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A QUANTUM MODEL OF STOCK MARKETS

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ABSTRACT

This talk presents a quantum harmonic oscillator model of price fluctuations in a stock market, which builds on a previously-published quantum model of supply and demand, and can be viewed as a quantized version of a classical econometrics model first proposed in 1933. An advantage of the approach is that it interprets market behavior in terms of entropic forces which, when expressed in quantum terms, can account for a variety of behavioral effects of the sort studied in quantum cognition and quantum decision theory. The model helps to interpret quantities such as force, mass, frequency and energy in a financial setting, and is consistent with observed phenomena such as the square-root behavior of price impact.

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Keywords: price fluctuation, harmonic oscillator, entropic forces, stock market

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