The existence and averaging principle for stochastic fractional differential equations with impulses

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Abstract

In this paper, a class of stochastic fractional differential equations (SFDEs) with impulses is considered. By virtue of the Monch's fixed point theorem and Banach contraction principle, we explore the existence and uniqueness of solutions to the addressed system. Furthermore, with the aid of the Jensen's inequality, Holder inequality, Burkholder-Davis-Gundy inequality, Gronwall-Bellman inequality and some novel assumptions, the averaging principle of our considered system is obtained. At the end of this paper, an example is provided to illustrate the theoretical results.

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