Announcement

Seminar 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:

1. Stochastic Processes and Models (introduction)
2. Non-Markovianity and Fat Tails
3. Levy Processes
4. Case Study for Modeling: Income and Wealth Distributions
5. Random Networks
6. Correlations and Clustering
7. Agent Based Models.

Prerequisites

Formal prerequisites: none

Recommended prerequisites: working knowledge of mathematical stochastics (Wahrscheinlich-keitsrechnung)

Literature

- textbook chapters
- review articles
- Original research articles

Additional Information

The module refers to bachelor and master students. Bachelor students can choose whether to present in German or in English.

Seminar: 3 ECTS credits

Advanced seminar: 4 ECTS credits

Lecturer

PD Dr. Jürgen Stockburger, Institute of Complex Quantum Systems