1059-35-54 **Maria C. Mariani** and **Emmanuel Ncheuguim*** (emmanou@nmsu.edu), Department of Mathematical Sciences, New Mexico State University, Las Cruces, NM 88003-8001. *Solution to a Nonlinear Black-Scholes Equation.*

Option pricing with transaction costs leads to a nonlinear Black-Scholes equation where the nonlinear term reflects the presence of transaction costs. Under suitable conditions, we prove the existence of strong solutions in a bounded domain and extend the results to the whole domain by using a diagonal process. (Received February 11, 2010)