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Dynamic Economic Policy (SS 2025)

Course Description

This course has two primary objectives. First, we explore dynamic processes through a formal and computational analysis of linear and nonlinear difference equations. Second, we deepen our understanding of economics by developing various economic models and analyzing their implications for economic policy.

Topics

1 Exemplary fields of application: Business cycle models – growth models – financial market models – Cobweb models – housing market models
2 Analytical methods: Linear difference equations – nonlinear difference equations – systems of difference equations
3 Numerical methods: Time series and phase-space analysis – bifurcation diagrams – Monte Carlo studies
4 Software programs: Mathematica

Times and Rooms

Lecture: Monday, 14:00-16:00, FMA/01.19, starts on April, 28
Exercise: Wednesday, 12:00-14:00, RZ/01.02, starts on May, 7

Course Material

Course material will be provided on the Virtueller Campus.

Literature

Day, R. (1994): Complex economic dynamics. MIT Press, Cambridge. De Grauwe, P. (2012): Lectures on behavioral macroeconomics. Princeton University Press, Princeton. Galor, O. (2006): Discrete dynamical systems. Springer-Verlag, Berlin. Gandolfo, G. (2009): Economic dynamics. Springer-Verlag, Berlin. Hommes, C. (2013): Behavioral rationality and heterogeneous expectations in complex economic systems. Cambridge University Press, Cambridge. Lines, M. (2005): Nonlinear dynamical systems in economics. Springer-Verlag, Berlin. Medio, A. und Lines, M. (2001): Nonlinear dynamics: A primer. Cambridge University Press, Cambridge. Puu, T. und Sushko, I. (2006): Business cycle dynamics: models and tools. Springer-Verlag: Berlin. Rosser, J. B. (2000): From catastrophe to chaos: a general theory of economic discontinuities. Kluwer Academic Publishers, Boston. Shone, R. (2002): Economic Dynamics. Cambridge University Press, Cambridge.