

Programme of Workshop

“Modern Aspects in Quantum Materials and Quantum Technology”

17-20 Nov 2022 in Greifswald

Thursday, 17th November (Venue: Lecture Hall, Institute of Physics, Felix-Hausdorff-Str. 6)

Session 1: Physics Colloquium and Poster Session

16:00: **Opening:** Matthias Eschrig

16:15: **Wolfgang Belzig (U Konstanz)** *Higher-dimensional topology and fractional states of matter in superconducting systems*

17:30: **Poster Session + Reception**

P1: **Emma Minarelli (Chalmers UT)** *Quantum transport in interacting nanodevices: from quantum dots to single-molecule transistors*

P2: **Danilo Nikolic (U Konstanz)** *Critical temperature of superconductor-ferromagnet bilayers with helimagnetic metals*

P3: **Oladunjoye Awoga (Lund U)** *Possibility of robust topological superconductivity one-dimensional systems*

P4: **Kevin Marc Seja (Chalmers UT)** *Quasiclassical theory & finite element method for superconductivity*

P5: **Simone Traverso (U Genova)** *Role of the edges in a quasicrystalline Haldane model*

P6: **Lucia Vigliotti (U Genova)** *Unconventional transport of Cooper pairs in topological Josephson junctions*

Friday, 18th November (Venue: Hotel Kronprinz, Lange Str. 22)

Session 2: Topological Quantum Systems and Devices

Session Chair: Peter Samuelsson

09:00: **Andre Eckart (TU Berlin)** *Controlling (topological) quantum systems using driving and dissipation*

09:45: **Holger Fehske (U Greifswald)** *Exotic criticality and symmetry-protected topological states in dimerised fermion, boson and spin chain models*

10:30-11:00: Coffee Break

Session Chair: Mikael Fogelström

11:00: [Rubén Seoane Souto \(Lund U\)](#) *Superconductor-semiconductor hybrid devices for quantum science and technology*

11:45: **Discussion Session**

12:30-14:00: Lunch break

Session 3: Correlated and Unconventional Superconductors

Session Chair: Matthias Eschrig

14:00: [Tim Wehling \(U Hamburg\)](#) *Coherence and pairing fluctuations in strongly correlated superconductors*

14:45: [Sergey Borisenko \(IFW Dresden\)](#) *ARPES on superconductors*

15:30-16:00: Coffee Break

Session Chair: Sergey Borisenko

16:00: [Andreas Kreisel \(U Leipzig\)](#) *(Un-) Conventional pairing in multiband superconductors: Role of Fermi surface geometry*

16:45: [Tomas Löfwander \(Chalmers UT\)](#) *Stationary non-equilibrium superconductivity and thermopower in d-wave superconductors*

Saturday, 19th November (Venue: Hotel Kronprinz, Lange Str. 22)

Session 4: Dynamics and Sensing in Quantum Systems and Materials

Session Chair: Ivan Khaymovich

09:00: [Jürgen König \(U Duisburg\)](#) *Charge-Carrier Dynamics in Nanostructures*

09:45: [Peter Samuelsson \(Lund U\)](#) *Quantum Fokker-Planck Master Equation for Continuous Feedback Control*

10:30-11:00: Coffee Break

Session Chair: John Saunders

11:00: [Alexander Balatsky \(Nordita Stockholm\)](#) *Hidden and Entangled Orders*

11:45: [Matthias Geilhufe \(Chalmers UT\)](#) *Complex order in quantum materials*

12:30-14:00: Lunch break

Session 5: Superfluids, Bose Einstein Condensates, Optical Lattices

Session Chair: Alexander Balatsky

14:00: [John Saunders \(RHUL\)](#) *Topological superfluid ^3He ; future prospects*

14:45: [Anna Posazhennikova \(U Greifswald\)](#) *Chaos in finite systems of Bose Einstein Condensates*

15:30-16:00: Coffee Break

Session Chair: Jürgen König

16:00: [Ivan Khaymovich \(Nordita Stockholm\)](#) *Anisotropy-mediated localization*

16:45: **Discussion Session**

19:00: Conference dinner at Hotel Kronprinz

Sunday, 20st November (Venue: Hotel Kronprinz, Lange Str. 22)

Session 6: Yu-Shiba-Rusinov States

Session Chair: Tomas Löfwander

09:00: [Felix von Oppen \(FU Berlin\)](#) *Yu-Shiba-Rusinov states in real metals*

09:45: [Jens Paaske \(U Kopenhagen\)](#) *Microwave response of Yu-Shiba-Rusinov states*

10:30-11:00: Coffee Break

11:00: **Discussion Session**

11:45: **Closing Statement**

12:00: Departure