Meeting: 1154, Denver, Colorado, SS 2A, AMS Special Session on Stochastic Analysis and Applications in Finance, Actuarial Science and Related Fields, I

Hui-Hsiung Kuo (kuo@math.lsu.edu), **Sudip Sinha*** (ssinha4@lsu.edu) and **Jiayu Zhai** (zhai@math.umass.edu). *Stochastic Differential Equations with Anticipating Initial Conditions.*

In this paper, we study the solutions of a stochastic differential equation with various anticipating initial conditions. We show that the conditional expectation of the solution of such a stochastic differential equation is not simply the solution of the corresponding stochastic differential equation with initial condition taken as the conditional expectation of the anticipating initial condition. We derive the conditional expectation of the solution in general and apply it to the special case of anticipating initial condition given by Hermite polynomials. We also extend the class of initial conditions to functions of Wiener integrals. (Received September 17, 2019)