1056-60-590   **George Yin** and **Jie Yu*** (`jyu@roosevelt.edu`), 1400 N. Roosevelt Blvd, Schaumburg, IL 60173, and **Qing Zhang**. *A Stochastic Approximation Algorithm for Option Pricing Model Calibration with a Switchable Market.*

This paper is concerned with option pricing under a regime switching model. The switching process takes two different modes, and the underlying stock price evolves in accordance with the two modes dictated by a continuous-time, finite-state Markov chain. At any given instance, the price follows either a geometric Brownian motion model or a mean-reversion model depending on its market mode. Stochastic approximation/optimization algorithms are developed for model calibration. Convergence of the algorithm is proved; rate of convergence is also provided. Option market data are used to predict future market mode. (Received September 14, 2009)