

Heston-Type Stochastic Volatility with a Markov Switching Regime

Katsumasa Nishide
Yokohama National University

We construct a Heston-type stochastic volatility model with a Markov switching regime to price a plain-vanilla stock option. A semi-analytic solution, which contains a matrix ODE is obtained and numerically calculated. Our model is flexible enough to provide a wide variety of volatility surfaces for the same volatility level but different regimes.