EXISTENCE AND UNIQUENES RESULTS FOR SYSTEMS OF IMPULSIVE FUNCTIONAL STOCHASTIC DIFFERENTIAL EQUATIONS DRIVEN BY FRACTIONAL BROWNIAN MOTION WITH MULTIPLE DELAY

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ABSTRACT. We present some existence and uniqueness results on impulsive functional differential equations with multiple delay with fractional Brownian motion. Our approach is based on the Perov fixed point theorem and a new version of Schaefer's fixed point in generalized metric and Banach spaces.

1. Introduction

Stochastic partial functional differential equations with finite delays driven by fractional Brownian motion (SDEs) are very important as stochastic models of biological, chemical, physical, and economical systems.

The study of impulsive stochastic functional differential equations is a new research area. There are few publications in this theory. The existence of solutions of impulsive differential equations was investigated, for example in [7], [9], [17], [21], [23]–[25], [32], [38], [42], [46] the authors investigated the existence of solutions of nonlinear stochastic differential equations by means of the Banach fixed point theorem. Ouahab [30] obtained existence of solutions of functional