Ann Inst Stat Math (2013) 65:125–147
DOI 10.1007/s10463-012-0363-z

Nonparametric pseudo-Lagrange multiplier stationarity testing

Manuel Landajo · María José Presno

Received: 27 June 2011 / Revised: 19 December 2011 / Published online: 17 April 2012

Abstract The framework of stationarity testing is extended to allow a generic smooth trend function estimated nonparametrically. The asymptotic behavior of the pseudo-Lagrange multiplier test is analyzed in this setting. The proposed implementation delivers a consistent test whose limiting null distribution is standard normal. Theoretical analyses are complemented with simulation studies and some empirical applications.

Keywords Time series · Stationarity testing · Limiting distribution · Nonparametric regression · Nonparametric hypothesis testing