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EXISTENCE AND CONTROLLABILITY OF FRACTIONAL-ORDER IMPULSIVE STOCHASTIC SYSTEM WITH INFINITE DELAY

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Abstract

This paper is concerned with the existence and approximate controllability for impulsive fractional-order stochastic infinite delay integro-differential equations in Hilbert space. By using Krasnoselskii's fixed point theorem with stochastic analysis theory, we derive a new set of sufficient conditions for the approximate controllability of impulsive fractional stochastic system under the assumption that the corresponding linear system is approximately controllable. Finally, an example is provided to illustrate the obtained theory.

Keywords: existence result, approximate controllability, fractional stochastic differential equations, resolvent operators, infinite delay.

2010 Mathematics Subject Classification: 34G20, 34G60, 34A37, 60H40.

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