

Year: 1999

Vol.: 54

Fasc.: 1-2

Title: Relaxed solutions for stochastic evolution equations on Hilbert space with polynomial nonlinearities

Author(s): N. U. Ahmed

In this paper we introduce a new concept of generalized solutions or relaxed solutions for stochastic evolution equations on Hilbert space along the line of concept recently introduced for deterministic evolution equations on Banach spaces (see [1, 6]). We present here a result on the question of existence of generalized or measure valued solutions for stochastic semilinear evolution equations on Hilbert space. The result is sufficiently general to admit drift and diffusion parameters having polynomial growth without requiring Hilbert–Schmidt property for the later. As a corollary, an existence result of generalized solutions for forward Kolmogorov equation is obtained. Our main result is illustrated by three different examples one of which arises from structural mechanics.

Address:

N. U. Ahmed
Department of Electrical Engineering
Department of Mathematics
University of Ottawa
Canada