

PROGRAMME (Tentative)

Saturday, December 12, 2009 (Day 1)

- 08:30 - 09:00 Registration
 09:00 - 09:10 Welcome Speech, by Zidan Wang and Fuchun Zhang

Morning session 1:

Chaired by Fuchun Zhang (The University of Hong Kong)

- 09:10 - 09:50 **Jaw-Shen Tsai (NEC & RIKEN)**
 Quantum Optics with Josephson Qubits
 09:50 - 10:30 **Siyuan Han (University of Kansas)**
 Measuring Phase Qubit-TLS Entanglement by Vacuum Rabi Oscillation
 10:30 - 11:00 **Yang Yu (Nanjing University)**
 Quantum Interference Induced by Landau-Zener Transition in Superconducting Flux Qubits
 11:00 - 11:20 Tea Break

Morning session 2:

Chaired by Changpu Sun (Institute of Theoretical Physics, CAS)

- 11:20 - 12:00 **Franco Nori (RIKEN & University of Michigan)**
 Atomic Physics and Quantum Optics using Superconducting Circuits
 12:00 - 12:30 **Jianqiang You (Fudan University)**
 Backaction of a Charge Detector on a Solid-state Qubit
 12:30 - 14:25 Lunch and Poster Session

Afternoon: Hong Kong Forum on Quantum Control

Afternoon session 1:

Chaired by Steven G. Louie (University of California, Berkeley)

- 14:30 - 14:40 Presentation Ceremony of Daniel Tsui Fellowship Award, Center of Theoretical and Computational Physics
 Announcement and Certificate presentation
 by T. Maurice Rice (Chair of Selection Committee)
 14:40 - 15:10 **Yanming Ma (Jilin University)**
 Novel High Pressure Structures from First Principles
 15:10 - 15:40 **Shi-Liang Zhu (South China Normal University)** [Presentation File](#)
 Simulation and Detection of Relativistic Effects with Ultra-cold Atoms
 15:40 - 16:10 **Zhanghai Chen (Fudan University)**
 Condensation and Lasing of Polaritons in a ZnO Microcavity
 16:10 - 16:30 Tea Break

Afternoon session 2:

Chaired by Xiangrong Wang (Hong Kong University Science and Technology)

- 16:30 - 17:00 **Bangfen Zhu (Tsinghua University)**
 Direct Detecting of Pure Spin Currents through Optical Method
 17:00 - 17:30 **Xincheng Xie (Institute of Physics, CAS and Oklahoma State University)**
 The Coulomb Blockade Effect in Dissipation and Thermoelectric Properties in Quantum Dots
 17:30 - 18:00 **Li Lu (Institute of Physics, CAS)**
 Electron Transport Properties of a Graphene Manoribbon Quantum Dot Device
 18:30 - 22:00 Banquet at the Kamboat Chinese Cuisine

Sunday, December 13, 2009 (Day 2)**Morning session 3:***Chaired by Bangfen Zhu (Tsinghua University)*

- 09:00 - 09:40 **Chih-Kang Shih (University of Texas at Austin)**
Coherent Control of Semiconductor Quantum Emitters
- 09:40 - 10:20 **Hailin Wang (University of Oregon)**
Cavity QED with Spins in Diamond: A Spin-Photon Interface
- 10:20 - 10:50 **Jiang-Feng Du (University of Science and Technology of China)**
Preserving Electron Spin Coherence in Solids by Optimal Dynamical Decoupling
- 10:50 - 11:10 Tea Break

Morning session 4:*Chaired by Renbao Liu (Chinese University of Hong Kong)*

- 11:10 - 11:40 **Choo Hiap Oh (National University Singapore)**
Optical Rotation of Heavy Hole Spins in Quantum Dot
- 11:40 - 12:10 **Wei-Min Zhang (National Cheng Kung University, Taiwan)**
A Unified Theory of Quantum Decoherence and Quantum Transport
- 12:10 - 12:40 **Lin Tian (University of California, Merced) [Presentation File](#)**
Quantum State Manipulation via Many-body Effect in Solid-state Systems
- 12:40 - 14:25 Lunch and Poster Session

Afternoon session 3:*Chaired by Jianqiang You (Fudan University)*

- 14:30 - 15:00 **Chang-Pu Sun (Institute of Theoretical Physics, CAS)**
How Much Information Memorized by Quantum Non-Markovian Processes
- 15:00 - 15:30 **Hsi-Sheng Goan (National Taiwan University)**
Optimal Control of Quantum Gates
- 15:30 - 16:00 **Xiao-Guang Wang (Zhejiang University)**
Quantum Fisher Information and Spin Squeezing
- 16:00 - 16:20 Tea Break

Afternoon session 4:*Chaired by Zhengwei Zhou (University of Science and Technology of China)*

- 16:20 - 16:50 **Xiang-Bin Wang (Tsinghua University)**
On-demand Entanglement Source with Polarization-Dependent Frequency Shift
- 16:50 - 17:20 **Xinhua Peng (HKUST)**
NMR Implementation of factoring large numbers with Gauss Sums: Suppression of ghost factors
- 17:20 - 17:50 **Baigeng Wang (Nanjing University)**
Generation and Quantum Interference of the Entangled Electron-hole Pairs in a Hanbury Brown and Twiss Interferometer

Monday, December 14, 2009 (Day 3)**Morning session 5:***Chaired by Wang Yao (The University of Hong Kong)*

- 09:00 - 09:40 **Robert Joynt (University of Wisconsin-Madison)**
Qubits in the Presence of $1/f$ Noise
- 09:40 - 10:20 **Mark Sherwin (University of California at Santa Barbara)**
Quantum Coherence in Optical Modulators
- 10:20 - 10:50 **Vicky Choi (Virginia Tech) [Presentation File](#)**
Fundamental Algorithmic Problems in Adiabatic Quantum Computation
- 10:50 - 11:10 Tea Break

Morning session 6:*Chaired by Yan Chen (Fudan University)*

- 11:10 - 11:40 **Susanna Thon (University of California at Santa Barbara)**
Quantum Dot - Optical Microcavity Systems in the Solid State
- 11:40 - 12:10 **Yu-Xi Liu (Tsinghua University)**
Coexistence of Multi-photon Process in Superconducting Qubits with Broken Inversion Symmetry

Concluding Remarks and Introduction to Next Workshop

- 12:10 - 12:30 **Zidan Wang**
- 12:30 - 14:30 Lunch and Poster Session
- 14:30 - Free Activities