Summer Semester 2013

Agent-based Modelling for Social Scientists

Prof. Dr. Nils B. Weidmann

Time

Monday, 22/07/13-Friday, 26/07/13, 9:00-16:30, H 306

Content

Computational agent-based models (ABM) have become increasingly popular in the social sciences. The purpose of an ABM is to simulate the emergence of macro-level social phenomena based on the interaction of individuals. This course provides a comprehensive introduction to ABM, drawing on examples across political science, sociology and economics. Using the free NetLogo software, students learn how to design agent-based simulation models from scratch and evaluate their output. The course starts with a discussion of ABM principles, and proceeds with a step-by-step introduction of essential ABM building blocks and their corresponding implementation in NetLogo. We also cover the integration of empirical data and the automatic execution of multiple simulation ("batch") runs, as well as the integration of ABM with spatial data (GIS). In supervised lab sessions, students develop their own implementation of an ABM. The exercises are based on the simple NetLogo programming language, and no prior experience in programming is required. It is required that students bring their own laptop for the exercises (no lab computers provided).

Literature

- Epstein, Joshua M. 2006. Generative Social Science: Studies in Agent-based Computa- tional Modeling. Princeton: Princeton University Press.
- Gilbert, Nigel and Klaus G. Troitzsch. 2005. Simulation for the Social Scientist. 2nd ed. Open University Press.
- Gilbert, Nigel. 2007. Agent-based Models. London: Sage.

Examination Form

Term paper

Registration

Registration via LSF and StudIS is required until 28/04/13.