Abstract

We consider the class of all stationary Gaussian process with explicit parametric spectral density. Under some conditions on the autocovariance function, we define a GMM estimator that satisfies consistency and asymptotic normality, using the Breuer-Major theorem and previous results on ergodicity. This result is applied to the joint estimation of the three parameters of a stationary Ornstein-Uhlenbeck (fOU) process driven by a fractional Brownian motion. The asymptotic normality of its GMM estimator applies for any H in (0; 1) and under some restrictions on the remaining parameters. A numerical study is performed in the fOU case, to illustrate the estimator’s practical performance when the number of data-points is moderate.

This is a joint work with Luis A. Barboza from the Department of Mathematics at the University of Costa Rica.

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