1135-60-1298 **Kursad Tosun*** (kursadtosun@mu.edu.tr), Mugla Sitki Kocman University, Department of Biostatistics, Faculty of Medicine, Mugla, Turkey, and **Cemile Tosun** (ctosun@siu.edu), Mugla, Turkey. *An epidemic model obtained by expressing the randomness of contact and recovery rates through Wiener processes.*

We can use stochastic nature of the spread of infectious diseases as an advantage to better understand the dynamics of disease epidemics. In this talk, we will introduce a class of stochastic SIS models for non-constant population. By using simulations, based on Balanced Implicit Method, we will show that the new model is realistic. Next, we will prove the global existence of a unique solution of the given system of nonlinear stochastic differential equations. Finally, we will discuss stochastic asymptotic stability of disease-free and endemic equilibria. (Received September 21, 2017)