

# APW 2019 & TSINGHUA-RIKEN-KITS JOINT WORKSHOP

## Highlights of Condensed Matter Physics

Date : December 6 ~ 8, 2019

Venue: Conference Room, 4th floor of Nanotechnology Building, Tsinghua university

Friday, Dec. 6	
08:20-08:50	Registration
<b>08:50-10:40</b>	<b>Session 1</b> <span style="float:right">Chair: Yayu Wang</span>
08:50-09:00	Opening remarks <span style="float:right">Qi-Kun Xue and Naoto Nagaosa</span>
09:00-09:30	<b>Sadamichi Maekawa</b> <i>RIKEN</i> Spin Mechatronics in Spintronics
09:30-10:00	<b>Nitin Samarth</b> <i>Pennsylvanian State University</i> Topological Insulator Heterostructures & Spintronics
10:00-10:20	<b>Ching-Kai Chiu</b> <i>Kavli Institute for Theoretical Sciences, UCAS</i> Doubling theorem for Fermi points, degenerate points, and exceptional points in 2D non-hermitian systems
10:20-10:40	<b>Yong Xu</b> <i>Tsinghua University</i> Intrinsic magnetic topological insulator $MnBi_2Te_4$
10:40-11:00	Coffee Break & Group Photo
<b>11:00-12:30</b>	<b>Session 2</b> <span style="float:right">Chair: Fuchun Zhang</span>
11:00-11:30	<b>Tao Xiang</b> <i>Institute of Physics, CAS</i> Metalizing sigma-bonding electrons: a universal route to high-Tc superconductivity
11:30-12:00	<b>Christos Panagopoulos</b> <i>Nanyang Technological University</i> Emergent Superconductivity in Low Dimensions
12:00-12:30	<b>Bohm-Jung Yang</b> <i>Seoul National University</i> Failure of Nielsen-Ninomiya theorem and fragile band topology of twisted bilayer graphene
12:30-14:00	Lunch & Poster
<b>14:00-16:00</b>	<b>Session 3</b> <span style="float:right">Chair: Oleg Sushkov</span>
14:00-14:30	<b>Dung-Hai Lee</b> <i>University of California, Berkeley</i> A holographic theory of topological phase transition
14:30-15:00	<b>Guang-Ming Zhang</b> <i>Tsinghua University</i> Quantum phase transitions of the $Z_2$ intrinsic topological ordered phase
15:00-15:30	<b>Subroto Mukerjee</b> <i>Indian Institute of Science</i> Transport, multifractality, and scaling at the localization transition in quasiperiodic systems
15:30-16:00	<b>Naoki Ogawa</b> <i>RIKEN</i> Nonreciprocal responses in photodynamics
16:00-16:20	Coffee Break
<b>16:20-18:00</b>	<b>Session 4</b> <span style="float:right">Chair: Subroto Mukerjee</span>
16:20-16:50	<b>Naoto Nagaosa</b> <i>RIKEN and The University of Tokyo</i> Spin cluster scattering
16:50-17:20	<b>Chung-Hou Chung</b> <i>National Chiao-Tung University</i> Hyperscaling beyond Ginzburg-Landau-Wilson paradigm
17:20-17:50	<b>Oleg P. Sushkov</b> <i>University of New South Wales</i> Quantum Lifshitz criticality in a frustrated two-dimensional XY model

Saturday, Dec. 7	
<b>09:00-10:40</b>	<b>Session 1</b> <span style="float:right">Chair: Naoto Nagaosa</span>
09:00-09:30	<b>Yong-Baek Kim</b> <i>University of Toronto</i> Probing multipolar phenomena in quantum materials
09:30-10:00	<b>Ryotaro Arita</b> <i>University of Tokyo</i> Quantum Crystal Structure in the 250 K Superconducting Lanthanum Hydride
10:00-10:20	<b>WanJun Jiang</b> <i>Tsinghua University</i> Zero magnetism for efficient spintronics
10:20-10:40	<b>Lexian Yang</b> <i>Tsinghua University</i> Topological Electronic Structure and Its Temperature Evolution in Antiferromagnetic Topological Insulator $MnBi_2Te_4$
10:40-11:00	Coffee Break
<b>11:00-12:30</b>	<b>Session 2</b> <span style="float:right">Chair: Yong-Baek Kim</span>
11:00-11:30	<b>Xincheng Xie</b> <i>Peking University</i> Topological properties of Jackie-Rebba zero-mode
11:30-12:00	<b>Tai-Kai Ng</b> <i>Hong Kong University of Science and Technology</i> Beyond Fermi-Liquid Theory: the k-Fermi liquids
12:00-12:30	<b>Minoru Kawamura</b> <i>RIKEN</i> Quantum anomalous Hall effect in magnetic-proximity-coupled topological insulator
12:30-14:00	Lunch & Poster
<b>14:00-16:00</b>	<b>Session 3</b> <span style="float:right">Chair: Ying-Hao Chu</span>
14:00-14:30	<b>Joel Moore</b> <i>University of California, Berkeley</i> Origin of strong and/or quantized optical properties of topological semimetals
14:30-15:00	<b>P. Blair Blakie</b> <i>University of Otago</i> Phase ordering of a ferromagnetic spin-1 condensate
15:00-15:30	<b>Shun-Qing Shen</b> <i>The University of Hong Kong</i> Theory of Magnetoresistance in Three-Dimensional Dirac Materials
15:30-16:00	<b>Binghai Yan</b> <i>Weizmann Institute of Science</i> Berry phase and beyond in magnetic topological materials
16:00-16:20	Coffee Break
<b>16:20-18:00</b>	<b>Session 4</b> <span style="float:right">Chair: Pu Yu</span>
16:20-16:50	<b>Xianhui Chen</b> <i>University of Science and Technology of China</i> Strain- and magnetic field-induced quantum critical point in FeSe
16:50-17:20	<b>Jaeyun Yu</b> <i>Seoul National University</i> Chern Insulator in Two-Dimensional Metal-Organic Framework Kagome Lattice
17:20-17:50	<b>Ying-Hao Chu</b> <i>National Chiao Tung University</i> Atomic Engineering of Complex Oxides

Sunday, Dec. 8	
<b>09:00-10:40</b>	<b>Session 1</b> <span style="float:right">Chair: Shuaihua Ji</span>
09:00-09:30	<b>Yoshihiro Iwasa</b> <i>RIKEN</i> Nonreciprocal transport as a probe of quantum metallic states in 2D superconductors
09:30-10:00	<b>Guo-Qing Zheng</b> <i>Institute of Physics, CAS</i> Topological superconductivity in correlated and non-correlated electron systems
10:00-10:20	<b>Mamoru Matsuo</b> <i>University of Chinese Academy of Sciences</i> Electron spin transport driven by surface plasmon polariton
10:20-10:40	<b>Can-Li Song</b> <i>Tsinghua University</i> Fulleride superconductivity at the two-dimensional limit
10:40-11:00	Coffee Break
<b>11:00-12:30</b>	<b>Session 2</b> <span style="float:right">Chair: Joel Moore</span>
11:00-11:30	<b>Zheng-Yu Weng</b> <i>Tsinghua University</i> Signature of fractionalization as probed by ARPES in the cuprate
11:30-12:00	<b>Masatoshi Sato</b> <i>Kyoto University</i> A unified view of non-Hermitian topological physics: bulk-boundary correspondence, skin-effects, and so on
12:00-12:30	<b>Xingjiang Zhou</b> <i>Institute of Physics, CAS</i> ARPES on Electronic Structure of the Parent Cuprate Compounds and its Doping Evolution
12:30-14:00	Lunch & Poster
<b>14:00-16:20</b>	<b>Session 3</b> <span style="float:right">Chair: Zhengyu Weng</span>
14:00-14:30	<b>Tetsuo Hanaguri</b> <i>RIKEN</i> Zero-energy bound states in the vortex core and at excess irons in $Fe(Se,Te)$
14:30-15:00	<b>Vic Law</b> <i>Hong Kong University of Science and Technology</i> Giant Orbital Magneto-electric effect and Current-driven Magnetization Switching in Twisted Bilayer Graphene
15:00-15:20	<b>Yan Zhang</b> <i>Peking University</i> Isomorphic gap anisotropy in tetragonal magnetic and superconducting phases in $Sr_{1-x}Na_xFe_2As_2$
15:20-15:40	<b>Ding Zhang</b> <i>Tsinghua University</i> Ising superconductivity in few-layer stanine
15:40-16:00	<b>Wei Li</b> <i>Tsinghua University</i> Evidence of anisotropic Majorana bound states in $WS_2$
16:00-16:20	Closing remarks <span style="float:right">Fuchun Zhang</span>