

STOCHASTIC EVOLUTION EQUATIONS

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Doctoral Thesis
Abstract

Linear stochastic evolution equations with additive regular Volterra noise are studied in the thesis. Regular Volterra processes need not be Gaussian, Markov or semimartingales, but they admit a certain covariance structure instead. Particular examples cover the fractional Brownian motion of $H > 1/2$ and, in the non-Gaussian case, the Rosenblatt process. The solution is considered in the mild form, which is given by the variation of constants formula, and takes values either in a separable Hilbert space or the space $L^p(D, \mu)$ for large p . In the Hilbert-space setting, existence, space-time regularity and large-time behaviour of the solutions are studied. In the L^p setting, existence and regularity is studied, and in concrete cases of stochastic partial differential equations, the solution is shown to be a space-time continuous random field.