

Graduate Program in Spintronics, Tohoku University

## Mini-workshop on Topological States and Non-commutative Geometry

**Date:** March 23rd (Mon.) – 26th (Thu.), 2015  
**Place:** WPI-AIMR, Tohoku University 2nd Floor Seminar room  
(2-1-1 Katahita, Aoba-ku, Sendai, 980-8577 Japan)  
**Access:** <http://www.wpi-aimr.tohoku.ac.jp/en/about/access/>

### Program

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#### March 23rd:

- 14:00-14:50 **Marcello Porta** (University of Zürich)  
“Bulk-edge duality for two-dimensional topological insulators I”
- 15:10-16:00 **Shinichiroh Matsuo** (Osaka University)  
“Bulk-edge correspondence and the Gysin map in K-theory I”  
-Break-
- 16:30-17:20 **Kiyonori Gomi** (Shinshu University)  
“The FKMM invariant”
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#### March 24th:

- 10:00-10:50 **Marcello Porta** (University of Zürich)  
“Bulk-edge duality for two-dimensional topological insulators II”
- 11:10-12:00 **Shinichiroh Matsuo** (Osaka University)  
“Bulk-edge correspondence and the Gysin map in K-theory II”  
-Lunch-
- 14:00-14:50 **Peter Bouwknegt** (The Australian National University)  
“Topological phases and the ABS-construction I”
- 15:10-16:00 **Yosuke Kubota** (University of Tokyo)  
“Bulk-edge correspondence via coarse geometry I”  
-Break-
- 16:30-17:20 **Koji Sato** (Tohoku University)  
“Electronic Berry curvature induced by the interaction with magnetostatic waves”
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**March 25th:**

- 10:00-10:50 **Shinichiroh Matsuo** (Osaka University)  
"Bulk-edge correspondence and the Gysin map in K-theory III"
- 11:10-12:00 **Takahiko Yoshida** (Meiji University)  
"Torus fibrations and localization of index"  
-Lunch-
- 14:00-14:50 **Alan Carey** (The Australian National University) & **Christopher Bourne** (University of Wollongong)  
"Non-commutative Chern numbers, KK theory and index computations I"
- 15:10-16:00 **Yosuke Kubota** (University of Tokyo)  
"Bulk-edge correspondence via coarse geometry II"  
-Break-
- 16:30-17:20 **Masatoshi Sato** (Nagoya University)  
"Symmetry and topology in insulators and superconductors I"

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**March 26th:**

- 10:00-10:50 **Peter Bouwknegt** (The Australian National University)  
"Topological phases and the ABS-construction II"
- 11:10-12:00 **Alan Carey** (The Australian National University) & **Christopher Bourne** (University of Wollongong)  
"Non-commutative Chern numbers, KK theory and index computations II"  
-Lunch-
- 14:00-14:50 **Guo Chuan Thiang** (University of Adelaide)  
"K-theory as obstructions between topological phases"
- 15:10-16:00 **Shin Hayashi** (University of Tokyo)  
"Bordism invariance of indices and the bulk-edge correspondence"  
-Break-
- 16:30-17:20 **Masatoshi Sato** (Nagoya University)  
"Symmetry and topology in insulators and superconductors II"
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