

Delayed impulsive SDEs driven by multiplicative fBm noise and additive fBm noise

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April 3, 2021

Abstract

The stability and boundedness for delayed impulsive SDEs driven by fBm are studied in this paper. Two kinds of noises, i.e., additive fBm noise and multiplicative fBm noise are both taken into consideration. By using stochastic Lyapunov technique and impulsive control theory, sufficient criteria for p th moment exponential stability and mean square ultimate boundedness are derived, for two kinds of fBm driven delayed impulsive SDEs, respectively. As application, the obtained results are used to do practical synchronization w.r.t. a class of chaotic systems, in which the response system is perturbed by additive fBm noises. Finally, A Chua chaotic oscillator is given to verify the validity and applicability of the derived results.

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