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**Indranil SenGupta\*** (isengupta@utep.edu), Department of Mathematical Sciences, 500 W. University Ave., (Bell Hall), University of Texas- El Paso, El Paso, TX 79968. *Existence of solutions for financial models with transaction costs and stochastic volatility.*

The option pricing problem when the asset is driven by a stochastic volatility process and in the presence of transaction costs leads to solving a nonlinear partial differential equation. The nonlinear term in the PDE reflects the presence of transaction costs. When using a stochastic volatility model the market is incomplete and the option price is not unique. However, under a particular market completion assumption we derive the nonlinear PDE whose solution may be used to find the price of options. Under suitable conditions, we prove the existence of strong solutions of the problem. (Received August 06, 2011)