1086-60-78 **Andrew Papanicolaou***, Sherrerd Hall, Charlton st, Princeton, NJ 08544. *Asymptotic Expansion of Regime-Switching Models for Consistent Pricing of VIX and S&P500 Derivatives.*

Stochastic volatility models explain some of the heavy-tailedness observed in Black-Scholes implied volatility smile/skew. The new VIX methodology is appealing because it is model-free, but the matter of the VIX's heavy-tailedness arises from the skew observed in the implied volatility of VIX options. A unified volatility model for both equity and VIX derivatives can be developed by making well-known volatility models more sophisticated with the addition of jumps and stochastic parameters, and such additions will provide some new explanatory power for addressing the heavy-tailedness issues. (Received July 07, 2012)