psi_t\})$ is impulsive control, such that, μ a vector Borel measure with range in the cone $K \subset \mathbb{R}^q$ and $v_t : [0,1] \to \mathbb{R}^r$ and $\psi_t : [0,1] \to K$ are families of measurable essentially bounded functions depending on the real parameter $t \in [0,T]$, where t is an atom of μ, that is, whose $\Theta := \{t \in [0,T] : \mu(t) \neq 0\}$.

In this work is shown that, under some assumptions, the problem (P) can be discretized by Euler's method to generate a sequence (or subsequence) of Euler's optimal trajectories which graph-converges to an optimal trajectory of continuous problem. (Received May 06, 2013)