

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

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Overview of Invited Talks and Sessions

(Lecture hall H3; Poster P)

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

SOE 1.1	Wed	15:00–15:45	YSA	Quantifying science and art — ●ROBERTA SINATRA
SOE 1.2	Wed	15:45–16:30	YSA	Multilayer modeling and analysis of complex socio-economic systems — ●MANLIO DE DOMENICO

Plenary talks related to SOE

PV III	Mon	16:30–17:15	Audimax 1	Complex networks with complex nodes — ●RAISSA D'SOUZA
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Topical Talks

SOE 4.1	Thu	10:00–10:30	H3	Felix Auerbach and Zipf's Law for Cities — ●DIEGO RYBSKI, ANTONIO CICCONE
SOE 4.2	Thu	10:30–11:00	H3	Envy-induced class separation in societies of competing agents — ●CLAUDIUS GROS
SOE 7.1	Fri	10:00–10:30	H6	Why Ergodicity Breaking from Climate Change matters in Ecosystems? — ●JAN NAGLER

Invited talks of the joint symposium SKM Dissertation Prize 2021 (SYSD)

See SYSD for the full program of the symposium.

SYSD 1.1	Mon	10:00–10:25	Audimax 2	Avoided quasiparticle decay from strong quantum interactions — ●RUBEN VERRESEN, RODERICH MOESSNER, FRANK POLLMANN
SYSD 1.2	Mon	10:25–10:50	Audimax 2	Co-evaporated Hybrid Metal-Halide Perovskite Thin-Films for Optoelectronic Applications — ●JULIANE BORCHERT
SYSD 1.3	Mon	10:55–11:20	Audimax 2	Attosecond-fast electron dynamics in graphene and graphene-based interfaces — ●CHRISTIAN HEIDE
SYSD 1.4	Mon	11:20–11:45	Audimax 2	The thermodynamics of stochastic systems with time delay — ●SARAH A.M. LOOS
SYSD 1.5	Mon	11:50–12:15	Audimax 2	First Results on Atomically Resolved Spin-Wave Spectroscopy by TEM — ●BENJAMIN ZINGSEM

Invited talks of the joint symposium The Physics of CoViD Infections (SYCO)

See SYCO for the full program of the symposium.

SYCO 1.1	Mon	13:30–14:00	Audimax 1	A Tethered Ligand Assay to Probe SARS-CoV-2:ACE2 Interactions — MAGNUS BAUER, SOPHIA GRUBER, ADINA HAUSCH, LUKAS MILLES, THOMAS NICOLAUS, LEONARD SCHENDEL, PILAR LOPEZ NAVAJAS, ERIK PROCKO, DANIEL LIETHA, RAFAEL BERNADI, HERMANN GAUB, ●JAN LIPFERT
SYCO 1.2	Mon	14:00–14:30	Audimax 1	From molecular simulations towards antiviral therapeutics against COVID-19 — ●REBECCA WADE
SYCO 1.3	Mon	14:45–15:15	Audimax 1	The physical phenotype of blood cells is altered in COVID-19 — MARKÉTA KUBÁNKOVÁ, MARTIN KRÄTER, BETTINA HOHBERGER, ●JOCHEN GUCK
SYCO 1.4	Mon	15:15–15:45	Audimax 1	Extended lifetime of respiratory droplets in a turbulent vapor puff and its implications on airborne disease transmission — ●DETLEF LOHSE, KAI LEONG CHONG, CHONG SHEN NG, NAOKI HORI, MORGAN LI, RUI YANG, ROBERTO VERZICCO
SYCO 1.5	Mon	15:45–16:15	Audimax 1	Beyond the demographic vaccine distribution: Where, when and to whom should vaccines be provided first? — ●BENNO LIEBCHEN, JENS GRAUER, FABIAN SCHWARZENDAHL, HARTMUT LÖWEN

Invited talks of the joint symposium **Advanced neuromorphic computing hardware: Towards efficient machine learning (SYNC)**

See SYNC for the full program of the symposium.

SYNC 1.1	Wed	10:00–10:30	Audimax 1	Equilibrium Propagation: a Road for Physics-Based Learning — ●DAMIEN QUERLIOZ
SYNC 1.2	Wed	10:30–11:00	Audimax 1	Machine Learning and Neuromorphic Computing: Why Physics and Complex Systems are Indispensable — ●INGO FISCHER
SYNC 1.3	Wed	11:00–11:30	Audimax 1	Photonic Tensor Core Processor and Photonic Memristor for Machine Intelligence — ●VOLKER SORGER
SYNC 1.4	Wed	11:45–12:15	Audimax 1	Material learning with disordered dopant networks — ●WILFRED VAN DER WIEL
SYNC 1.5	Wed	12:15–12:45	Audimax 1	In-memory computing with non-volatile analog devices for machine learning applications — ●JOHN PAUL STRACHAN

Prize talks of the joint **Awards Symposium (SYAW)**

See SYAW for the full program of the symposium.

SYAW 1.1	Wed	13:30–14:00	Audimax 1	Organic semiconductors - materials for today and tomorrow — ●ANNA KÖHLER
SYAW 1.2	Wed	14:00–14:30	Audimax 1	PbTe/CdTe nanocomposite as an attractive candidate for room-temperature infrared detectors — ●GRZEGORZ KARCZEWSKI
SYAW 1.3	Wed	14:40–15:10	Audimax 1	Fingerprints of correlation in electronic spectra of materials — ●LUCIA REINING
SYAW 1.4	Wed	15:10–15:40	Audimax 1	Artificial Spin Ice: From Correlations to Computation — ●NAËMI LEO
SYAW 1.5	Wed	15:40–16:10	Audimax 1	From microwave optomechanics to quantum transport – carbon nanotubes as highly versatile hybrid devices — ●ANDREAS K. HÜTTEL
SYAW 1.6	Wed	16:20–16:50	Audimax 1	Quantum spin dynamics of a spin-1/2 antiferromagnetic Heisenberg-Ising chain — ●ZHE WANG
SYAW 1.7	Wed	16:50–17:20	Audimax 1	Imaging the effect of electron transfer at the atomic scale — ●LAERTE PATERA

Invited talks of the joint symposium **Spain as Guest of Honor (SYES)**

See SYES for the full program of the symposium.

SYES 1.1	Wed	13:30–13:40	Audimax 2	DFMC-GEFES — ●JULIA HERRERO-ALBILLOS
SYES 1.2	Wed	13:40–14:10	Audimax 2	Towards Phononic Circuits based on Optomechanics — ●CLIVIA M. SOTOMAYOR TORRES

SYES 1.3	Wed	14:10–14:40	Audimax 2	Adding magnetic functionalities to epitaxial graphene — •RODOLFO MIRANDA
SYES 1.4	Wed	14:45–15:15	Audimax 2	Bringing nanophotonics to the atomic scale — •JAVIER AIZPURUA
SYES 1.5	Wed	15:15–15:45	Audimax 2	Hydrodynamics of collective cell migration in epithelial tissues — •JAUME CASADEMUNT
SYES 1.6	Wed	15:45–16:15	Audimax 2	Understanding the physical variables driving mechanosensing — •PERE ROCA-CUSACHS

Invited talks of the joint symposium **Climate and energy: Challenges and options from a physics perspective (SYCE)**

See SYCE for the full program of the symposium.

SYCE 1.1	Thu	13:30–14:00	Audimax 1	The challenge of anthropogenic climate change - Earth system analysis can guide climate mitigation policy — •MATTHIAS HOFMANN
SYCE 1.2	Thu	14:00–14:30	Audimax 1	Towards a carbon-free energy system: Expectations from R&D in renewable energy technologies — •BERND RECH, RUTGER SCHLATMANN
SYCE 1.3	Thu	14:30–15:00	Audimax 1	Decarbonizing the Heating Sector - Challenges and Solutions — •FLORIAN WEISER
SYCE 1.4	Thu	15:15–15:45	Audimax 1	A carbon-free Energy System in 2050: Modelling the Energy Transition — •CHRISTOPH KOST, PHILIP STERCHELE, HANS-MARTIN HENNING
SYCE 1.5	Thu	15:45–16:15	Audimax 1	The transition of the electricity system to 100% renewable energy: agent-based modeling of investment decisions under climate policies — •KRISTIAN LINDGREN

Sessions

SOE 1.1–1.2	Wed	15:00–16:30	YSA	Young Scientist Award for Socio-and Econophysics
SOE 2.1–2.4	Wed	17:00–18:00	P	Poster
SOE 3	Wed	18:00–19:00	MVSOE	Member’s Assembly
SOE 4.1–4.2	Thu	10:00–11:00	H3	Dynamics and Scaling of Cities and Societies
SOE 5.1–5.1	Thu	11:15–11:45	H3	Financial Systems
SOE 6.1–6.2	Thu	11:45–12:45	H3	Dynamics of Social and Adaptive Networks I
SOE 7.1–7.2	Fri	10:00–11:00	H6	Socio-economic models of climate change impact
SOE 8.1–8.3	Fri	11:15–12:45	H6	Dynamics of Social and Adaptive Networks II
SOE 9.1–9.4	Fri	13:30–16:00	ESS	Symposium: Synchronization Patterns in Complex Dynamical Networks (organized by Jakub Sawicki, Sabine Klapp, Markus Bär and Jens Christian Claussen) (joint session DY/SOE)

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

Wednesday 18:00–19:00 MVSOE

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