

Course
Spatial Econometrics

Vienna, 17.09.–20.09.2018

Organized by

WU Vienna University of Economics and Business

Institute for International Economics and Development

Institute for Macroeconomics

Università degli Studi dell'Aquila

Department of Industrial and Information Engineering and Economics



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Description of the course

Spatial statistics and econometrics include techniques and methods to model spatial data taking into account interaction (spatial spillover) effects and spatial heterogeneity. It is an active and fast growing area of research, spurred by the increasing availability of spatial data, i.e. geo-referenced data. These techniques, many of which are still in their early development, use different analytic approaches and are applied in fields as different as economics, sociology, epidemiology and geology.

This course aims at getting acquaintance with the techniques of spatial statistics and econometrics, along with the main issues posed by the statistical treatment of geo-referenced data and by the construction and estimation of spatial econometric models.

Learning Outcomes

Students participating in the course will gain an up-to-date and accessible overview of the relevant theory as well as exposure to empirical applications of spatial econometric models in economics. All lectures will share a strongly applied component, showing empirical examples and providing statistical software (R) to analyze real-world cases.

Application

The ideal candidates for the Training School are PhD students, advanced Master students and post-doctoral fellows, interested in the analysis of spatial data with particular reference to new economic geography and regional growth applications.

The course is open to a maximum of 15 participants. Seven places are, however, reserved for PhD-students registered at WU.

Applications should include a CV, a recent transcript of completed examinations (including grades of econometric courses) and a short motivational letter that specifies the ways participating in the school will be useful for their current research (max 300 words).

Candidates should apply by sending an email with above mentioned documents to Thomas Zörner via E-mail (tzoerner@wu.ac.at) by Tuesday 1 August, 2018. Upon acceptance, applicants receive a notification by mid-August.

Lecturers

Roberto Basile (Department of Industrial and Information Engineering and Economics, Università degli Studi dell'Aquila, L'Aquila, Italy)

Jesús Crespo Cuaresma (Institute for Macroeconomics, Vienna University of Economics and Business, Vienna, Austria)

For organizational issues

Thomas Zörner (Institute for International Economics and Development, Vienna University of Economics and Business, Vienna, Austria, tzoerner@wu.ac.at)

Program

September 17, 2018

15-18

Introduction to spatial econometrics

Roberto Basile

Topics:

Motivating examples
Notions of spatial statistics

September 18, 2018

9-13 and 15-18

Modeling spatial dependence

Roberto Basile

Topics:

Models for cross-sectional data
(Specification, Interpretation,
Estimation techniques; Diagnostics)

September 19, 2018

9-13 and 15-18

Modeling spatial dependence and spatial heterogeneity

Roberto Basile

Topics:

Models for spatial panel data
(Static and dynamic models)
Models for large spatial panel data
(Common effects vs. spatial
dependence)

*Modeling spatial dependence, spatial heterogeneity
and nonlinearities*

Roberto Basile

Topics:

Spatio-Temporal Autoregressive
Semiparametric Model for the analysis
of regional economic data

September 20, 2018

9-13

Model uncertainty and spatial econometrics

Jesús Crespo Cuaresma

Topics:

Bayesian Model Averaging (BMA)
Spatial filtering and BMA

Bibliography for the course

- Le Sage J, Pace K (2009), Introduction to Spatial Econometrics. Boca Raton: Taylor and Francis
- Anselin L. (2003), Spatial Externalities, Spatial Multipliers and Spatial Econometrics. International Regional Science Review, 26, 153-166
- Elhorst, P. (2014), Spatial Econometrics: From Cross-sectional Data to Spatial Panels. Springer, London
- Basile R., Minguez, J.M. (2017), “Advances in spatial econometrics: parametric vs. semiparametric spatial autoregressive models”, in Commendatore Pasquale, and Kubin Ingrid (Eds.), Springer
- Basile R., Minguez R. and Durban M. (2017), Spatio-Temporal Autoregressive Semiparametric Models for the analysis of regional economic data, mimeo
- Basile, R., M. Durbán, R. Mínguez, J. M. Montero, and J. Mur (2014), Modeling regional economic dynamics: Spatial dependence, spatial heterogeneity and nonlinearities, Journal of Economic Dynamics and Control, 48, 229 – 245
- Crespo Cuaresma, J., Doppelhofer, G., Feldkircher, M. (2014). The Determinants of Economic Growth in European Regions. Regional studies, Vol. 48, Nr. 1, pp. 44-67.
- Crespo Cuaresma, J., Feldkircher, M. (2013). Spatial Filtering, Model Uncertainty and the Speed of Income Convergence in Europe. Journal of Applied Econometrics, Vol. 28, Issue 4, pp. 720-741.

Software used & Recommendations:

R (<http://www.r-project.org/>): Install the complete version of R on your laptop.
Knowledge required: statistics, econometrics, notions of regional economics

Fees:

No fees. However, participants will be invited to make their own arrangements regarding their travel, accommodation and meals. A list of recommended hotels with negotiated rates for school participants and further logistical details will be provided after acceptance – We strongly suggest that you book your accommodation as soon as possible!

Venue:

WU Vienna University of Economics and Business
Address: Welthandelsplatz 1, 1020 Vienna, Austria

Certificate:

Participants will receive a certificate for the number of hours attended. Interested students should check with their universities to see if these hours are transferable into ECTS credits.