

Topological Quantum Computing

Monday February 26, 2007

- 8:30–9:15 *Check-In/Light Breakfast (Hosted by IPAM)*
- 9:15–9:30 *Welcome and Opening Remarks*
- 9:30–10:30 **Nicholas Read** (Yale University)
- 10:30–11:00 *Break*
- 11:00–12:00 **Michael Freedman** (Microsoft Research)
- 12:00–1:30 *Lunch (on your own)*
- 1:30–2:30 **Chetan Nayak** (Microsoft Station Q)
Point Contacts and Qubits in the $5/2$ Fractional Quantum Hall State
- 2:30–3:30 **Ady Stern** (Weizmann Institute of Science)
How do you recognize the non-abelian quantum Hall effect when you see it
- 3:30–4:00 *Break*
- 4:00–5:00 **Kirill Shtengel** (University of California, Riverside (UC Riverside))
Non-Abelian Quasiparticle Interferometry

Tuesday February 27, 2007

- 8:30–9:30 *Breakfast (Hosted by IPAM)*
- 9:30–10:30 **Paul Fendley** (University of Virginia)
Finding Fibonacci
- 10:30–11:00 *Break*

(Tuesday schedule continued on next page)



(Tuesday schedule continued from previous page)

- 11:00–12:00 **Matthew Fisher** (University of California, Santa Barbara (UC Santa Barbara))
The 5/2 edge
- 12:00–1:30 *Lunch (on your own)*
- 1:30–2:30 **John Preskill** (California Institute of Technology)
Robust quantum computation
- 2:30–3:30 **Nicholas Bonesteel** (Florida State University)
Finding Braids for Fibonacci Anyons and Beyond
- 3:30–4:00 *Break*
- 4:00–5:00 **Steve Simon** (Lucent Technologies Bell Laboratories)
Theoretical Search for Novel Quantum Hall States

Wednesday February 28, 2007

- 8:30–9:30 *Breakfast (Hosted by IPAM)*
- 9:30–10:30 **Alexei Kitaev** (California Institute of Technology)
Quantum devices based on superconducting inductors
- 10:30–11:00 *Break*
- 11:00–12:00 **Almut Beige** (University of Leeds)
Quantum computing using measurements and dissipation
- 12:00–2:00 *Lunch (on your own)*
- 2:00–3:00 **Greg Kuperberg** (University of California, Davis (UC Davis))
Anyonic quantum computation from the Turaev-Viro invariant
- 3:00–3:30 *Break*
- 3:30–4:30 **Kareljan Schoutens** (Universiteit van Amsterdam)
Entanglement Entropy in Quantum Hall States
- 4:30–5:00 *Coffee Break at LaKretz Hall*
- 5:00–6:00 *Public Lecture by Michael Freedman at LaKretz Hall: "How Topology Will Save Moore's Law: Quantum Computation via Exotic States of Matter"*
- 6:15–7:45 *Reception (Location: IPAM Lobby)*

Thursday March 1, 2007

- 8:30–9:30 *Breakfast (Hosted by IPAM)*
- 9:30–10:30 **Louis Kauffman** (University of Illinois at Chicago)
q-deformed Spin Networks and Anyonic Topological Quantum Computing
- 10:30–11:00 *Break*
- 11:00–12:00 **Kevin Walker** (Microsoft Station Q)
- 12:00–1:30 *Lunch (on your own)*
- 1:30–2:30 **Zhenghan Wang** (Microsoft Research)
Galois field theory of anyons
- 2:30–3:30 **Eduardo Fradkin** (University of Illinois at Urbana-Champaign)
Entanglement Entropy at two dimensional quantum critical points: can you hear the shape of Schrödinger's cat?
- 3:30–4:00 *Break*
- 4:00–5:00 **Michael Levin** (Harvard University)
Real space renormalization group and the emergence of topological order

Friday March 2, 2007

- 8:30–9:30 *Breakfast (Hosted by IPAM)*
- 9:30–10:30 **Yong-Shi Wu** (University of Utah)
Braid Group, Gauge Invariance and Topological Orders
- 10:30–11:00 *Break*
- 11:00–12:00 **Birgitta Whaley** (University of California, Berkeley (UC Berkeley))
Dimer model implementations of lattice quantum loop gases
- 12:00–1:00 **Peter Zoller** (Leopold-Franzens Universität Innsbruck)
Designing Hubbard and spin Hamiltonian with atoms and molecules
- 1:00–2:30 *Lunch (on your own)*

