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Fakultät für Naturwissenschaften, Fachbereich Physik

Announcement

HS Ökonophysik: Advanced Interdisciplinary Statistical Methods

Description

Stochastic methods offer a theoretical approach to the behaviour of complex systems with a good balance between reducing complexity and gaining predictive power. We consider techniques beyond the scope or our regular course work as well as examples in economics and physics.

Content

The following topics are planned:

- Introduction to stochastic processes and models
- Non-Markovian processes and “fat tails”
- Lévy processes
- Statistical distribution of income and wealth
- Network theory
- Correlations and clustering
- Agent-based modelling
- Stochastic modelling in quantum dynamics

Prerequisites

Formal prerequisites: none

Recommended prerequisite: working knowledge of mathematical stochastics (Wahrscheinlichkeitsrechnung)

Literature

- textbook chapters
- review articles
- original research articles

Additional Information

This seminar is mainly aimed at master students; the first two topics are accessible to bachelor students as well.

Lecturer

PD Dr. Jürgen Stockburger