Dependent SiZer: Goodness of Fit Tests for Time Series Models

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Summary

In this paper, we extend SiZer (SIgnificant ZERo crossing of the derivatives) to dependent data for the purpose of goodness of fit tests for time series models. Dependent SiZer compares the observed data with a specific model being tested by adjusting the statistical inference using an assumed autocovariance function. Dependent SiZer is used to find statistically significant differences between Internet traffic data and Fractional

Gaussian Noise (FGN) which has been a popular long range dependent model.

Some key words: Autocovariance function; Dependent SiZer; Fractional Gaussian Noise; Internet traffic data; Goodness of fit test; SiZer; Time series.