

1145-VT-448

Nathaniel Adjei Adu* (nadu@knights.ucf.edu), Department of Mathematics, University of Central Florida, 4393 Andromeda Loop N, Orlando, FL 32816. *Unit Roots Test: Spatial Model With Long Memory Errors.*

A test for unit roots in the autoregressive model $Y_{ij} = \alpha Y_{i-1,j} + \beta Y_{i,j-1} - \alpha\beta Y_{i-1,j-1} + \epsilon_{ij}$ is developed whenever the error structure is assumed to have long range dependence. Whenever $\alpha = \beta = 1$, the limiting distribution of the sequence of normalized Fourier coefficients of the Y - process is shown to be a function of a two parameter fractional Brownian motion process on $[0, 1] \times [0, 1]$. This result is used to find the limiting distribution of the periodogram ordinate of the Y - process under the null hypothesis that $\alpha = \beta = 1$ (Received September 06, 2018)