

A Study on Approximate Controllability of Impulsive Integrodifferential Systems with Non Local Conditions

Authors : Anandhi Santhosh

Abstract : In order to describe various real-world problems in physical and engineering sciences subject to abrupt changes at certain instants during the evolution process, impulsive differential equations has been used to describe the system model. In this article, the problem of approximate controllability for nonlinear impulsive integrodifferential equations with state-dependent delay is investigated. We study the approximate controllability for nonlinear impulsive integrodifferential system under the assumption that the corresponding linear control system is approximately controllable. Using methods of functional analysis and semigroup theory, sufficient conditions are formulated and proved. Finally, an example is provided to illustrate the proposed theory.

Keywords : approximate controllability, impulsive differential system, fixed point theorem, state-dependent delay

Conference Title : ICMPS 2015 : International Conference on Mathematics and Physical Sciences

Conference Location : Sydney, Australia

Conference Dates : December 10-11, 2015