

Field Course: Spatial Economics

Instructors:

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(xkcd)

Spatial Economics in a nutshell

Economic models deal with **dynamic processes**—historically economists focused on time (think: economic cycles, intertemporal decisions).

Spatial economics raises the question **where and why** economic processes take place. It focuses on questions such as **proximity, location, spatial interactions, and urban structures**. It incorporates **geographic concepts** (e.g., spatial boundaries) to analyze economic processes.

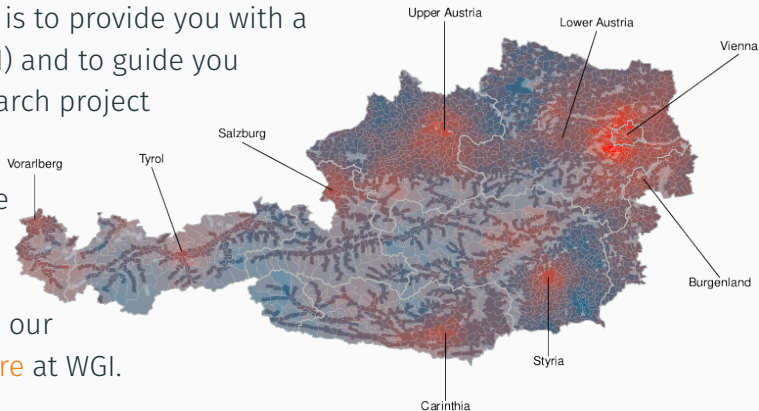
We use **econometric tools** to bring space into economic analyses.

Topics and Outcomes

This course is structured along current debates in the scientific community, especially **inequality**, **growth convergence**, and **environmental issues**.

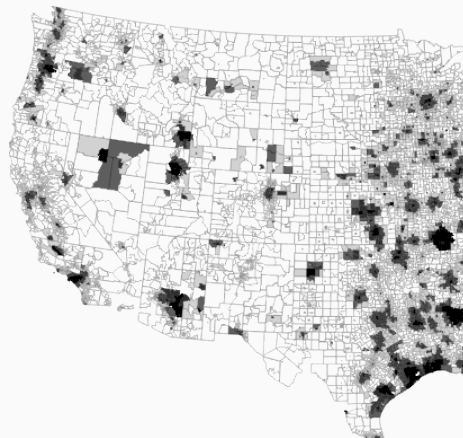
Our goal as instructors is to provide you with a spatial toolkit (**Course I**) and to guide you through your own research project (**Course II**).

You will learn to handle **spatial data**, **make plots** like this and have access to use our **computing infrastructure** at WGI.



Field Course (I)

- Understand what spatial processes do
...and how they influence economic models
- Hands-on experience: Theory+coding sessions
- GIS, spatial statistics & data visualization
- Spatial econometrics training using R
- Get to know current issues in spatial economic research



Research & Policy Seminar (II)

- Real data, real issues, focus on spatial inequality
- R spatial ecosystem deep dive: big data, parallel computing & more!
- Write your own scientific paper, for example...

... can richer areas pressure public policy for less pollution?

Econometrics

... does segregation affect student performance in local communities?

Visualization

... do people favor equal neighborhoods when migrating?

Deep R

... where does growth go? Analyzing local income distributions

Data Intensive

Field Course	Research&Policy
1 Getting started: Algebra, OLS, Projections	
2 Spatial Basics: Borders, Weights, Shapefiles	
3 Visuals: Plotting, Mapping, ESDA	
4 Econometrics I: Beyond OLS	I: Current topics, own project
5 Econometrics II: Impacts, Spatial Processes	II: Advanced Spatial R Routines
6 Econometrics III: Advanced Regression techniques	III: Deep-dive into R
7 Special topics: GWR & friends	IV: Hacking Session
Open Classroom for both courses [optional]	
8 Final Exam [Dec]	V: Final Presentations [Jan]

Grading & Evaluation

Field Course

Exam (65%)

Assignments (20%)

In-class discussion or
student inputs (15%)

Research&Policy

Class project/paper (75%)

Presentation (15%)

Active participation (10%)

Grading Key

≥ 90% --> Sehr gut

≥ 75% --> Gut

≥ 60% --> Befriedigend

≥ 50% --> Genügend

Questions?

