

1086-60-1284      **Jinqiao Duan\*** (jduan@ipam.ucla.edu), Univ of California, 460 Portola Plaza, Los Angeles, CA 90095-7121. *A Glimpse of Non-Gaussian Stochastic Dynamics.*

Dynamical systems arising in biological, physical and chemical sciences are often subject to random influences, which are also known as “noise”. Stochastic differential equations are appropriate models for some of these systems. The noise in these stochastic differential equations may be Gaussian or non-Gaussian in nature. Non-Gaussianity of the noise manifests as nonlocality at a macroscopic level. In addition, randomness may have delicate, or even profound, impact on the overall evolution of dynamical systems. The speaker will present an overview of some available theoretical and numerical techniques for analyzing stochastic dynamical systems, including escape probability, mean exit time, invariant manifolds, bifurcation and quantifying the impact of uncertainty. The differences in dynamics under Gaussian and non-Gaussian noises are highlighted, in the context of a tumor growth system. (Received September 20, 2012)