

Magnetism: From Exotic States of Matter to Quantum Technologies

Max Planck-UBC-UTokyo Centre for Quantum Materials Summer School
May 6 – 8, 2025

Venue: Room 2020/2030, 2332 Main Mall, Vancouver, BC V6T 1Z4

Day 1, May 6, Tuesday

Welcome

8:45 – 9:00	Registration
9:00 – 9:30	UBC QMI Deputy Scientific Director Prof. Marcel Franz & Investigator Prof. Alannah Hallas UBC QMI Scientific Director Prof. Andrea Damascelli Consul General of Germany His Excellency Marc Eichhorn Consul General of Japan His Excellency Takahashi Yoshiaki UBC President and Vice-Chancellor Prof. Benoit-Antoine Bacon

Morning Session

9:30 – 10:30	Alannah Hallas (UBC) <i>Introduction to magnetism and the design of novel quantum magnets</i>
10:30 – 11:00	Coffee break
11:00 – 12:30	Libor Smejkal (MPI) <i>Introduction to Altermagnetism and Spin Symmetries</i>
12:30 – 14:00	Lunch

Afternoon Session

14:00 – 15:00	Hao Tjeng (MPI) <i>Observation of Zhang-Rice singlets in cuprates using electron spectroscopy</i>
15:00 – 15:30	Coffee break
15:30 – 17:00	Sarah Dunsinger (SFU) <i>Introduction to spin liquids</i>

Day 2, May 7, Wednesday

Morning Session

9:00 – 10:30 George Sawatzky (UBC)
Introduction to forms of exchange interactions leading to Zhang Rice singlets and 3 spin polarons in Cuprates and Nickelates

10:30 – 11:00 Coffee break

11:00 – 12:00 Kentaro Kitagawa (UTokyo)
Magnetic probes under ultrahigh pressure and finding nickelate superconductors

12:00 – 14:00 Lunch

Afternoon Session

14:00 – 15:00 Bernhard Keimer (MPI)
Towards strain-modulated Terahertz magnonics

15:00 – 15:30 Coffee break

15:30 – 16:30 Akito Sakai (UTokyo)
Strange metal and superconductivity in the strongly correlated multipole system

16:30 – 17:30 Business meeting for Board members
Location: Room 488, 2355 East Mall (Blusson QMI building)

Dinner

18:00 – 20:00 Location: Browns Crafthouse UBC
6111 University Blvd #101, Vancouver

Day 3, May 8, Thursday

Morning Session

9:00 – 10:00 Mohammad Khalifa (UBC)
Solid-state Spin Qubits: Control and Readout

10:00 – 10:30 Coffee break

10:30 – 11:30 Rafael Haenel (Photonic)
Photonic's Path to Scalable, Fault-Tolerant Quantum Computing

11:30 – 12:30 Ashley N. Warner (D-Wave)
Introduction to Quantum Annealing

12:30 – 13:30 Lunch

13:30 – 15:30 Free time/Museum of Anthropology/Beach walk

Poster Session

15:30 – 17:30 Welcome – Andrea Damascelli
Artistic collaboration – Alannah Hallas and Jg Mair

Location: Brimacombe, 2355 East Mall (Blusson QMI building, 2nd and 3rd floors)