



This is a program for the virtual program

**Due to the Coronavirus problems in Japan, it is our real regret to announce that we cancel the BE/BC2020F meeting and make it virtual only within the registered participants as of Feb.21, 2020.
(decided on Feb.24, 2020)**

Program

International workshop

”Variety and universality of bulk-edge correspondence in topological phases:

From solid state physics to transdisciplinary concepts”
BE/BC2020F (Bulk-Edge/Boundary Correspondence)

February 28-29, 2020

(as of March 10, 2020)

University of Tsukuba
Tokyo Campus, Myogadani, Tokyo

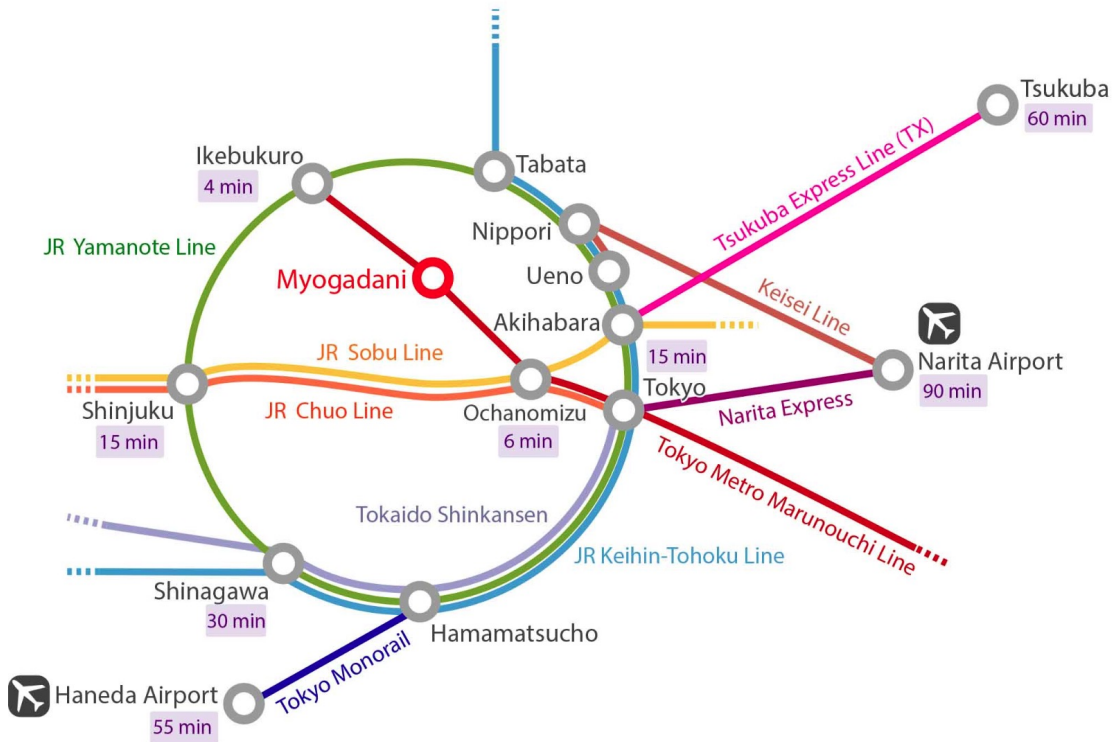
Scientific session

Oral session : Rm. 134

Poster session : Rm. 118 (Feb.28), Rm. 117 (Feb.29)

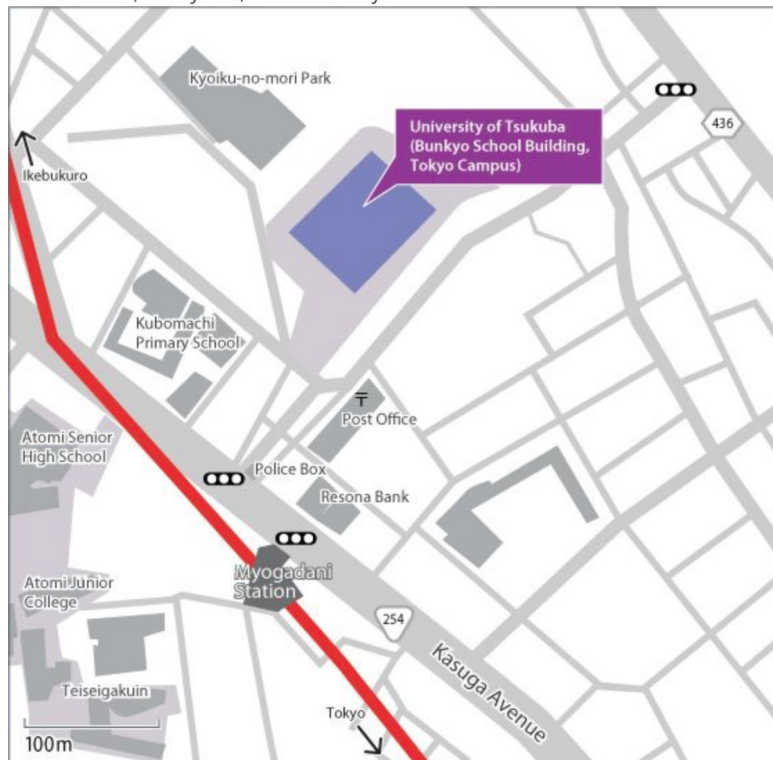
Access to Tokyo Campus / Route Map

Tokyo Metro Marunouchi Line: Myogadani Station (about five-minute walk)



Access Map

Address
3-29-1 Otsuka, Bunkyo-ku, 112-0012 Tokyo



FEB.28 (FRI.), 2020

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|------|--------------|
| 8:20 | Registration |
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| Session 1, Chair: A. Kimura | |
| 8:40 – 9:00 | <u>Yasuhiro Hatsugai</u> (Univ. of Tsukuba) “Welcome: Towards Science of Bulk-Edge Correspondence (open access)” |
| 9:00 – 9:25 | <u>Satoshi Iwamoto</u> (Univ. of Tokyo) “Light Propagation in Semiconductor Valley Photonic Crystals” |
| 9:25 – 10:00 | <u>Xiao Hu</u> (NIMS) “Topological Bulk Laser” |
| 10:00 – 10:35 | <u>Tomohiro Amemiya</u> (Tokyo Inst. Tech.) “Topological Silicon Photonics for Optical Vortex Control in Photonic Integrated Circuits” |

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| 10:35 – 10:55 | Coffee |
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| Session 2, Chair: T. Mizoguchi | |
| 10:55 – 11:30 | <u>Mikito Koshino</u> (Osaka Univ.) “Moire Phonons in Twisted Bilayer Graphene” |
| 11:30 – 12:05 | <u>Yohei Fuji</u> (Univ. of Tokyo) “Coupled-Layer Construction of Anisotropic Fracton Models” |

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| 12:05 – 12:10 | Photo |
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| 12:10 – 13:15 | Lunch |
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| Session 3, Chair: P. Delplace | |
| 13:15 – 14:15 | <u>Ching Hua Lee</u> (National Univ. of Singapore) “Physics of Non-Hermitian Bulk-Boundary Correspondence Breakdown” |
| 14:15 – 14:40 | <u>Tsuneya Yoshida</u> (Univ. of Tsukuba) “Fractional Quantum Hall State in a Non-Hermitian System” |
| 14:40 – 15:05 | <u>Hideo Aoki</u> (AIST/Univ. of Tokyo) “Imprinting Topological States with Superlattice-patterned Laser Fields in 2D Materials” |

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| 15:05 – 16:05 | Coffee & Posters/discussion |
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FEB.28 (FRI.), 2020 (CONT.)

Session 4, Chair: T. Kawarabayashi

16:05 – 16:30

Ryo Shimano (Univ. of Tokyo)

“THz Emission from Strong Spin-Orbit Coupling Materials”

16:30 – 17:05

Sota Kitamura (Univ. of Tokyo)

“Nonreciprocal Landau-Zener Tunneling”

17:05 – 17:30

Yoshihito Kuno (Kyoto Univ.)

“Topological Flat-Band Creutz Ladder: Many-Body Aharanov-Bohm Caging,
Extended Flat-Band and Entanglement”

Dinner (private)

FEB.29 (SAT.), 2020

Session 5, Chair: C. H. Lee

- 8:40 – 9:40 Pierre Delplace (CNRS, ENS de Lyon)
 “Topological Waves in the Atmosphere and the Ocean”
- 9:40 – 10:15 Kyogo Kawaguchi (RIKEN)
 “Edge modes in chiral active nematic cells”
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10:15 – 10:40 Coffee

Session 6, Chair: Y. Hatsugai

- 10:40 – 11:40 Jinkyu Yang (Univ. of Washington)
 “Topological Manipulation of Stress Waves in Mechanical Structures”
- 11:40 – 12:05 Takahiro Fukui (Ibaraki Univ.)
 “Boundary-Obstructed Topological Phases of the Benalcazar-Bernevig-Hughes Model
 in a Magnetic Field”
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12:05 – 13:15 Lunch

Session 7, Chair: T. Fukui

- 13:15 – 13:40 Akio Kimura (Hiroshima Univ.)
 “Incorporating Magnetism into Topological Materials”
- 13:40 – 14:15 Yutaka Akagi (Univ. of Tokyo)
 “Topological Invariants for Magnon Systems with Disorder”
- 14:15 – 14:40 Mario Novak (University of Zagreb)
 “ARPES Study of EuIn_2As_2 and EuCd_2As_2 -Candidates for Magnetically Ordered
 Topological Materials”
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- 14:40 – 15:40 Coffee & Posters/discussion
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FEB.29 (SAT.), 2020 (CONT.)

Session 8, Chair: S. Iwamoto

15:40 – 16:15 Nobuyuki Takei (Kyoto Univ.)

“Disorder-Induced Thouless Pumping of Ultracold Atoms in an Optical Lattice”

16:15 – 16:40 Kenichiro Imura (Hiroshima Univ.)

“Bloch Band Theory for Non-Hermitian Bulk-Edge Correspondence”

16:40 – 17:05 Tohru Kawarabayashi (Toho Univ.)

“Bulk-Edge Correspondence in Deformed Topological Systems”

17:05 – 17:10 Yasuhiro Hatsugai (Univ. of Tsukuba)

“Closing remark”

POSTERS

P 1.

Rasoul Ghadimi (Tokyo Univ. of Science)

“Possibility of s-Wave Chiral Topological Superconductivity in Quasicrystals”

P 2.

Hiroki Kondo (Univ. of Tokyo)

“Three-Dimensional Topological Magnon Systems”

P 3.

Gen Najima (Univ. of Tsukuba)

“Dynamics of Symmetry-Protected Exceptional Ring in Mechanical System”

P 4.

Koji Kudo (Univ. of Tsukuba)

“Numerical Study of Adiabatic Heuristic for the Quantum Hall States”

P 5.

Hiromu Araki (Univ. of Tsukuba)

“Quantized Berry Phases for Characterization of the Higher-Order Symmetry-Protected Topological Phases”

P 6.

Hiromasa Wakao (Univ. of Tsukuba)

“Chiral Zero Modes Protected by a Spatial Symmetry in a Spring-Mass Model”

P 7.

Motonobu Tomoda (Hokkaido Univ.)

“Demonstration of Controlling Waves on a Wave Machine”

P 8.

Kenshi Okuno (Okayama Univ.)

“Design of Reconfigurable Valley Topological Phononic Structure using Metallic Circular Rods”

P 9.

Ken Mochizuki (Hokkaido Univ.)

“Chiral Floquet Topological Phases in One-Dimensional PT Symmetric Open Systems”

P 10.

Haruka Kurihara (Univ. of Tsukuba)

“Theoretical Study on Coexistence of Higher Order Topological Phase and Long Range Order”

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POSTERS (CONT.)

P 11.

Hibiki Kagami (Tokyo Inst. Tech.)[“Topological Taper Structure Towards Highly Efficient Coupling”](#)

P 12.

Yuria Otaki (Ibaraki Univ.)

“The 3D Higher Order Topological Insulator in the Uniform Magnetic Field”

P 13.

Yuki Soeda (Ibaraki Univ.)[“Wilson-Dirac fermion on the Lieb lattice”](#)

P 14.

Kota Ishii (Toho Univ.)[“Berry’s phase in quantum phases of a Kagome magnet”](#)

P 15.

Sho Okada (Tokyo Inst. Tech.)

“Optical vortex coupler/combiner using topological edge state waveguide”

P 16.

Natsuko Ishida, Y. Ota, W. Lin,Y. Arakawa, and S. Iwamoto (Univ. of Tokyo)[“Investigation on a single-mode array laser based on a topological edge state”](#)

P 17.

Kaito Shiraishi (Hiroshima Univ.)“Angle resolved photoelectron spectroscopy of magnetically ordered topological insulator candidate EuIn_2As_2 ”

P 18.

Hong Juang & Xiao Hu (NIMS, University of Tsukuba)

“Topological Magnon Modes Induced by Coupling Texture on Honeycomb Lattice”

P 19.

Nobuyuki Takei (Kyoto Univ.)[“Disorder-Induced Thouless Pumping of Ultracold Atoms in an Optical Lattice”](#)

P 20.

Koichi Asaga (Ibaraki Univ.)

“Boundary-obstructed topological phases of a Dirac fermion in a magnetic field”
