1067-91-1304   **Maria C. Mariani*** (`mathdept@math.utep.edu`), 500 W. University Ave., Bell Hall 124, El Paso, TX 79968-0514, and **Emmanuel Ncheuguim**, **Ionut Florescu** and **Indranil Sen Gupta**.
Option Pricing With Transaction Costs And Stochastic Volatility.

Option pricing with transaction coasts and stochastic volatility leads to a nonlinear Black-Scholes type equation where the nonlinear term reflects the presence of transaction costs. We derive the model with transaction costs and we extend it to the case where the volatility is stochastic. Under suitable conditions, we prove the existence of strong solutions of the problem. We also study the Spherical Harmonics Approach. (Received September 20, 2010)