

PROGRAMME (Revised on December 15, 2011)**Wednesday, December 14, 2011 (Day 1)**

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

Morning session 1: Topological Insulators*Chaired by Fuchun Zhang (The University of Hong Kong)*

- 09:05 - 09:30 Interacting Topological Insulators
Shou-Cheng Zhang (Stanford University)
- 09:30 - 09:55 Power Laws Decay and Quasiparticle Interference Pattern of Topological Surface States
Bangfen Zhu (Tsinghua University)
- 09:55 - 10:20 Interaction Effect in Topological Insulators
Xincheng Xie (Peking University)
- 10:20 - 10:45 Topological Insulators and Topological Semimetal
Zhong Fang (Institute of Physics, Chinese Academy of Sciences)
- 10:45 - 11:10 Coffee Break

Morning session 2: Exotic Quantum Matter*Chaired by Jian Wang (The University of Hong Kong)*

- 11:10 - 11:35 Quantum Manipulation of Matter: Optical Initialization of NV- Center in Diamond and Artificial Graphene
Steven G. Louie (University of California, Berkeley)
- 11:35 - 12:00 Field Polarization of Dirac Valleys in Bismuth
Kamran Behnia (ESPCI-Paris)
- 12:00 - 12:25 Correlation-driven Exotic Quantum Phases in Graphene and Doped Kagome Lattice
Jian-Xin Li (Nanjing University)
- 12:25 - 14:30 Lunch and Poster Session

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

14:30 - 14:40 Chaired by T. Maurice Rice, the award is presented by Steven G. Louie

Afternoon session 1: Low Dimensional Systems*Chaired by Bangfen Zhu (Tsinghua University)*

- 14:40 - 15:05 Interplay of Disorder, Interaction and Confinement in Two-dimensional Electron Gas in Intense Magnetic Fields
Xin Wan (Zhejiang University)
- 15:05 - 15:30 Explore Sb Thin Film as an Elemental Topological Insulator
Xuesen Wang (National University of Singapore)
- 15:30 - 15:55 Topological Delocalization in Quantum Spin-Hall Systems without Time-Reversal Symmetry
Li Sheng (Nanjing University)
- 15:55 - 16:20 Landau-Zener-Stückelberg Interference of Microwave Dressed States in a Superconducting Phase Qubit
Yang Yu (Nanjing University)
- 16:20 - 16:50 Coffee Break

Afternoon session 2: Correlated Systems*Chaired by Shiping Feng (Beijing Normal University)*

- 16:50 - 17:15 Recent Progress on the YRZ Theory of the Anomalous Pseudogap Phase of Underdoped Cuprates
T. Maurice Rice (ETH-Zurich / The University of Hong Kong)
- 17:15 - 17:40 Spin Liquid and Spin Glass States in Frustrated Magnets
Seung-Hun Lee (University of Virginia)
- 17:40 - 18:05 Mott Physics, Sign Structure, Ground State Wavefunction, and High- T_c Superconductivity
Zheng Yu Weng (Tsinghua University)
- 19:00 - 22:00 Banquet at the Victoria Harbour Restaurant

Thursday, December 15, 2011 (Day 2)**Morning session 3: Quantum Information and Entanglement***Chaired by Xiaodong Cui (The University of Hong Kong)*

- 09:00 - 09:25 Quantum Correlations: The Role of Topology and Symmetry
Robert Joynt (University of Wisconsin-Madison)
- 09:25 - 09:50 Nonlocal Quantum Entanglement in Electron Systems
Xiao Hu (National Institute for Materials Science)
- 09:50 - 10:15 Quantum Criticality with Entanglement Renormalization
Guifre Vidal (Perimeter Institute for Theoretical Physics)
- 10:15 - 10:40 Generating and Manipulating Narrow-Band Biphotons
Shengwang Du (Hong Kong University of Science and Technology)
- 10:40 - 11:10 Coffee Break

Morning session 4: Optical and Mechanical Systems*Chaired by Wang Yao (The University of Hong Kong)*

- 11:10 - 11:35 Quantum State Transfer between Optical and Mechanical States
Hailin Wang (University of Oregon)
- 11:35 - 12:00 Light Force Operated Nanomechanical Systems
Hong Tang (Yale University)
- 12:00 - 12:25 Dark State Transfer in Optomechanical Systems
Lin Tian (University of California, Merced)
- 12:25 - 14:30 Lunch and Poster Session

Afternoon session 3: Cold Atoms and BEC*Chaired by Jian-Qiang You (Fudan University)*

- 14:30 - 14:55 Some Exact Results on 1D Cold Atoms
Yupeng Wang (Institute of Physics, Chinese Academy of Sciences)
- 14:55 - 15:20 Dynamically Generating Arbitrary Spin-orbit Couplings for Neutral Atoms
Li You (Tsinghua University)
- 15:20 - 15:45 Exotic Superfluidity in Spin-orbit Coupled Bose-Einstein Condensates
Biao Wu (Peking University)
- 15:45 - 16:10 Spin-Orbit-Coupled Dipolar Bose-Einstein Condensates
Su Yi (Institute of Theoretical Physics, Chinese Academy of Sciences)
- 16:10 - 16:40 Coffee Break

Afternoon session 4: Novel Quantum Phenomena*Chaired by Renbao Liu (The Chinese University of Hong Kong)*

- 16:40 - 17:05 Energy Magnetization and Thermal Hall Effect
Qian Niu (The University of Texas at Austin)
- 17:05 - 17:30 Novel Quantum Phases in Staggered Magnetic Fields
Bruce Normand (Renmin University of China)
- 17:30 - 17:55 Macroscopic Klein Tunneling and Spin Josephson Effects in a Spin-Orbit Coupled Bose-Einstein Condensate
Shi-Liang Zhu (South China Normal University)

Friday, December 16, 2011 (Day 3)**Morning session 5: Quantum Gases and Phases***Chaired by Hsi-Sheng Goan (National Taiwan University)*

- 09:00 - 09:25 Density Functional Theory for Atomic Fermi Gases
Matthias Troyer (ETH-Zurich)
- 09:25 - 09:50 Raman Scattering by Cold Atom Ensemble: Entanglement Detection, and Single Shot Gradiometer and Thermometer
Wang Yao (The University of Hong Kong)
- 09:50 - 10:15 Detecting Quantum Phase Transitions Using Classical Noises
Yan Chen (Fudan University)
- 10:15 - 10:45 Coffee Break

Morning session 6: Pnictide Superconductivity*Chaired by Zheng Yu Weng (Tsinghua University)*

- 10:45 - 11:10 Theory of NMR Relaxation Rate in Iron-Pnictide Superconductors
Chin-Sen Ting (University of Houston)
- 11:10 - 11:35 Dynamical Screening in Iron Pnictides
Philipp Werner (ETH-Zurich)

Closing session: Special Lecture*Chaired by Zidan Wang (The University of Hong Kong)*

- 11:35 - 12:15 Topological Concepts in Field Theory and Condensed Matter
Anthony Zee (University of California, Santa Barbara)
- 12:15 - 14:30 Lunch and Poster Session
- 14:30 - Free Activities