Toolbox for non-stationary spatial econometrics

Chapter 1-4

Creating Spatial Connectivity Matrix

* Rook/Queen
* Spatial proximity measures
* Simple matrix for simulations: Head-tail

Testing Spatial Autocorrelation

* Moran’s I
* Lagrange Multiplier Statistics

Weight Matrix Specification Testing in Spatial Econometric

* J-test
* Non-Nested Tests on the Spatial Weight Matrix Based on Maximum Likelihood Estimation

Weight Matrix Estimation

* Beenstock & Felsenstein 2012
* Bhattacharjee and Jensen-Butler 2013
* Principle Components

Chapter 5-10

Spatial Unit Root Test

* SAR unit root
* SDPD unit root
* SEM unit root

Cross-sectional Dependence Test

* Breusch and Pagan 1979
* Pesaran’s CD
* Bailey et al 2016 alpha

Estimations

* Panel Fixed/Random Effect
* Panel Fixed/Random Effect (SUR)
* CCE estimator
* ML estimation
* IV estimation
* GMM estimation

Graphs

* Empirical Distribution of Monte Carlo Simulations
* Plot binary matrix (Contiguity Matrix) as dots