Tohoku University, SENDAI

Spatial Econometrics short course

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Timetable:
10:00-12:00 morning session
13:30-15:30 afternoon session

Course Description
This is an introductory course on Spatial Econometrics. It aims at introducing the problems related with handling spatial data, discussing the properties of the basic econometric models, providing the students with the basic skills to estimate these models in the R © environment. The course includes basic spatial definitions, descriptive spatial measures, the definition of the topology of a spatial system and of the weight matrix, specification, estimation and hypothesis testing of the general SARAR model.

Prerequisites
A first course in econometrics.

Textbooks

Arbia, G. (2014) *A primer for Spatial Econometrics: with applications in R*, texts in Econometrics, Palgrave Macmillan.

Arbia, G. (2006) *Spatial Econometrics: Statistical foundations and applications to regional convergence*, Springer-Verlag, Berlin.

Topics covered
1. Preliminaries
   - Typologies of spatial data
   - Measures of spatial dependence
   - Measures of spatial concentration
2. Some Important Definitions
   - The Weight Matrix *W* and the Definition of Spatial Lag
   - Testing Spatial Autocorrelation Among OLS Residuals Without an Explicit Alternative Hypothesis
3. Spatial Linear Stationary Homoskedastik Regression Models
   - The Spatial Error Model
   - The Spatial Lag Model
   - The general SARAR Model
   - Measures of impact in Spatial Econometric Models