1127-60-355 **Alexandra Chronopoulou*** (achronop@illinois.edu), IL. *Estimating the correlation in a stochastic volatility model with LRD.*

We consider a stochastic differential equation (SDE) in which the diffusion coefficient is a function of the solution to a fractional SDE. We assume that the noises of these two equations are correlated, and we consider the problem of estimating their correlation structure using discrete-time, high-frequency observations. To this end, we propose a nonparametric estimator based on the quadratic co-variation of the two processes. Using Malliavin calculus techniques, we establish a Central Limit Theorem for the quadratic co-variation process, and based on this result, we derive the strong consistency and asymptotic distribution of the proposed estimator. We illustrate our results in a simulation example, as well in a financial application that is the motivation for this work: the estimation of leverage effects under a long-memory stochastic volatility model. (Received February 07, 2017)