

Abstract

The paper is about an approach for parametric inference on instantaneously transformed stationary processes. The paper discusses the asymptotics of the Whittle estimator of the parameters involved and also provides the explicit expression of asymptotic covariance matrix which does not necessarily require the innovation Gaussianity assumption. As a specific instantaneous transformation, the paper introduces a new version of the Box-Cox transformation and investigates in detail the vector ARMA processes implemented by that transformation, proposing a computation-intensive procedure for parametric estimation and testing. As a computationally feasible test not relying upon the explicit analytic form of the asymptotic covariance matrix or on the information inequality, the paper proposes a Monte-Carlo Wald test, providing illustrative simulation and real-data examples.