



Estimation of the autocorrelation function of long-memory processes

Mauricio Zavallos

Department of Statistics, UNICAMP, Campinas, Brazil - amadeus@ime.unicamp.br

The sample autocorrelation function (SACF) is the primary tool for estimating dependence in time series data. For short memory time series, such as ARMA time series, the SACF is a consistent estimator. However, for long memory time series the SACF can present a high asymptotic bias. This occurs for example in ARFIMA time series when the long memory parameter is near 0.5. In this work we present an alternative estimator to the SACF. The finite sample performance of the proposed estimator is assessed by Monte Carlo experiments. In addition, applications with real-life time series are presented.

Keywords: ARFIMA; fractional noise; sample autocorrelation.