
Stochastic Volterra Equations in Banach Spaces and Stochastic Partial Differential Equations

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In this talk, we study the existence-uniqueness and large deviation estimate of solutions for stochastic Volterra integral equations with singular kernels in 2-smooth Banach spaces. Then, we apply them to a large class of semilinear stochastic partial differential equations (SPDE) driven by Brownian motions as well as by fractional Brownian motions, and obtain the existence of unique maximal strong solutions (in the sense of SDE and PDE) under local Lipschitz conditions. Lastly, high order SPDEs in a bounded domain of Euclidean space, second order SPDEs on complete Riemannian manifolds, as well as stochastic Navier-Stokes equations are investigated.