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**Nonstationary increments and variable diffusion processes in financial markets** JOSEPH L. MCCAULEY, KEVIN E. BASSLER, GEMUNU H. GUNARATNE, University of Houston, U OF H ECONOPHYSICS GROUP COLLABORATION — Fat tailed returns distributions and Hurst exponent scaling for financial markets have been reported for more than a decade. The sliding interval technique used in those analyses implicitly assumes that the increments are stationary, an assumption that generally contradicts the facts that the increments are uncorrelated. We show that the data exhibit nonstationary, uncorrelated increments, implying diffusive dynamics with a variable diffusion coefficient, but there is no evidence for either fat tails or Hurst exponent scaling in daily FX returns.

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