On the Behaviour of the AR(p) Processes Near The Stationarity Border: A Simulation Study

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Abstract

We focus on the study of the behaviour of the processes AR(p), expressed in terms of the autocovariance function, near the border of the stationarity domain. We look for special patterns of $\gamma(t)$ and we investigate the speed of convergence towards zero of this function.The sample mean is a very good estimator of the expected valueof the process regardless the position of the parameters. The theoretical results about the autocorrelation function should be nuanced. We have identified some special patterns and different speeds for the convergence towards zero for different parts of the stationarity domain.

Keywords: autocovariance function, autocorrelation function
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