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Boundedness analysis of stochastic delay differential equations with Lévy noise. (English)


Summary: The present paper is concerned with the mean square asymptotic boundedness and twice power almost surely asymptotic boundedness of stochastic delay differential equations driven by Lévy noise. First, mean square asymptotic boundedness criteria of the solutions are established by the method of reduction and the generalized Itô formula. Then, based on the Chebyshev inequality and the Borel-Cantelli lemma, the twice power almost surely asymptotic boundedness criteria are also derived for the addressed equations. Finally, a example is provided to demonstrate the validity of the proposed results.

MSC:
34Kxx Functional-differential equations (including equations with delayed, advanced or state-dependent argument)
60Hxx Stochastic analysis
93Exx Stochastic systems and control

Keywords:
Lévy noise; mean square asymptotic boundedness; almost surely asymptotic boundedness; stochastic delay differential equations

Full Text: DOI

References:


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