Symposium Nonequilibrium Collective Behavior in Open Classical and Quantum Systems (SYQS)

jointly organised by
the Dynamics and Statistical Physics Division (DY),
the Low Temperature Physics Divison (TT),
the Biological Physics Division (BP),
the Chemical and Polymer Physics Division (CPP), and
the Physics of Socio-economic Systems Division (SOE)

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Nonequilibrium classical and quantum systems coupled to thermal or (driven) non-equilibrium environments have recently been shown to exhibit rich collective phenomena and phase transitions without equilibrium counterparts. From the classical side, intriguing examples are flocking and phase separation in active matter, but also patterns and bifurcations in driven-diffusive systems and spontaneous parity-time symmetry breaking in systems involving nonreciprocal couplings. From the quantum side much interest has been devoted, e.g., to ordering and phase transitions in nonequilibrium steady states, the formation of time crystals, superradiance, as well as phase transitions or critical behavior in time. The symposium and the accompanying focus session is devoted to connections between the quantum and the classical realms, as they have been explored recently both in theory and experiment.

Overview of Invited Talks and Sessions

(Lecture hall H1)

Invited Talks

SYQS 1.1	Thu	15:00–15:30	H1	**Active quantum flocks** — •Markus Heyl
SYQS 1.2	Thu	15:30–16:00	H1	**Robust dynamics and function in stochastic topological systems** — •Evelyn Tang
SYQS 1.3	Thu	16:00–16:30	H1	**Nonequilibrium Dynamics of Disorder-Driven Ultracold Fermi Gases** — •Artur Widera
SYQS 1.4	Thu	16:45–17:15	H1	**Topological classification of driven-dissipative nonlinear systems** — •Oded Zilberberg
SYQS 1.5	Thu	17:15–17:45	H1	**Learning dynamical behaviors in physical systems** — •Vincenzo Vitelli

Sessions

SYQS 1.1–1.5	Thu	15:00–17:45	H1	**Nonequilibrium Collective Behavior in Open Classical and Quantum Systems**