

**Center for Quantum Science and Engineering (CQSE)
&
National Center of Theoretical Sciences (NCTS/South)**

**Mini-Course
July 26-29, 2010 (Monday-Thursday)**

Time: July 26-29, 10:30am ~ 12:30pm

Title: Mini-course on Superconducting Quantum Devices: Quantum Bits, Quantum Optics, and More

Speaker: Prof. Lin Tian, University of California, Merced

Place: Rm716, CCMS & New Physics Building, NTU

Syllabus:

Mini-course on Superconducting Quantum Devices: Quantum Bits, Quantum Optics, and More (4 lectures in total, with 2 hours each from 10:30-12:30, July 26-29, 2010 in Room 716, Department of Physics, National Taiwan University)

The lectures will cover the following topics:

1. Quantum circuit and Hamiltonian
2. Superconducting quantum bits (qubits)
3. Decoherence (spin-boson model)
4. Recent progress
5. Cavity quantum electrodynamics (QED) and Transmission line resonator
6. Two level system (TLS) and superconducting Josephson junction resonator
7. Nano electromechanical systems (NEMS), resonator, and laser cooling
8. Coherent frequency conversion

URL: <http://faculty.ucmerced.edu/ltian/>