

A continuum percolation model for stock price fluctuation as a Lévy process

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Abstract

This paper concerns with two reasons for stock price fluctuation, the instinctive stochastic fluctuation and the fluctuation caused by the spread of information. They are constructed by compound Poisson process and continuum percolation model separately. Combining the two models, the authors get a Lévy process for the price fluctuation that can explain the fat-tail phenomenon in stock market. The fat-tails are also presented in numerical simulations.