

Princeton Center for Theoretical Science

The Princeton Center for Theoretical Science is dedicated to exploring the frontiers of theory in the natural sciences. Its purpose is to promote interaction among theorists and seed new directions in research, especially in areas cutting across traditional disciplinary boundaries.

The Center is home to a corps of Center Postdoctoral Fellows, chosen from nominations made by senior theoretical scientists around the world. A group of senior Faculty Fellows, chosen from science and engineering departments across the campus, are responsible for guiding the Center. Center activities include focused topical programs chosen from proposals by Princeton faculty across the natural sciences. The Center is located on the fourth floor of Jadwin Hall, in the heart of the campus "science neighborhood". The Center hopes to become the focus for innovation and cross-fertilization in theoretical natural science at Princeton.

Faculty Fellows

Paul Steinhardt, Director
Igor Klebanov, Associate Director
Ravindra Bhatt
Adam Burrows
Curtis Callan
Roberto Car
Salvatore Torquato
Jeroen Tromp

Center Postdoctoral Fellows

Dmitry Abanin 2008-2011
Benjamin Basso 2009-2012
Adam Brown 2009-2012
Bryan Clark 2009-2012
Mariangela Lisanti 2010-2013
M. Lisa Manning 2008-2011
Matthew Reece 2008-2011
Marco Schiro', 2010-2013
Alexander Tchekhovskoy 2010-2013
Mosahito Yamazaki 2010-2013

Associate Postdoctoral Fellows

Shravan Hanasoge 2010-2011

To find out more about Center Postdoctoral Fellowships and Programs see:

<http://pcts.princeton.edu/pcts>



Search for Topological Phases of Matter

New Frontiers in Low-Dimensional Systems Program

21-22 April 2011

**PCTS – Jadwin Hall
Fourth Floor, Room 407**

Organizers

Dmitry Abanin, Andrei Bernevig
M. Zahid Hasan, Shivaji Sondhi

Search for Topological Phases of Matter

Thursday, 21 April 2011

8:50 am Welcoming Remarks

9:00 – 9:50 "A magnetic Coulomb phase in $d=3$ "
Roderich Moessner, MPI-PKS Dresden

10:00 – 10:50 "Quantum spins in the quasi kagome lattices of copper minerals"
Zenji Hiroi, University of Tokyo

11:00 – 11:15 Coffee break

11:15 – 12:05 "Spin liquid ground state of the Kagome Heisenberg model"
Steven White, University of California, Irvine

12:15 – 1:30 pm Lunch

1:30 – 2:20 "Spin liquids and topological insulators on the Honeycomb lattice"
Fakher Assaad, University Wurzburg

2:30 – 3:10 "Nature of spin liquid state on honeycomb lattice"
Bryan Clark, Princeton University

3:20 – 4:10 "Thermal-transport Studies of Quantum Spin Liquids"
Minoru Yamashita, Kyoto University

4:20 – 4:30 Coffee break

4:30 – 5:20 "Spin liquids in the vicinity of Mott transitions: From effective spin models to phase diagrams"
Andreas Lauchli, Max Planck Institute

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Friday, 22 April 2011

9:00 – 9:50 "Quantum Simulation of Antiferromagnetic Spins Chains in an Optical Lattice"
Markus Greiner, Harvard University

10:00 – 10:50 "Atom chip microscopy: A Novel Probe for Strongly Correlated Materials"
Benjamin Lev, University of Illinois at Urbana-Champaign

11:00 – 11:15 Coffee break

11:15 – 12:05 "Implementing synthetic gauge fields for ultracold atoms"
Lindsay LeBlanc, NIST

12:15 – 1:05 "Condensed matter with strongly interacting photons"
Andrew Houck, Princeton University

1:15 – 2:30 pm Lunch

2:30 – 3:20 "Fractional Quantum Hall Effect in Wide Quantum Wells"
Mansour Shayegan, Princeton University

3:30 – 4:20 "Designing the non-Abelian states in multicomponent fractional quantum Hall systems"
Zlatko Papić, Princeton University

4:30 – 5:30 Discussion and Conclusion