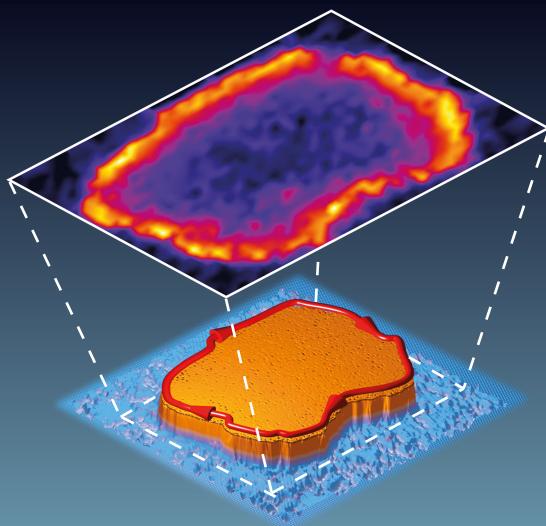


INTERNATIONAL SYMPOSIUM ON

MAJORANA PHYSICS

HAMBURG, JUNE 3-5, 2020



INVITED SPEAKERS:

ANDREI BERNEVIG (PRINCETON)
ANNICA BLACK-SCHAFFER (UPPSALA)
CHING-KAI CHIU (BEIJING)
HONG-JUN GAO (BEIJING)
TETSUO HANAGURI (TOKYO)
LEO KOUWENHOVEN (DELFT)
DANIEL LOSS (BASEL)
ROMAN LUTCHYN (SANTA BARBARA)
CHARLES MARCUS (COPENHAGEN)
LAURENS MOLENKAMP (WÜRZBURG)

DIRK MORR (CHICAGO)
TITUS NEUPERT (ZÜRICH)
FELIX VON OPPEN (BERLIN)
YUVAL OREG (REHOVOT)
STEPHAN RACHEL (MELBOURNE)
SANKAR DAS SARMA (MARYLAND)
JAVAD SHABANI (NEW YORK)
BJÖRN TRAUZETTEL (WÜRZBURG)
TONG ZHANG (SHANGHAI)
IGOR ZUTIC (BUFFALO)

The Symposium is co-organized by the ERC Advanced Grant Group „ADMIRE“, the Hamburg Cluster of Excellence „Advanced Imaging of Matter“, and the DFG Collaborative Research Center 925 on „Correlated Quantum Systems“



**CLUSTER OF EXCELLENCE
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IMAGING OF MATTER**

SFB
SFB 925: Light induced dynamics and control
of strongly correlated quantum systems



Fundamentals of Majorana Physics based on Different Platforms: Recent Advances in Experiment & Theory

- Hamburg, June 3 – 5, 2020 -

Place: Campus Jungiusstrasse

Wednesday, 03.06.20

10:00-10:10 Welcome and Introduction

10:10-10:50 Sankar Das Sarma (University of Maryland):

„Majorana zero modes in semiconductor nanowires and other hybrid platforms“

10:50-11:30 Charlie Marcus (Microsoft-Q and University of Copenhagen):

„Evidence for Majoranas using ferromagnetic exchange“

11:30-12:10 Laurens Molenkamp (University of Würzburg):

„Absence of evidence for chiral Majorana modes in quantum anomalous Hall-superconductor devices“

12:10-14:00 Lunch

14:00-14:40 Roman Lutchyn (Microsoft-Q, Santa Barbara):

„Signatures of topological ground-state degeneracy in Majorana islands“

14:40-15:20 Leo Kouwenhoven (Microsoft-Q and TU Delft):

„Majorana qubits“

15:20-15:50 Coffee Break

15:50-16:30 Yuval Oreg (Weizmann Institute, Rehovot):

„Topological superconductivity and emerging Majorana states“

16:30-17:10 Hongjun Gao (CAS, Beijing):

„Observation of Majorana zero mode and conductance plateau in an iron-based superconductor“

17:10-17:50 Ching-Kai Chiu (KITS, Beijing):

„Beyond zero-bias peaks of Majorana vortex modes“

19:00-21:00 Public Lecture

Dirk Morr (University of Illinois, Chicago):

„Wie baue ich einen Quantencomputer?“

Thursday, 04.06.20

- 09:30-10:10 **Andrei Bernevig (Princeton University):**
„*End and hinge Majoranas*“
- 10:10-10:50 **Titus Neupert (University of Zurich):**
„*Majorana states in higher order topological insulators*“
- 10:50-11:20 Coffee Break
- 11:20-12:00 **Igor Zutic (University of Buffalo):**
„*Two-dimensional platforms for Majorana states and phase measurement of topological superconductivity*“
- 12:00-12:40 **Javad Shabani (New York University):**
„*Progress in realizing topological superconductivity in planar Josephson junctions*“
- 12:40-14:10 Lunch
- 14:10-14:50 **Annica Black-Schaffer (Uppsala University):**
„*Majorana fermions and YSR states from magnetic impurities*“
- 14:50-15:30 **Dirk Morr (University of Illinois, Chicago):**
„*Quantum engineering of Majorana fermions*“
- 15:30-16:00 Coffee Break
- 16:00-16:40 **Stephan Rachel (University of Melbourne):**
„*Majorana modes in magnet-superconductor hybrid systems*“
- 16:40-17:20 **Howon Kim (University of Hamburg):**
„*Observation of Majorana end states and chiral Majorana edge modes in 1D and 2D model-type magnet-superconductor hybrid systems controlled on the atomic level*“
- 19:30-22:00 **Conference Excursion with Dinner**
(on invitation only)

Friday, 05.06.20

09:30-10:10 **Felix von Oppen (FU Berlin):**

„Majorana bound states and photon-assisted tunneling“

10:10-10:50 **Björn Trauzettel (University of Würzburg):**

„Majorana bound states on the helical edge“

10:50-11:20 Coffee Break

11:20-12:00 **Daniel Loss (University of Basel):**

„Topological superconductivity and Majorana fermions in RKKY systems“

12:00-12:40 **Tong Zhang (Fudan University, Shanghai):**

„Recent progress in STM study of zero-bias modes and defect states in (Li,Fe)OHFeSe“

12:40-14:10 Lunch

14:10-14:50 **Tetsuo Hanaguri (RIKEN, Tokyo):**

„Zero-energy bound states in the vortex core and at the excess iron in Fe(Se,Te)“

14:50-15:30 **Thore Posske (University of Hamburg):**

„Vortex Majorana braiding in a finite time“

15:30-15:45 **Conference Summary and Closing**