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Peter K. Asante (pkasante@miners.utep.edu) and **Osei K. Tweneboah**
(oktweneboah@miners.utep.edu). *Relationship between Self-Similar Models and The Lévy Model.*

Many real-world time series are known to exhibit memory effects of some sort. These memory effects may be short or long, temporal or permanent. Herein, we make use of time series that exhibit long-memory behavior. Barany et al. (2012) described an inverse relationship between the Hurst exponent and the parameter of the Lévy model. The purpose of this study is to describe a mathematical relation between self-similar models (Detrended Fluctuation Analysis and Diffusion Entropy Analysis) and the Lévy model. Using financial and geophysical time series that exhibit long-memory behavior, this relation is confirmed numerically. To investigate the presence of long-memory behavior in the time series, we estimate scaling parameters of DFA (H), DEA (δ) and the Lévy Model (α). We conclude that an inverse relation is generated between the self-similar parameters and the Lévy model parameter characterizing the data. i.e. $(H, \delta) \approx \frac{1}{\alpha}$ (Received July 05, 2020)