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From Black-Scholes Model to Polynomial-Normal Model

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Using random walks to model stock price behaviors, the famous Black-Scholes model was established. Under Black-Scholes model, the logarithmic return of the stock are assumed normally distributed. But this normally distributed assumption is doubted and proved to be not true by realistic data. To gain better estimation of future stock prices, we created Polynomial-Normal model, which is generated from polynomial-normal distribution. We will talk about the properties of this new model, and related subjects such as option pricing, parameter estimation under the new model.