

1083-34-73

**Gangaram S Ladde\*** (gladde@usf.edu), Department of Mathematics and Statistics, 4202 East Fowler Avenue, CMC 342, Tampa, FL 33620-5700. *Stochastic Boundary Value Problems of Ito-Doob Type with Applications*. Preliminary report.

By employing the Green's function method, the existence of a solution process of a nonlinear Ito-Doob type stochastic boundary problem is investigated. In addition, the mean-square stability and error estimate results are established. The presented results are applied to investigate the chemical, environmental and physical sciences dynamic processes. Moreover, the effects of random environmental are also illustrated. (Received August 17, 2012)