THE UNIVERSITY OF CHICAGO

Departments of Computer Science, Mathematics, Statistics, and the Computation Institute

SCIENTIFIC AND STATISTICAL COMPUTING SEMINAR

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Taylor's Power Law of Fluctuation Scaling: Examples and Theories

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Eckhart 133, 5734 S. University Avenue

ABSTRACT

In a surprising variety of situations, the variance of a sample of nonnegative observations is proportional to a positive power of the mean of the sample. I will give examples of this power-law relationship between the variance and mean from plant and animal ecology, cell biology, genetics, human demography, meteorology, stock market trading, and number theory. I will then describe some of the many theories that have been proposed to account for and interpret this power-law relationship.