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Eka Oche Ogbaji*, Department of Mathematics and Statistics, Federal university Wukari, Wukari, **E.S Onah**, Department of Maths/Stat/Comp.Sc, and **A.R Kimbir**. *Simplified Stochastic Runge-Kutta (SSR-K) scheme for a Stock Market Model.*

A system of stochastic differential equations in the form of a geometric Brownian motion was formulated. This was to model a compartmental stock market situation. We simplified stochastic Runge-Kutta scheme to solve four - dimensional stochastic differential equation and show N- dimension simplified stochastic Rung-Kutta (SSR-K) scheme . In this research work, the simplification follows the principle of Runge-Kutta scheme for ordinary differential equation. We showed the theoretical analysis of convergence, stability, consistence and order of the scheme by using the existence and uniqueness theorem. We conclude that the formulated model can be use to show the real application of stock market in four compartment. We conclude that n-dimensional stochastic differential equation can be solve by using n-dimensional simplified stochastic Runge-Kutta scheme. (Received June 17, 2016)