

RANDOM FUNCTIONAL EVOLUTION EQUATIONS WITH STATE-DEPENDENT DELAY*

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Abstract

Our aim in this work is to study the existence of mild solutions of a functional differential equation with delay and random effects. We use a random fixed point theorem with stochastic domain to show the existence of mild random solutions.

MSC: 34G20, 34K20, 34K30

Key words : Random fixed point, Functional differential equation, mild random solution, finite delay, semigroup theory.

1 Introduction

Functional evolution equations with state-dependent delay appear frequently in mathematical modeling of several real world problems and for this reason the study of this type of equations has received great attention in the last few years, see for instance [1, 9, 19, 20]. Functional differential

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