



TOCHA-Workshop International Workshop "Topological Matter – Applications to Metrology"

2nd and 3rd of November 2023

Tentative Program (as of 2023-08-24)

Venue: Physikalisch-Technische Bundesanstalt
Conference Centre (Seminarzentrum A), Kohlrausch building
Bundesallee 100
38116 Braunschweig

Contact: TOCHA-Workshop@ptb.de



Thursday, November 2, 2023

I#: Invited oral | C#: Contributed oral | P#: Poster

8:45 – 9:15	Registration	
9:15 – 9:30	Welcome Address	
9:30 – 9:50	PTB, National Metrology Institute of Germany Hansjörg Scherer Physikalisch-Technische Bundesanstalt (DE)	
9:50 – 10:05	The TOCHA Project Sergio Valenzuela Catalan Institute of Nanoscience and Nanotechnology (ES)	
10:05 – 10:35	Coffee Break & Posters P1: Role of Disorder in the Robustness of the Quantum Hall Effect in Graphene (IMDEA Nanociencia, ES). P2: Research Perspectives on Quantum Anomalous Hall Effect in Topological Insulator Devices at INRIM (INRIM, IT)	P1 P2
10:35 – 11:20	Transport in Topological Materials Laurens W. Molenkamp Julius-Maximilians University Würzburg (DE)	I1
11:20 – 11:50	Towards a Quantum Hall Resistance Standard at Zero Magnetic Field Using the QAHE Charles Gould Julius-Maximilians University Würzburg (DE)	C1
11:50 – 12:50	Lunch Buffet & Posters	P1 P2
12:50 – 13:35	Current flow in Quantum Anomalous Hall Effect and Implications for Metrology David Goldhaber-Gordon Stanford University (US)	I2
13:35 – 14:00	Quantum Anomalous Hall Effect Devices at Zero Magnetic Field for Resistance Metrology Dinesh Patel Physikalisch-Technische Bundesanstalt (DE)	C2
14:00 – 14:30	Quantum Anomalous Hall Resistance Standard with a Permanent Magnet Nobu-Hisa Kaneko National Institute of Advanced Industrial Science and Technology, National Metrology Institute of Japan (JP)	I3
14:30 – 15:00	Coffee Break & Posters	P1 P2

15:00 – 15:45	Quantum Anomalous Hall Effect in Magnetic Heterostructure of Topological Insulator Minoru Kawamura RIKEN Center for Emergent Matter Science (JP)	I4
15:45 – 16:05	2D Organic Polymers Lattice Design for Topology Miroslav Položij Technical University Dresden, Helmholtz-Zentrum Dresden-Rossendorf (DE)	C3
16:05 – 16:25	Fraunhofer Pattern in the Presence of Majorana and Andreev Bound States Patrik Recher Technical University Braunschweig (DE)	C4
16:25 – 16:45	Quasiparticle Poisoning Effect on Electron Transport Through a Majorana Wire Florinda Viñas Boström Technical University Braunschweig (DE)	C5
16:45 – 17:05	Topological States Probed by Structured Light Peter Lemmens Technical University Braunschweig (DE)	C6
17:05 – 17:25	All-Optical Skyrmion Control in the Bulk Chiral Magnet $\text{Fe}_{0.75}\text{Co}_{0.25}\text{Si}$ Jantje Kalin Physikalisch-Technische Bundesanstalt (DE)	C7
17:25 – 17:35	Housekeeping Notes	
	<i>Transfer to hotels</i>	
	<i>Free time</i>	
19:00	Workshop Dinner <i>Restaurant in Braunschweig, t.b.d.</i>	

End of day 1

Friday, November 3, 2023

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9:00 – 9:05	Good Morning Address	
9:05 – 9:50	Development and Implementation of a Quantum Current Sensor at NIST Jason M. Underwood National Institute of Standards and Technology (US)	I5
9:50 – 10:10	WTe₂ Topological Insulator Dimitre Dimitrov Bulgarian Academy of Sciences (BG)	C8
10:10 – 10:40	Coffee Break & Posters	P1 P2
10:40 – 11:00	Planar Hall Effect in Ca_xTa_yO_{3-δ}/SrTiO₃ Anjana Dogra CSIR-National Physical Laboratory, Academy of Scient. and Innov. Research (IN)	C9
11:00 – 11:45	Improving Quantization Accuracy in Quantum Spin and Anomalous Hall Effects Tomasz Dietl International Research Centre MagTop, Polish Academy of Sciences (PL)	I6
11:45 – 12:45	Lunch Buffet & Posters	P1 P2
12:45 – 13:30	Quantum Hall Effect and Metrology Klaus von Klitzing Max Planck Institute for Solid State Research (DE)	I7
13:30 – 13:40	Conclusion & Farewell	
	<i>Departure, or</i>	
13:50 – 16:00 (ca.)	Laboratory Visits at PTB Braunschweig <i>Stations t.b.d</i>	

End of event