

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
William Bialek
Curtis Callan
Roberto Car
David Spergel
Salvatore Torquato

Center Postdoctoral Fellows:

Dmitry Abanin 2008-2011
Bogdan Andrei Bernevig 2006-2009
Thomas Klose 2007-2010
Jean-Luc Lehners 2007-2010
M. Lisa Manning 2008-2011
Meera Parish 2006-2009
Matthew Reece 2008-2011
Antonello Scardicchio 2006-2009
Branson Stephens 2007-2010
Aleksandra Walczak 2007-2010

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

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



Iron-based HiTC Superconductors Workshop

November 13-14, 2008

Fourth Floor, Jadwin Hall

Organizers: Bogdan Andrei Bernevig, Ravindra Bhatt, M. Zahid Hasan, Ali Yazdani

Co-sponsored by PCCM

Princeton Center for Complex Materials

Iron-based HiTC Superconductors Workshop

Thursday, November 13, 2008

- 9:00 am Welcome Remarks
Igor Klebanov, Associate Director, PCTS
- 9:00 – 9:50 am “Valley-density wave and multiband superconductivity in iron pnictides”
Zlatko Tesanovic, Johns Hopkins University
- 9:50 – 10:40 am “Superconductivity and spin-density-wave instability in FeAs-based systems”
Nan Lin Wang, Institute of Physics, Chinese Academy of Sciences, Beijing
- 10:40 – 11:00 am Coffee Break**
- 11:00 – 11:50 am “Neutron scattering studies of SKFA and BKFA superconductors”
Pengcheng Dai, Oak Ridge National Laboratory
- 11:50 – 1:00 pm Lunch**
- 1:00 – 2:00 pm “Quasiparticles and thermal Hall Effect in (Ba,K) Fe₂As₂”
Nai-Phuan Ong, Physics, Princeton University
Robert Cava, Chemistry, Princeton University
- 2:00 – 2:50 pm “Neutron Scattering Evidence for Unconventional Superconductivity in Fe-based Superconductors”
A.D. Christianson, Oak Ridge National Laboratory
- 2:50 – 3:00 pm **Coffee Break**
- 3:00 – 3:50 pm “Electronic structure, superconductivity and magnetism in ferropnictides”
Igor Mazin, NRL
- 4:00 pm Physics Tea in Room 218, Faculty Lounge, Jadwin Hall**
- 4:30 – 5:30 pm **Joint Physics/PCTS Colloquium, A-10, Jadwin Hall**
“FeAs based superconductors: The end of the tyranny of copper”
Paul Canfield, Iowa State University/Ames Laboratory

Iron-based HiTC Superconductors Workshop

Friday, November 14, 2008

- 9:00 – 9:50 am “A 3-orbital parametrization of the Fermi pockets in Fe Pnictides”
Patrick Lee, MIT
- 9:50 – 10:40 am “Transport properties and pressure effects in iron-based superconductors and related compounds”
Toshimitsu Ito, AIST, Japan
- 10:40 – 11:00 am Coffee Break**
- 11:00 – 11:50 am “Pairing Symmetry and Magnetic Exchange Coupling in Iron-Based Superconductors Parallel paradigms between Cuprates and Iron-Based Superconductors: from magnetism to superconductivity”
J.P. Hu, Purdue University
- 11:50 – 1:30 pm Lunch**
- 1:30 – 2:20 pm “Effects of Pressure and doping on (AE) Fe₂As₂ compounds (AE=Ba, Sr, Fe).”
Paul Canfield, Iowa State University/Ames Laboratory
- 2:20 - 3:10 pm** “Antiferromagnetic correlation and the pairing in the cuprates and iron pnictides: a view from the functional renormalization group studies”
Dunghai Lee, University of California, Berkeley
- 3:10 - 3:30 pm **Coffee Break**
- 3:30 – 4:20 pm** “Spectroscopy and Vortex Imaging in the Iron-Pnictide Superconductor BaFe_{1.8}Co_{0.2}As₂”
Jenny Hoffman, Harvard University
- 4:20 – 5:10 pm “Correlation Effects in Iron Pnictide Superconductors: a Dynamical Mean Field Theory Perspective”
Gabi Kotliar, Rutgers University
- 5:10 – 6:00 pm Light Reception**