Meeting: 1006, Lubbock, Texas, SS 9A, Special Session on Theory and Application of Stochastic Differential Equations

1006-60-85 **Fariborz Asadian*** (asadianf@fvsu.edu), Department of Mathematics & Computer Science, Fort Valley State University, Fort Valley, GA 31030. *Measures Generated by Stochastic Differential Equations in Banach Space.*

Let B be an infinite dimensional separable Banach space, and let H be a Hilbert subspace of B such that the pair (H, B) is an abstract Wiener space. We use the methods of the Malliavin calculus and prove differential properties of measures generated by the solution of a stochastic differential equation $\xi(t) = x + \int_0^t A(s, \xi(s))dW(s) + \int_0^t \sigma(s, \xi(s))ds$, where $\{ W(t) ; t \geq 0 \}$ is a $B-$valued Wiener process, $A(s, y) = I + K(s, y)$ belongs to the affine space $I + H \otimes H$, and the coefficients K and σ possess regularity properties in the directions of H. We will discuss some applications to infinite dimensional partial differential equations. (Received February 07, 2005)