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

1006-60-9 **James G Hayes*** (jhayes@math.ttu.edu), Department of Mathematics and Statistics, Texas Tech University, Lubbock, TX 79424-1042, and **Edward J Allen**. *Stochastic Point Kinetics Equations in Nuclear Reactor Dynamics.*

A system of Itô stochastic differential equations is derived that model the dynamics of the neutron density and the delayed neutron precursors in a point nuclear reactor. The stochastic model is tested against Monte Carlo calculations and experimental data. The results demonstrate that the stochastic differential equation model accurately describes the random behavior of the neutron density and the precursor concentrations in a point reactor. (Received December 03, 2004)