

## Approximation of the Time Series by Fractal Brownian Motion

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**Abstract :** In this paper, we propose two problems related to fractal Brownian motion. First problem is simultaneous estimation of two parameters, Hurst exponent and the volatility, that describe this random process. Numerical tests for the simulated fBm provided an efficient method. Second problem is approximation of the increments of the observed time series by a power function by increments from the fractional Brownian motion. Approximation and estimation are shown on the example of real data, daily deposit interest rates.

**Keywords :** fractional Brownian motion, Gaussssian processes, approximation, time series, estimation of properties of the model

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