Symmetry and Topology in Quantum Matter

Monday January 26, 2015

8:00–8:55 *Check-In/Light Breakfast (Hosted by IPAM)*

9:00–10:10 **Xiao-Gang Wen** (Massachusetts Institute of Technology)
SPT order and algebraic topology

10:10–10:30 *Break*

10:30–11:40 **Zhenghan Wang** (Microsoft Research)
Symmetry, defects, and gauging of 2D topological phases

11:40–1:10 *Lunch (on your own)*

1:10–2:20 **Max Metlitski** (University of California, Santa Barbara (UC Santa Barbara))
A symmetry-respecting topologically-ordered surface phase of 3d electron topological insulators

2:20–2:45 *Break*

2:45–3:55 **Aaron Royer** (University of Texas at Austin)
K-theory computations for topological insulators

3:55–4:20 *Break*

4:20–5:30 **Andrew Essin** (California Institute of Technology)
Composite Dirac liquids and surface topological orders

5:30–7:00 *Poster Session & Reception (Hosted by IPAM)*

Tuesday January 27, 2015

8:00–9:00 *Check-in/Breakfast (hosted by IPAM)*

9:00–10:10 **Scott Morrison** (Australian National University)
Progress in the small index subfactor classification

10:10–10:50 *Break*

10:50–12:00 **Xie Chen** (California Institute of Technology)
Flux Threading and 3+1D Anomalous Symmetry Enriched Topological phases

12:00–2:00 *Lunch (on your own)*

2:00–3:10 **Matthew Hastings** (Microsoft Station Q)
Classifying Quantum Phases With the Torus Trick

3:10–3:50 *Break*

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3:50–5:00 **Michael Freedman** (Microsoft Research)
Squeezing computational universality out of SU(2)_4

Wednesday January 28, 2015

8:00–9:00 *Check-in/Breakfast (hosted by IPAM)*

9:00–10:10 **Jurgen Fuchs** (Karlstads Universitet)
Topological field theory for defects in topological phases

10:10–10:40 *Break*

10:40–11:50 **Dmitri Nikshych** (University of New Hampshire)
Symmetry groups of modular categories and their actions on categorical Grassmannians

11:50–1:20 *Lunch (on your own)*

1:20–2:30 **Lukasz Fidkowski** (SUNY Stony Brook)
3d symmetry protected phases and surface topological order

2:30–2:55 *Break*

2:55–4:05 **Emily Peters** (Loyola University, Chicago)
Categories generated by a trivalent vertex

4:05–4:30 *Break*

4:30–5:40 **Alexei Kitaev** (California Institute of Technology)
Homotopy-theoretic approach to SPT phases in action: Z_16 classification of three-dimensional superconductors

Thursday January 29, 2015

8:00–9:00 *Check-in/Breakfast (hosted by IPAM)*

9:00–10:10 **Kevin Walker** (Microsoft Station Q)
Codimension-1 defects, categorified group actions, and condensing fermions

10:10–10:50 *Break*

10:50–12:00 **Ying Ran** (Boston College)
Symmetric tensor networks — practical simulation algorithms to sharply identify classes of quantum phases distinguishable by short-range physics

12:00–2:00 *Lunch (on your own)*

2:00–3:10 **Noah Snyder** (Indiana University)
Local TFTs and Tensor Categories

3:10–3:50 *Break*

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3:50–5:00 **Fiona Burnell** (University of Minnesota, Twin Cities)
Anomalous Symmetry Fractionalization and surface topological order

Friday January 30, 2015

8:00–9:00 *Check-in/Breakfast (hosted by IPAM)*

9:00–10:10 **Cenke Xu** (University of California, Santa Barbara (UCSB))
Interacting Bosonic and Fermionic Topological Insulators, Connection to Gravitational Anomalies and Standard Model

10:10–10:40 *Break*

10:40–11:50 **Vaughan Jones** (Vanderbilt University)
Block spins, subfactors, Thompson groups and knots.

11:50–1:20 *Lunch (on your own)*

1:20–2:30 **Michael Levin** (University of Chicago)
Braiding statistics and symmetry-protected topological phases