

Max Planck-UBC-UTokyo Centre for Quantum Materials
 2019 Workshop, December 9-10
 University of British Columbia, Vancouver Campus

All events will take place at Sage (6331 Crescent Road, Vancouver, BC), in the *Sage East* room, except where noted in the program.

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| Sun, Dec 8 | | |
| 18:00 – 20:00 | Welcome reception | Location: Sage IDEAS Lounge, room 174 |
| Mon, Dec 9 | | |
| 8:30 – 8:50 | Coffee and registration | |
| 8:50 – 9:00 | Andrea Damascelli and Ke Zou (UBC) | Welcome and introduction |
| Session I Non-equilibrium Chair: Ke Zou (UBC) | | |
| 9:00 – 9:30 | Ryo Shimano (UTokyo) | Non-reciprocal response in superconductors in the terahertz regime |
| 9:30 – 10:00 | Dirk Manske (MPI) | Higgs spectroscopy in non-equilibrium: latest results |
| 10:00 – 10:30 | Syngye Todo (UTokyo) | Optical bistability in a low-photon-density regime |
| 10:30 – 11:00 | Coffee break | |
| Session II Student presentations Chair: Ryo Shimano (UTokyo) | | |
| 11:00 – 11:15 | Min-Jae Kim (MPI) | Coherent response in the excitonic insulator Ta ₂ NiSe ₅ Scanning tunneling microscopy observation of the drumhead surface state in ZrSiTe |
| 11:15 – 11:30 | Brandon Stuart (UBC) | |
| 11:30 – 11:45 | Amy Qu (UBC) | Atomic engineering of monolayer graphene: Inducing Kekule bond order by adatom deposition |
| 11:45 – 12:00 | Berend Zwartsenberg (UBC) | Spin-orbit controlled metal-insulator transition in Sr ₂ IrO ₄ |
| 12:00 – 13:30 | Lunch | |
| Session III van der Waals materials Chair: Bernhard Keimer (MPI) | | |
| 13:30 – 14:00 | Masaki Oshikawa (UTokyo) | Flat bands in honeycomb networks |
| 14:00 – 14:30 | Toshiya Ideue (UTokyo) | Anomalous photovoltaic effect in non-centrosymmetric van der Waals nanostructures |
| 14:30 – 15:00 | Ian Affleck (UBC) | Kondo effect in graphene due to hydrogen impurities |
| 15:00 – 15:30 | Coffee break | |

| Session IV Spin and Magnetism I Chair: Hidenori Takagi (MPI) | | |
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| 15:30 – 16:00 | Alannah Hallas (UBC) | Metallic and non-metallic duality in the 4d pyrochlore $\text{Lu}_2\text{Rh}_2\text{O}_7$ |
| 16:00 – 16:30 | Kentaro Kitagawa (UTokyo) | Pseudospin magnetism and phase diagram in quest of Kitaev spin liquid |
| 16:30 – 17:00 | Zenji Hiroi (UTokyo) | Odd-parity multipole orders in the spin/orbit-coupled metal $\text{Cd}_2\text{Re}_2\text{O}_7$ |
| 17:00 – 17:30 | Tomohiro Takayama (MPI) | Spin-orbital-entangled quantum magnet on a honeycomb lattice |
| 17:30 – 20:00 | Poster session | Location: Sage West |
| 19:00 – 21:00 | Dinner | |

Tue, Dec 10

| Session V Topological materials Chair: Alannah Hallas (UBC) | | |
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| 8:30 – 9:00 | Junji Yumoto (UTokyo) | Laser ablation and laser material processing of non-metallic materials |
| 9:00 – 9:30 | Marcel Franz (UBC) | Black holes, wormholes and the Sachdev-Ye-Kitaev model |
| 9:30 – 10:00 | Andreas Schnyder (MPI) | Accidental and symmetry-enforced band crossings in topological materials |
| 10:00 – 10:30 | Liu Hao Tjeng (MPI) | Electronic structure of SmB_6 : a resonant and non-resonant inelastic x-ray scattering study |
| 10:30 – 11:00 | Coffee break | |

| Session VI Fe- and Ni- based superconductors Chair: Takeshi Kondo (UTokyo) | | |
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| 11:00 – 11:30 | Ke Zou (UBC) | Monolayer FeSe superconductors |
| 11:30 – 12:00 | George Sawatzky (UBC) | The NdNiO_2 and comparison with Cuprates |
| 12:00 – 12:30 | Eva Benckiser (MPI) | Layer-selective reduction of rare-earth nickelate superlattices |
| 12:30 – 14:00 | Lunch | |
| 12:30 – 14:00 | Board member lunch | Location: Sage room 176 |

| Session VII Cuprates Chair: Eva Benckiser (MPI) | | |
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| 14:00 – 14:30 | Kateryna Foyevtsova (UBC) | Electron and hole 2D gases in the $\text{SrBiO}_3/\text{LaLuO}_3$ heterostructure |
| 14:30 – 15:00 | Martin Bluschke (MPI) | Stabilization of 3-dimensional charge order in YBCO via epitaxial growth |

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| 15:00 – 15:30 | Takeshi Kondo (UTokyo) | Multilayered high-Tc copper oxide superconductors studied by laser angle-resolved photoemission spectroscopy |
| 15:30 – 16:00 | Coffee break | |
| Session VIII | Spin and Magnetism II Chair: Liu Hao Tjeng (MPI) | |
| 16:00 – 16:30 | Jurgen Smet (MPI) | A potpourri of recent accomplishments with UT and UBC |
| 16:30 – 17:00 | Hidenori Takagi (MPI) | Giant diamagnetism of three-dimensional Dirac electrons in antiperovskite |
| 17:00 – 17:10 | Andrea Damascelli and Ke Zou (UBC) | Closing remarks |
| 17:30 – 18:30 | QMI lab tour | Location: Stewart Blusson Quantum Matter Institute, 2355 East Mall |
| 19:00 | Dinner for speakers | Location: Water St. Café, 300 Water Street |

Note: To encourage discussion, we suggest speakers follow the guideline: long talks - 20 minutes + 10 minutes; short talks - 12 minutes + 3 minutes.