Symposium Statistical Physics of Economic and Financial Systems (SYEF)

jointly organized by
the Physics of Socio-economic Systems Division (SOE),
the Dynamics and Statistical Physics Division (DY), and
the Working Group "Young DPG" (AKjDPG)

Tobias Wand
Institute of Theoretical Physics
Center for Nonlinear Science (CeNoS) Münster
Westfälische Wilhelms-Universität Münster
Germany
t_wand01@uni-muenster.de

Martin Heßler
Institute of Theoretical Physics
Center for Nonlinear Science (CeNoS) Münster
Westfälische Wilhelms-Universität Münster
Germany
m_hess23@uni-muenster.de

On a microscopic level, financial and economic systems consist of many individual agents whose investment decisions and business interactions lead to complex emergent phenomena such as crises and cooperation. Macroscopically, these systems are often described by just a few time series; e.g. many individual microscopic trades of one stock in a financial market are represented as a single stock price time series. Both the microscopic and the macroscopic perspective are amenable to the toolbox of physicists and complex systems research: simulations of microscopic agents and the analysis of their emergent behaviour have been a key component of computational physics research and time series analysis methods are wide-spread throughout many areas of physics. This symposium therefore highlights some of the recent advances in modelling and data-driven approaches of econophysics and discusses how they can help to solve problems in classical economics research.

Overview of Invited Talks and Sessions

(Lecture hall H 0105)

Invited Talks

SYEF 1.1	Thu	9:30–10:00	H 0105	**Economic Complexity Theory and the General Economic Theory: Applying Synergetics** — •Wei-Bin Zhang
SYEF 1.2	Thu	10:00–10:30	H 0105	**Opinion Formation in the World Trade Network** — •Dima Shepelyansky
SYEF 1.3	Thu	10:30–11:00	H 0105	**Transfer Entropy in financial stock markets** — •Leonidas Sandoval
SYEF 1.4	Thu	11:15–11:45	H 0105	**Statistical-Physics Theory of the Long Memory in Market-Order Flows and its Empirical Validation in the Tokyo Stock Exchange** — •Kiyoshi Kanazawa
SYEF 1.5	Thu	11:45–12:15	H 0105	**Ergodicity Economics and the Insurance Problem** — •Benjamin Skjold, Ole Peters, Colm Connaughton

Sessions

SYEF 1.1–1.5	Thu	9:30–12:15	H 0105	**Statistical Physics of Economic and Financial Systems**