Topic “Eime series prediction using fractal Brownian motion”

Master’s thesis: 136p., 20 fig., 4 tabl. 2 appendixes, 23 references

Subject matter of the study - fractional Brownian motion, logistic chaotic sequence, Time series

Scope of the study - deterministic and stochastic components

Objective of the study - proposed a method for determining the ratio of deterministic and stochastic components for observed real data.

We proposed a method for determining the ratio of deterministic and stochastic components for observed real data. We illustrated a number of numerical experiments which used simulation modelling of logistic chaotic sequence and the values of fractional Brownian motion with different values of Hurst exponent H. In the additive mixture is given the ratio of the energies of deterministic and random components.

The chaotic term turns out to be more aggressive for large values of Hurst exponent- the control statistics of mixture are different from the reference values which corresponding to the fractional Brownian motion.

Practical application - an opportunity to assess the presence and stochastic randomness in the data and on this basis to continue the analysis.

FRACTAL BROWNIAN MOTION, LOGISTIC MAPPING, TIME SERIES, STOCHASTICITY, CHAOTIC