



Max Planck-UBC-UTokyo Centre for Quantum Materials Annual Meeting September 19th – 21st, 2022

Venue: **Robert H. Lee Alumni Centre**, 6163 University Boulevard, Vancouver, BC
Sept 19 morning session, **Jack Poole Hall** (2nd Floor)
Sept 19 afternoon onwards, **Robert H. Lee Boardroom** (3rd Floor)

Day 1, September 19, Monday

Morning Session Location: Jack Poole Hall

8:45 – 9:00 Coffee and registration

Opening and Introduction

9:00 – 10:30 **MP-UBC-UT Centre and Joint PhD**

Andrea Damascelli (UBC), Matthew Evenden (UBC), Bernhard Keimer (MPI Stuttgart), Wolfram Ressel (UStuttgart), Makoto Gonokami (RIKEN – UTokyo), Teruo Fujii (UTokyo)

Musical Performance

Makoto Gonokami (RIKEN – UTokyo)

The Role of Academia as a Platform for Social Change

10:30 – 11:00 *Coffee-break*

Quantum Matter

11:00 – 11:30 Martin Dressel (UStuttgart)

Molecular Quantum Materials: gapped magnetic ground state in κ -(BEDT-TTF) $_2$ Cu $_2$ (CN) $_3$

11:30 – 12:00 Tim Langen (UStuttgart)

Dipolar supersolids: From magnetic atoms to molecules

12:00 – 12:15 Rafael Haenel (UBC – MPI Stuttgart – UStuttgart)

Spectroscopy of Higgs and Collective Modes of the Superconducting Condensate

12:15 – 13:30 *Lunch-break*

Afternoon session Location: Robert H. Lee Family Boardroom

Non-Equilibrium

13:30 – 14:00

Ryo Shimano (UTokyo)

Study of superconductivity from nonequilibrium

14:00 – 14:15

Sydney Dufresne (UBC)

Electron-lattice interplay in the candidate excitonic insulator Ta₂NiSe₅

14:15 – 14:45

Dirk Manske (MPI Stuttgart)

Theory of Higgs spectroscopy: latest results

14:45 – 15:15

Coffee-break

Nickelates

15:15 – 15:45

Kateryna Foyevstova (UBC)

Elusive Fermi surface of infinite-layer nickelates

15:45 – 16:15

George Sawatzky *by video* (UBC)

Stabilization of singlet hole-doped state in infinite-layer nickelate superconductors

16:15 – 16:30

Johannes Falke (MPI Dresden)

Bulk-sensitive ARPES on LaNiO₃ single crystals

16:30 – 16:45

Rebecca Pons (MPI Stuttgart – UStuttgart – UBC)

Rare-Earth Nickelates: from Perovskite to Infinite-Layer

16:45 – 17:00

Simon Godin (UBC)

Favored orbital orientation in anion-doped nickel oxide

Evening session Location: Brimacombe Building

18:00 – 20:00

Evening Cocktail Reception and Poster Session
Stewart Blusson Quantum Matter Institute
(2355 East Mall, Vancouver)

Day 2, September 20, Tuesday

Morning Session Location: Robert H. Lee Family Boardroom

Spectroscopy

- 9:00 – 9:30** Bernhard Keimer (MPI Stuttgart)
Resonant x-ray scattering from quantum materials
- 9:30 – 9:45** Daisuke Takegami (MPI Dresden)
Orbital imaging using hard x-ray photoemission
- 9:45 – 10:00** Andrea Marino (MPI Dresden)
Resonant and non-resonant inelastic x-ray scattering on uranium compounds
- 10:00 – 10:30** Yusuke Morita (UTokyo)
Lyman induced absorption imaging of an exciton condensate in cuprous oxide using a dilution refrigerator

10:30 – 11:00 *Coffee-break*

Topology

- 11:00 – 11:30** Ziliang Ye (UBC)
Sliding avalanche in 3r-MoS₂ exfoliation
- 11:30 – 12:00** Benjamin Zhou (UBC)
Non-Abelian topological superconductivity in maximally twisted double-layer spin-triplet valley-singlet superconductors
- 12:00 – 12:30** Satoru Nakatsuji (UTokyo)
Electrical and strain control of a magnetic Weyl semimetallic state

12:30 – 13:30 *Lunch-break*

Afternoon Session Location: Robert H. Lee Family Boardroom

- 13:30 – 14:00** Sarah Burke (UBC)
Quasiparticle interference observation of the topologically nontrivial drumhead surface state in ZrSiTe

Materials

14:00 – 14:30

Solveig Aamlid (UBC)

Phase stability in entropy stabilized oxides with the α -PbO₂ structure

14:30 – 15:00

Liu Hao Tjeng (MPI Dresden)

Imaging the orbital switching in VO₂ and Ti₂O₃ across the metal-insulator transition

15:00 – 16:00

Business Meeting (Board Members)

Evening Session, various locations

16:00 – 17:00

Stewart Blusson Quantum Matter Institute Lab Tour

Location: Brimacombe Building, 2355 East Mall, Vancouver

17:00 – 19:00

President's Dinner (on invitation only)

University of Stuttgart – UBC Joint PhD Program

19:00 – 21:00

Chan Centre for Performing Arts (RSVP required)

Orchestral Performance

Location: 6265 Crescent RD, Vancouver

Day 3, September 21, Wednesday

Morning Session Location: Robert H. Lee Family Boardroom

Spin-Orbit Coupling

- 9:00 – 9:30** Hidenori Takagi (MPI Stuttgart – UTokyo – UStuttgart)
Superconductivity in cationic metal $Ba_{1-x}K_xSbO_3$ - comparison with anionic metal $Ba_{1-x}K_xBiO_3$
- 9:30 – 9:45** Niclas Heinsdorf (UBC - MPI Stuttgart – UStuttgart)
Topology of Magnetic Excitations
- 9:45 – 10:00** Valentin Zimmermann (MPI Stuttgart – UStuttgart – UBC)
Propagating Spin-Orbit Excitons in a Correlated Metal

10:00 – 10:30 *Coffee-Break*

Transport

- 10:30 – 11:00** Masaki Oshikawa (UTokyo)
Unified framework for nonlinear conductivities
- 11:00 – 11:30** Graham Baker (UBC)
Non-local microwave electrodynamics in ultra-pure $PdCoO_2$
- 11:30 – 12:00** Kensuke Kobayashi (UTokyo)
Mesoscopic physics and quantum sensing
- 12:00** *Closing*