

PROGRAMME

Friday, December 17, 2010 (Day 1)

08:30 - 09:00 Registration
 09:00 - 09:05 Welcome Speech, by Fuchun Zhang

Morning session 1: Topological Insulator and Spintronics (I)

Chaired by Tai Kai Ng, Hong Kong University of Science and Technology

09:05 - 09:30 Topological Insulators and Superconductors ([Presentation File](#))
Shou-Cheng Zhang, Stanford University
 09:30 - 09:55 Spin-orbit Interaction as a Gauge Field
Naoto Nagaosa, University of Tokyo
 09:55 - 10:20 Impurity Effect on Weak Anti-localization in Topological Insulator Bi_2Te_3 ([Presentation File](#))
Jian-Nong Wang, Hong Kong University of Science and Technology
 10:20 - 10:55 Spin Seebeck Effect
Sadamichi Maekawa, Advanced Science Research Center, Japan Atomic Energy Agency
 10:55 - 11:20 Coffee Break

Morning session 2: Ultra Cold Atoms

Chaired by Shun-Qing Shen, University of Hong Kong

11:20 - 11:45 Quantum Simulation - Seeing the Universe from a Grain of Sand
Jason Tin-Lun Ho, Ohio State University
 11:45 - 12:10 In Situ Observation of Scale Invariance and Universality in Two-Dimensional Quantum Gases
([Presentation File](#))
Cheng Chin, University of Chicago
 12:10 - 12:35 Enhanced Sensing Capability of Nonclassical Quantum States ([Presentation File](#))
Li You, Tsinghua University, Beijing
 12:35 - 14:30 Lunch and Poster Session

Daniel Tsui Fellowship Award Presentation, Center of Theoretical and Computational Physics

14:30 - 14:40 *Chaired by T. M. Rice, the award is presented by Daniel Tsui*

Afternoon session 1: Pnictide Superconductivity (I)

Chaired by Nan-Lin Wang, Institute of Physics, CAS

14:40 - 15:05 What Have We Learned about Iron-Pnictides from the Electronic Structure Calculations?
([Presentation File](#))
Zhong-Yi Lu, Renmin University of China
 15:05 - 15:30 Neutron Scattering Study on the Iron-Based Superconductor Systems
Wei Bao, Renmin University of China
 15:30 - 15:55 Anisotropic Superconducting Gap Revealed by Angle Specific Heat and Tunneling Measurements
([Presentation File](#))
Hai-hu Wen, Institute of Physics, CAS
 15:55 - 16:20 Coexistence of 3d-electron Superconductivity and 4f-electron Ferromagnetism in Iron Pnictides
([Presentation File](#))
Guanghan Cao, Zhejiang University
 16:20 - 16:50 Coffee Break

Afternoon session 2: Correlated Electron Systems

Chaired by Jian-Xin Li, Nanjing University

16:50 - 17:15 Do Cooperons Play a Key Role in the Superconductivity of the Cuprates? ([Presentation File](#))
T. Maurice Rice, ETH-Zurich

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17:15 - 17:40 Tuning Electronic Phase Separations in Manganites under Spatial Confinement

Jian Shen, Fudan University

17:40 - 18:05 Finite Temperature Gutzwiller Projection for Strongly Correlated Electron Systems

Qianghua Wang, Nanjing University

Saturday, December 18, 2010 (Day 2)**Morning session 3: Low Dimensional Systems***Chaired by Lu Yu, Institute of Physics, CAS*

- 09:00 - 09:25 Dirac Fermions in Graphene, Graphene Nanostructures, and Related Systems
Steve G. Louie, University of California, Berkeley
- 09:25 - 09:50 The super-spin-fluid in a Ferromagnetic Graphene ([Presentation File](#))
Xincheng Xie, Peking University
- 09:50 - 10:15 Recent Identifications of Solitons in Quasi 1D Electronic Systems and Generalisations to Strong Correlations in Higher Dimensions ([Presentation File](#))
Serguei Brazovskii, CNRS, Paris-Sud University and YITP, Kyoto
- 10:15 - 10:40 Electronic Correlations vs Long Range Coulomb Interactions in Optics of Conducting Polymers ([Presentation File](#))
Natasha Kirova, Paris-Sud 11 University
- 10:40 - 11:10 Coffee Break

Morning session 4: Quantum Chao's and Quantum Spin Systems*Chaired by Despina Louca, University of Virginia*

- 11:10 - 11:35 Quantum Chaotic Dynamics of Electrons in a Solid State Environment ([Presentation File](#) for colloquium in HKU on Dec 10, 2010)
Xue-Chu Shen, Shanghai Institute of Technical Physics, CAS
- 11:35 - 12:00 Unified Spin Order Theory via Gauge Landau-Lifshitz Equation ([Presentation File](#))
You-Quan Li, Zhejiang University
- 12:00 - 12:25 Spin Entanglements in Two-dimensional Magnetic Systems ([Presentation File](#))
Seunghun Lee, University of Virginia
- 12:25 - 14:30 Lunch and Poster Session

Afternoon session 3: Pnictide Superconductivity (II)*Chaired by Xing-Jiang Zhou, Institute of Physics, CAS*

- 14:30 - 14:55 A Few Points on Iron Based Superconductors
Zhongxian Zhao, Institute of Physics, CAS
- 14:55 - 15:20 ARPES Studies on the Pairing Mechanism of Iron-based Superconductors ([Presentation File](#))
Hong Ding, Institute of Physics, CAS
- 15:20 - 15:45 Orbital Characters of Iron-based Superconductors and Orbital Ordering in Their Parent Compounds ([Presentation File](#))
Donglai Feng, Fudan University
- 15:45 - 16:10 Understanding of Recent STM Experiments on Iron-Pnictide Superconductors by a Minimal Two-Orbital Model ([Presentation File](#))
Chin-Seng Ting, University of Houston
- 16:10 - 16:40 Coffee Break

Afternoon session 4: Quantum Simulation (I)*Chaired by Zhong Fang, Institute of Physics, CAS*

- 16:40 - 17:05 Second Renormalization of Tensor-network States
Tao Xiang, Institute of Physics, CAS
- 17:05 - 17:30 Tensor-net States: a New Perspective on Many-body Quantum Systems
Zheng-Cheng Gu, University of California Santa Barbara
- 17:30 - 17:55 Optimal Ramp Shapes for the Hubbard Model in Infinite Dimensions ([Presentation File](#))
Philipp Werner, ETH-Zurich
- 19:00 - 22:00 Banquet at the Victoria Harbor Restaurant

Sunday, December 19, 2010 (Day 3)**Morning session 5: Topological Insulator and Spintronics (II)***Chaired by Xiao-Feng Jin, Fudan University*

- 09:00 - 09:25 Molecular Beam Epitaxy-Scanning Tunneling Microscopy of Topological Insulators
Qi-Kun Xue, Tsinghua University, Beijing
- 09:25 - 09:50 Quantized Anomalous Hall Effect in Magnetic Topological Insulators
Xi Dai, Institute of Physics, CAS
- 09:50 - 10:15 Effects of Spin-flip Scattering on Massive Dirac Fermions ([Presentation File](#))
Qian Niu, University of Texas Austin
- 10:15 - 10:40 Optical Study of Spintronics in III-V Semiconductors ([Presentation File](#))
Xiao-Dong Cui, University of Hong Kong
- 10:40 - 11:10 Coffee Break

Morning session 6: Quantum Simulation (II)*Chaired by Jian-Xin Zhong, Xiangtan University*

- 11:10 - 11:35 Simulations of Hubbard Models in Condensed Matter Physics and Cold Atomic Gases
Matthias Troyer, ETH-Zurich
- 11:35 - 12:00 Relaxation of a Density Wave in Optical Lattices ([Presentation File](#))
Ulrich Schollwoeck, Ludwig-Maximilians-University Munich
- 12:00 - 12:10 **Closing Remark**
Zidan Wang, University of Hong Kong
- 12:30 - 14:30 Lunch and Poster Session
- 14:30 - Free Activities