1086-60-1166 **Wanwan Huang*** (bsbhuang8527@gmail.com), 700 W. Virginia ST, APT 118, Tallahassee, FL 32304. *Option Valuation Using Fast Fourier Transform Method under the CAM Stochastic Volatility Model.* Preliminary report.

In this paper we study the distribution of Coupled-Additive Multiple Noises (CAM) stochastic volatility model using a fast Fourier transform (FFT) method. The technique in Heston's paper is applied to derive a closed-form solution for the characteristic function of this model. The characteristic function is in the form

$$\phi(x, y, T; u) = \exp\{C(T-t; u) + D(T-t; u)y + iux\},$$

where x is the spot asset return, which is $\log(S_t)$, y is the diffusion process which drives the volatility of underlying asset S_t, $T-t$ represents the time to maturity of the European call option, and $C(T-t; u)$ and $D(T-t, u)$ are two time related terms which can be solved from two ordinary differential equations. The ordinary differential equations are from the Fokker-Planck forward equation. The curve of the characteristic function under certain initial conditions has been plotted. Based on this function, the probability density of x was computed using the FFT method. The plot of the distribution is skewed with a fat left tail. European call option prices are computed using the modified call price FFT method mentioned in Carr and Madan's paper. (Received September 19, 2012)