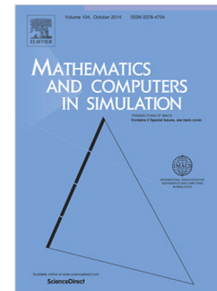


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Existence and Exponential Behavior of Multi-valued Nonlinear Fractional Stochastic Integro-differential Equations with Poisson Jumps of Clarke's Subdifferential Type[☆]

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Abstract

This manuscript addresses the study of a new class of multi-valued nonlinear fractional stochastic integro-differential equations with Poisson jumps of Clarke's subdifferential type in Hilbert space of order $1 < \alpha < 2$. Initially, by using α -resolvent operator, Holder inequality, properties of Clarke's generalized subdifferential, fractional calculus and the multi-valued fixed point theorem due to Dhage, the existence result for the proposed system is obtained. Further, the sufficient conditions are established to ensure that exponential decay of mild solution to zero in the square mean. Finally, the obtained results are applied to fractional stochastic hemivariational inequalities. An example is illustrated for the development of obtained results.

Keywords: Clarke's generalized subdifferential; Exponential stability; Fractional stochastic integro-differential equations; Multi-valued map; Poisson jumps; α -resolvent operator.

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