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NEW IMPULSIVE–INTEGRAL INEQUALITY FOR STOCHASTIC DIFFERENTIAL EQUATIONS WITH POISSON JUMPS AND CAPUTO FRACTIONAL DERIVATIVE

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Abstract. In this paper, we study the existence and exponential stability in pth moment of mild solutions for a class of impulsive fractional stochastic differential equations driven by Poisson jumps. Firstly, we discuss the existence and uniqueness of mild solutions for the considered equations by the Banach fixed point theorem. Next, we establish a new impulsive-integral inequality that can effectively improve some previous results [4, 17, 5, 3, 6]. Then, we obtain the exponential stability in the pth moment of mild solutions for the considered equations with the aid of the new inequality. Finally, an example is given to illustrate the efficiency of the obtained theoretical results.

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