

**Swiss-Japan bilateral workshop**  
**Trends in Theory of Correlated Materials (TTCM2019)**  
**October 7-9, 2019 – Kyoto**

**First day (Oct.7, Monday)**

**Registration**

8:40-9:10

**Session 1: Chair Giamarchi**

9:10-9:15 Norio Kawakami

Opening

9:15-9:45 Gianni Blatter

Photonic gas-liquid transition in the driven-dissipative Bose Hubbard model

9:45-10:15 Masahiro Sato

Laser- and heat-driven phenomena in correlated magnets

10:15-10:45 Dmitry Abanin

Ergodicity breaking beyond many-body localization: quantum scars and non-Abelian symmetries

10:45-11:05 Coffee Break

**Session 2: Chair Furusaki**

11:05-11:35 Tsuneya Yoshida

Non-Hermitian topological phenomena for strongly correlated systems

11:35-12:05 Titus Neupert

Non-Hermitian topoelectrical circuits: Exceptional points and the reciprocal skin effect

12:05-12:35 Tomonari Mizoguchi

Flat bands and higher-order topological phase in polymerized triptycene

12:35-13:30 Lunch

**Session 3: Chair Maruyama**

13:30-14:00 Toshikaze Kariyado

Flat band and strong correlation in slightly twisted bilayers of generic type

14:00-14:20 Tobias Wolf

Electrically Tunable Flat Bands and Magnetism in Twisted Bilayer Graphene

14:20-14:40 Antonio Štrkalj

Localization properties of the interpolating Aubry-André-Fibonacci model

14:40-15:00 Samuel Gozel

SU(3) 3-box symmetric spin chains

15:00-15:20 Coffee Break

**Session 4:** Chair Furukawa

15:20-15:50 Takahiro Morimoto

Nonreciprocal Landau-Zener tunneling

15:50-16:20 Michele Filippone

Universal Hall Response(s) in Strongly Correlated Quantum Systems

16:20-16:50 Hiroyasu Matsuura

Effect of Phonon Drag on Seebeck Coefficient Based on Linear Response Theory: Application to FeSb<sub>2</sub>

16:50-17:10 Coffee Break

**Session 5:** Chair Miyahara

17:10-17:40 Markus Müller

Quantum interference in magnetic clusters: Tuning and suppressing quantum tunneling

17:40-18:10 Chisa Hotta

Controlling momentum-dependent spin textures in insulating antiferromagnets

**Second day (Oct.8, Tuesday)**

**Session 6:** Chair Fujimoto

9:15-9:45 Tatsuhiko Ikeda

Floquet-Theoretical Analysis of High-Harmonic Generation in Solids

9:45-10:15 Christophe Berthod

Large-scale simulation of inhomogeneous superconductivity: recent studies and preliminary results for quasiparticle interference from vortices

10:45-10:45 Dima Geshkenbein

Hessian characterization of the vortex in a maze

10:45-11:05 Coffee Break

**Session 7:** Chair Sigrist

11:05-11:35 Naoto Tsuji

Higgs mode from conventional to unconventional superconductors

11:35-12:05 Mark Fischer

A real-space perspective on topological superconductivity

12:05-12:35 Shintaro Hoshino

Spectral bulk-boundary correspondence in chiral-symmetric superconductors

12:35-14:10 Lunch and organizers' meeting

13:30-14:10 Coffee Break

**Session 8:** Chair Uchino

14:10-14:40 Luka Trifunovic

Geometric orbital magnetization in adiabatic processes

14:40-15:00 Akito Daido

Chirality polarization and spectral bulk-boundary correspondence

15:00-15:20 Yasuhiro Tada

Proton-driven quantum spin-dipole liquid

**15:20-16:50 Poster**

16:50-17:10 Coffee Break

**Session 9: Chair Tsunetsugu**

17:10-17:40 Shunsuke Furuya

Lieb-Schultz-Mattis twist operator near quantum critical points

17:40-18:10 Frederic Mila

$\text{SrCu}_2(\text{BO}_3)_2$  under pressure and the extended Shastry-Sutherland model

**Dinner @Camphora**

18:45-20:45

**Third day (Oct.9, Wednesday)**

**Session 10: Chair Hatsugai**

9:15-9:45 Tomas Bzdusek

Non-Abelian band topology in noninteracting metals

9:45-10:15 Ken Shiozaki

Classification of Dirac Hamiltonian with point group symmetry and its application

10:15-10:45 Apoorv Tiwari

Surface Topological Order for Higher-Order Topological Phases of Matter

10:45-11:05 Coffee Break

**Session 11: Chair Ogata**

11:05-11:35 Tena Dubcek

Non-local Weyl orbits without a magnetic field

11:35-12:05 Hiroshi Shinaoka

Marriage of Feynmann diagrams and tensor networks

12:05-12:35 Christopher Mudry

Deconfined quantum criticality revisited

12:35-12:40 Manfred Sgrist

Closing

## Poster list

- P1 Shota Kanasugi  
Multiorbital ferroelectric superconductivity in doped SrTiO<sub>3</sub>
- P2 Jun Ishizuka  
Electronic state and superconductivity in UTe<sub>2</sub>: A DFT+U study
- P3 Koji Kudo  
Mott physics of the higher-order topological insulator on the kagome lattice
- P4 Takumi Bessho  
Topological phenomena in Floquet gapless phases
- P5 Kazuhiro Kimura  
Interaction-driven exceptional torus with many-body chiral symmetry
- P6 Katsuhiko Tanaka  
Spin nematic phases in two-dimensional spin-1 dimer system
- P7 Hiromu Araki  
Z<sub>N</sub> Berry phases for higher-order topological insulators of square and cubic lattices
- P8 Hiroomi Chono  
Laser-induced topological superconductivity in bilayer transition metal dichalcogenides
- P9 Kaoru Mizuta  
Floquet engineering with resonant drives: Control of symmetry-protected topological phases
- P10 Kazuki Yamamoto  
Non-Hermitian fermionic superfluidity with two-body loss
- P11 Koki Chinzei  
Disorder Effects on High-Harmonic Generation in Solids
- P12 Yuji Nozawa  
Generalized hydrodynamic approach to transport in the one-dimensional Hubbard model
- P13 Shuntaro Sumita  
Classification of topological crystalline nodal superconductivity
- P14 Shingo Kobayashi  
Majorana multipole response of topological superconductors
- P15 Roman Rausch  
Magnetic doublon bound states in the Kondo Lattice Model
- P16 Yohei Fuji  
Models of anyon condensation for 3d topological order and fracton
- P17 Yoshihiro Michishita  
The property as open quantum systems and non-hermiticity in strongly-correlated electron systems
- P18 Masataka Kawano  
Topological effects in Insulating antiferromagnets