

Physics of Socio-economic Systems Division Fachverband Physik sozio-ökonomischer Systeme (SOE)

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Overview of Invited Talks and Sessions

(Lecture halls GÖR 226 and HSZ 01-03; Poster P2/4OG)

Young Scientist Award for Socio- and Econophysics (YSA) - Award Session and Prize Talks

SOE 5.1	Mon	15:00–15:45	HSZ 01	After more than two decades: The bounded confidence model reconsidered — ●RAINER HEGSELMANN
SOE 5.2	Mon	16:00–16:30	HSZ 01	Multilayer modeling and analysis of complex socio-economic systems — ●MANLIO DE DOMENICO
SOE 5.3	Mon	16:30–17:00	HSZ 01	Quantifying Science and Art — ●ROBERTA SINATRA

Invited Tutorial talks

SOE 1.1	Sun	16:00–16:50	HSZ 03	Stochastic models for particles in turbulence — ●BERNHARD MEHLIG
SOE 1.2	Sun	16:50–17:40	HSZ 03	From Percolation and Explosive Percolation to a unifying principle — ●JAN NAGLER
SOE 1.3	Sun	17:40–18:30	HSZ 03	Spreading dynamics on networks: from social interactions to epidemics and pandemics — ●FAKHTEH GHANBARNEJAD

Invited and Topical Talks

SOE 7.1	Tue	9:30–10:00	GÖR 226	One model to rule them all — ●JENS TIMMER
SOE 7.3	Tue	10:15–10:45	GÖR 226	Gaming the system - Analyzing Uber price data reveals anomalous supply shortages — ●MALTE SCHRÖDER, DAVID STORCH, PHILIP MARZAL, MARC TIMME
SOE 7.6	Tue	11:15–11:45	GÖR 226	Data driven modelling of spatio-temporal chaos in extended dynamical systems — ●ULRICH PARLITZ, SEBASTIAN HERZOG, FLORENTIN WÖRGÖTTER, ROLAND S. ZIMMERMANN, JONAS ISENSEE, GEORGE DATSERIS
SOE 7.8	Tue	12:00–12:30	GÖR 226	Limits to predictability of complex systems dynamics — JONATHAN BRISCH, ●HOLGER KANTZ
SOE 8.1	Wed	12:15–12:45	HSZ 02	A physics of governance networks: critical transitions in contagion dynamics on multilayer adaptive networks with application to the sustainable use of renewable resources — ●JONATHAN F. DONGES, FABIAN GEIER, WOLFRAM BARFUSS, MARC WIEDERMANN
SOE 9.1	Wed	15:00–15:30	GÖR 226	Cross frequency coupling in next generation inhibitory neural mass models — ●SIMONA OLMI, ANDREA CENI, DAVID ANGULO GARCIA, ALESSANDRO TORCINI
SOE 9.2	Wed	15:30–16:00	GÖR 226	Brain functional connectivity asymmetry — ●JAROSLAV HLINKA
SOE 9.3	Wed	16:00–16:30	GÖR 226	Partial Synchronization Patterns in the Brain — ●ECKEHARD SCHÖLL

Invited talks of the joint symposium SYNC

See SYNC for the full program of the symposium.

SYNC 1.1	Mon	9:30–10:00	HSZ 01	Photonic Reservoir Computing and its Application to Optical Communication — ●INGO FISCHER, APOSTOLOS ARGYRIS
SYNC 1.2	Mon	10:00–10:30	HSZ 01	Metal-oxide resistance switching memory devices as artificial synapses for brain-inspired computing — ●SABINA SPIGA
SYNC 1.3	Mon	10:30–11:00	HSZ 01	Towards brain-inspired photonic computing — ●WOLFRAM PERNICE
SYNC 1.4	Mon	11:15–11:45	HSZ 01	Photonic Recurrent Ising Sampler — ●CHARLES ROQUES-CARMES, YICHEN SHEN, CRISTIAN ZANOCI, MIHIKA PRABHU, FADI ATIEH, LI JING, TENA DUBČEK, CHENKAI MAO, MILES JOHNSON, VLADIMIR ČEPERIĆ, JOHN JOANNOPOULOS, DIRK ENGLUND, MARIN SOLJAČIĆ
SYNC 1.5	Mon	11:45–12:15	HSZ 01	Beyond von Neumann systems: Computational memory for efficient AI — ●IREM BOYBAT

Invited talks of the joint symposium SYSD

See SYSD for the full program of the symposium.

SYSD 1.1	Mon	9:30– 9:55	HSZ 02	Disentangling transport in topological insulator thin films down to the nanoscale — ●FELIX LÜPKE
SYSD 1.2	Mon	9:55–10:20	HSZ 02	Spintronics with Terahertz Radiation: Probing and driving spins at highest frequencies — ●TOM SEBASTIAN SEIFERT, TOBIAS KAMPFRATH
SYSD 1.3	Mon	10:20–10:45	HSZ 02	Non-radiative voltage losses in organic solar cells — ●JOHANNES BENDUHN
SYSD 1.4	Mon	10:45–11:10	HSZ 02	Multivalent ions for tuning the phase behaviour of protein solutions — ●OLGA MATSARSKAIA
SYSD 1.5	Mon	11:10–11:35	HSZ 02	Network Dynamics under Constraints — ●MALTE SCHRÖDER
SYSD 1.6	Mon	11:35–12:00	HSZ 02	Exciton spectroscopy of van der Waals heterostructures — ●PHILIPP NAGLER

Invited talks of the joint symposium SYCE

See SYCE for the full program of the symposium.

SYCE 1.1	Wed	9:30–10:00	HSZ 02	Towards a carbon-free energy system: Expectations from R&D in renewable energy technologies — ●BERND RECH, RUTGER SCHLATMANN
SYCE 1.2	Wed	10:00–10:30	HSZ 02	Decarbonizing the Heating Sector - Challenges and Solutions — ●FLORIAN WEISER
SYCE 1.3	Wed	10:30–11:00	HSZ 02	The challenge of anthropogenic climate change - Earth system analysis can guide climate mitigation policy — ●MATTHIAS HOFMANN
SYCE 1.4	Wed	11:15–11:45	HSZ 02	A carbon-free Energy System in 2050: Modelling the Energy Transition — ●CHRISTOPH KOST, PHILIP STERCHELE, HANS-MARTIN HENNING
SYCE 1.5	Wed	11:45–12:15	HSZ 02	The transition of the electricity system to 100% renewable energy: agent-based modeling of investment decisions under climate policies — ●KRISTIAN LINDGREN

Invited talks of the joint symposium SYES

See SYES for the full program of the symposium.

SYES 1.1	Thu	9:30–10:00	HSZ 02	Understanding the physical variables driving mechanosensing — ●PERE ROCA-CUSACHS
SYES 1.2	Thu	10:00–10:30	HSZ 02	Mechanics of life: Cellular forces and mechanics far from thermodynamic equilibrium — ●TIMO BETZ
SYES 1.3	Thu	10:30–11:00	HSZ 02	A hydrodynamic approach to collective cell migration in epithelial tissues — ●JAUME CASADEMUNT
SYES 1.4	Thu	11:15–11:45	HSZ 02	The spindle is a composite of two permeating polar gels — DAVID ORIOLA, BENJAMIN DALTON, FRANZISKA DECKER, FRANK JULICHER, ●JAN BRUGUES
SYES 1.5	Thu	11:45–12:15	HSZ 02	Adding magnetic properties to epitaxial graphene — ●RODOLFO MIRANDA
SYES 2.1	Thu	15:00–15:30	HSZ 01	Interactions in assemblies of surface-mounted magnetic molecules — ●WOLFGANG KUCH

SYES 2.2	Thu	15:30–16:00	HSZ 01	Towards phononic circuits based on optomechanics — •CLIVIA M. SOTOMAYOR-TORRES
SYES 2.3	Thu	16:00–16:30	HSZ 01	Optical properties of 2D materials and heterostructures — •JANINA MAULTZSCH
SYES 2.4	Thu	16:45–17:15	HSZ 01	Bringing nanophotonics to the atomic scale — •JAVIER AIZPURUA
SYES 2.5	Thu	17:15–17:45	HSZ 01	Infrared signatures of the coupling between vibrational and plasmonic excitations — •ANNEMARIE PUCCI

Sessions

SOE 1.1–1.3	Sun	16:00–18:30	HSZ 03	Tutorials: Stochastic Processes and Applications to Biology and Socio-Economic Systems (joint session SOE/DY/TUT)
SOE 2.1–2.7	Mon	9:30–11:15	GÖR 226	Energy Systems (joint SOE/DY/AKE)
SOE 3.1–3.3	Mon	11:15–12:00	GÖR 226	Financial Markets, Risk Management and Stochastic Processes
SOE 4.1–4.4	Mon	11:30–12:30	ZEU 147	Physics of Power Grids (joint session DY/SOE)
SOE 5.1–5.3	Mon	15:00–17:00	HSZ 01	Young Scientist Award for Socio- and Econophysics
SOE 6.1–6.19	Mon	17:00–20:00	P2/4OG	Poster
SOE 7.1–7.11	Tue	9:30–13:15	GÖR 226	Data analytics for dynamical systems I (Focus Session joint with DY and BP) (joint session SOE/DY/PPP/BP)
SOE 8.1–8.2	Wed	12:15–13:00	HSZ 02	Climate Impact and Human-Economy-Nature Interactions (accompanying the symposium SYCE)
SOE 9.1–9.5	Wed	15:00–17:15	GÖR 226	Partial Synchronization Patterns in Neuronal Networks I (Focus Session joint with DY / SOE / BP) (joint session SOE/DY)
SOE 10.1–10.8	Wed	15:00–17:30	ZEU 118	Data Analytics, Extreme Events, Nonlinear Stochastic Systems, and Networks (joint session DY/SOE)
SOE 11.1–11.4	Wed	17:30–18:30	GÖR 226	Networks - From Topology to Dynamics I (joint SOE/DY/BP)
SOE 12	Wed	18:30–19:30	GÖR 226	Annual Member's Assembly
SOE 13.1–13.7	Thu	9:30–11:30	GÖR 226	Focus Session: Opinion Formation
SOE 14.1–14.4	Thu	11:30–12:30	GÖR 226	Social Systems, Opinion and Group Formation
SOE 15.1–15.3	Thu	12:30–13:15	GÖR 226	Traffic, Urban and Regional Systems I
SOE 16.1–16.4	Thu	15:00–16:00	GÖR 226	Evolutionary Game Theory and Networks (joint SOE/DY/BP)
SOE 17.1–17.5	Thu	16:00–17:30	GÖR 226	Traffic, Urban and Regional Systems I
SOE 18.1–18.4	Thu	17:30–18:30	GÖR 226	Networks - From Topology to Dynamics II (joint SOE/DY/BP)
SOE 19.1–19.2	Fri	9:30–10:00	GÖR 226	Data analytics for dynamical systems II (Focus Session joint with DY and BP) (joint session SOE/PPP/DY)
SOE 20.1–20.6	Fri	10:00–12:00	GÖR 226	Partial Synchronization Patterns in Neuronal Networks II (Focus Session joint with DY / SOE / BP) (joint session SOE/DY)

Annual General Meeting of the Physics of Socio-economic Systems Division

Wednesday 18:30–19:30 GÖR 226

1. Report of the Chairpersons
2. Announcements and Discussion of future Activities
3. Elections
4. Miscellaneous