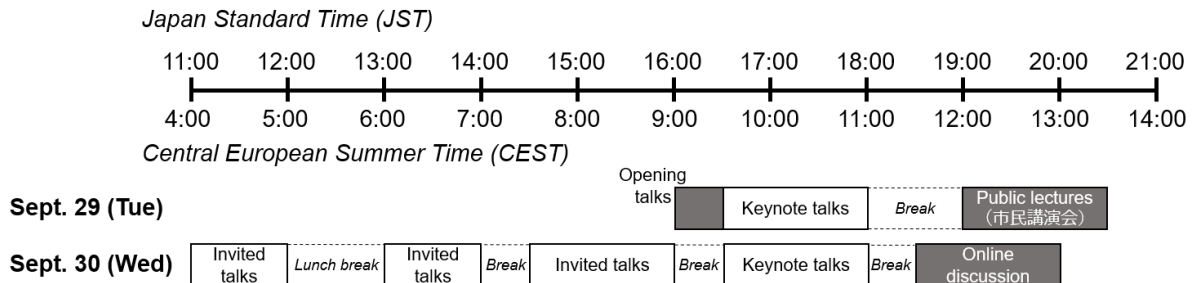


Tohoku University - RIKEN Joint Workshop
- Math meets Quantum Materials (MMQM) -

東北大&理研 連携ワークショップ

held online on September 29-30, 2020

Time table in JST and CEST



Program

September 29 (Tue)

Opening talks

Chair: **Hiroshi Suito** (AIMR/iTHEMS)

16:00-16:15 (9:00-9:15 in CEST)

Hidetoshi Kotera (Executive Director, RIKEN)

16:15-16:30 (9:15-9:30 in CEST)

Motoko Kotani (Executive Vice President for research, Tohoku University)

Keynote talks

Chair: **Tomoki Ozawa** (AIMR/iTHEMS)

16:30-17:15 (9:30-10:15 in CEST)

Max Hirschberger (RIKEN CEMS)

"Interplay of nanometer-sized skyrmion spin textures and topological electronic bands"

17:15-18:00 (10:15-11:00 in CEST)

Iacopo Carusotto (INO-CNR BEC Center, Italy)

"New light on topological physics from optical systems"

18:00-19:00 (11:00-12:00 in CEST) *Break*

Public lectures given in Japanese

市民講演会 (日本語による講演)

19:00-20:30 (12:00-13:30 in CEST)

Chair: **Tetsuo Hatsuda** (RIKEN iTHEMS)

19:00-19:45 (12:00-12:45 in CEST)

Tomoki Ozawa (Tohoku AIMR / RIKEN iTHEMS)

"Topological physics from semi-conductor and earth to cells" (given in Japanese)

小澤知己 (東北大 AIMR・理研 iTHEMS)

「物理学とトポロジー：半導体・地球物理から生命現象まで」

19:45-20:30 (12:45-13:30 in CEST)

Hidetoshi Nishimori (Tokyo Tech / RIKEN iTHEMS

/ Tohoku GSIS)

"Quantum mechanics and its application to computing" (given in Japanese)

西森秀稔 (東工大・理研 iTHEMS・

東北大情報科学)

「量子力学とそれを使った計算の話」

September 30 (Wed)

Invited talks

Chair: **Yoshimasa Hidaka**
(KEK Theory Center / RIKEN iTHEMS)

11:00-11:30

Chris Bourne (Tohoku AIMR / RIKEN iTHEMS)
"Symmetry protected topological (SPT) phases of infinite fermion chains"

11:30-12:00

Shuntaro Sumita (RIKEN CPR)
"Topological gapless points in superconductors"

12:00-13:00 *Lunch break*

Invited talks

Chair: **Chris Bourne** (AIMR/iTHEMS)

13:00-13:30

Jana Lustikova (Tohoku AIMR/CSIS)
"Transport phenomena in superconductor/magnet hybrids"

13:30-14:00

Ryusuke Hamazaki (RIKEN CPR/iTHEMS)
"Family-Vicsek scaling of roughness growth in a strongly interacting Bose gas"

14:00-14:30 *Break*

Invited talks

Chair: **Naoto Nagaosa** (RIKEN CEMS / U. Tokyo)

14:30-15:00

Ryo Okugawa (Tohoku GSIS)
"Higher-order topological phases protected by chiral symmetry"

15:00-15:30

Kyosuke Adachi (RIKEN BDR/iTHEMS)
"Activity-induced phase transition in a quantum many-body system"

15:30-16:00

Mehrdad Elyasi (Tohoku IMR)
"Magnons for quantum information"

16:00-16:30 *Break*

Keynote talks

Chair: **Tetsuo Hatsuda** (iTHEMS)

16:30-17:15 (9:30-10:15 in CEST)

Ching-Kai Chiu (RIKEN iTHEMS)
"Topological semimetals and knot theory"

17:15-18:00 (10:15-11:00 in CEST)

Alberto Amo (University of Lille, France)
"Measuring topological invariants in photonic lattices"

18:00-18:30 (11:00-11:30 in CEST) *Break*

18:30-20:00 (11:30-13:00 in CEST)

Online discussion

Organizers of MMQM:

T. Ozawa (Tohoku AIMR / RIKEN iTHEMS), C. Bourne (Tohoku AIMR / RIKEN iTHEMS),
H. Suito (Tohoku AIMR / RIKEN iTHEMS), and T. Hatsuda (RIKEN iTHEMS)

Hosted by Tohoku University and RIKEN