

Complexity and Topology in Quantum Matter (SYQM)

jointly organised by
 the Semiconductor Physics Division (HL),
 the Low Temperature Physics Division (TT),
 the Dynamics and Statistical Physics Division (DY), and
 the Thin Films Division (DS)

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Over the past two decades the mathematical concept of topology has emerged into a powerful tool for understanding and classifying quantum matter. The existence of global invariants in a physical system not only gives rise to novel types of quantum phases beyond Landau's concept of broken symmetries and local order parameters, but may also lead to "topological protection" of otherwise rather delicate quantum states with respect to external perturbations, with obvious application potential for future quantum technologies. Topological physics is, in fact, ubiquitous. This symposium is dedicated to giving an overview of its unifying relevance in widely differing areas of condensed matter physics, ranging from electronic band structures to quantum magnetism to photonics devices. The talks will also cover the impact of topology in out-of-equilibrium systems.

Overview of Invited Talks and Sessions

(Lecture hall H1)

Invited Talks

SYQM 1.1	Fri	9:30–10:00	H1	The role of crystalline symmetries in topological materials: the topological materials database — ●MAIA VERGNIORY
SYQM 1.2	Fri	10:00–10:30	H1	Microwave Bulk and Edge Transport in HgTe-Based 2D Topological Insulators — ●ERWANN BOCQUILLON, MATTHIEU C. DARTAILH, ALEXANDRE GOURMELON, HIROSHI KAMATA, KALLE BENDIAS, SIMON HARTINGER, JEAN-MARC BERROIR, GWENDAL FÈVE, BERNARD PLAÇAIS, LUKAS LUNCZER, RAIMUND SCHLERETH, HARTMUT BUHMANN, LAURENS MOLENKAMP
SYQM 1.3	Fri	10:30–11:00	H1	Spectral Sensitivity of Non-Hermitian Topological Systems — ●JAN CARL BUDICH
SYQM 1.4	Fri	11:15–11:45	H1	Topological photonics and topological lasers with coupled vertical resonators — ●SEBASTIAN KLEMBT
SYQM 1.5	Fri	11:45–12:15	H1	Spectroscopic Studies of the Topological Magnon Band Structure in a Skyrmion Lattice — ●MARKUS GARST

Sessions

SYQM 1.1–1.5	Fri	9:30–12:15	H1	Complexity and Topology in Quantum Matter
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