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**Craig Nolder.** *Option Pricing with Parsimonious Time-inhomogeneous Additive Models.*

The use of time-inhomogeneous additive processes in option pricing has become increasingly popular in recent years due to the ability of these models to adequately price across both strike and maturity with relatively few parameters. In this paper we construct two such classes of models whose time one distributions agree with those of prespecified Lévy processes. The pricing errors of these processes is assessed for the case of Standard and Poor's 500 Index Options from the year 2005. We find that both models show dramatic improvement in pricing error over their associated Lévy processes. Furthermore, with regard to the average of the pricing errors over the quote dates studied, one such class of models yields a mean pricing error significantly less than that implied by the bid-ask spreads of the options, and also significantly less than that given by the associated, larger parameter Lévy stochastic volatility models. (Received September 24, 2006)