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Eric Hillebrand* (erhil@lsu.edu), 2126 Taylor, Baton Rouge, LA 70803, and **Marcelo Medeiros**. *Asymmetries, Breaks, and Long-Range Dependence: An Estimation Framework for Time Series of Daily Realized Volatility*.

We study the simultaneous occurrence of long memory and nonlinear effects such as structural breaks and thresholds in conditional volatility. We propose a model framework for returns and conditional volatility and specify a Lagrange-multiplier test for nonlinear terms in the volatility equation in the presence of long memory. The system allows for general nonlinear functions in the volatility equation. Asymptotic theory for the quasi-maximum likelihood estimator of the system is provided using a triangular array setup. The theoretical results in the paper can be applied to any series with long memory and nonlinearity. The methodology is applied to individual stocks of the Dow Jones Industrial Average during the period 1995 to 2005. As a proxy for conditional volatility we consider a kernel-based realized volatility measure. We find strong evidence of nonlinear effects and explore different specifications of the model framework to study changes in the mean of realized volatility and leverage effects. A forecasting exercise demonstrates that allowing for nonlinearities in long memory models yields performance gains. (Received January 29, 2008)