



THE CHINESE UNIVERSITY OF HONG KONG

Department of Physics
Institute of Theoretical Physics
COLLOQUIUM

Physics behind Quantum Information Processing

by

Professor Wei-Min Zhang (張為民教授)

Department of Physics and Center for Quantum Information Science
National Cheng Kung University

Date: July 17, 2009 (Friday)

Time: 4:00 - 5:00 p.m.

Place: L2, Science Centre, CUHK

(Light refreshments will be served 20 minutes prior to the colloquium.)

ALL INTERESTED ARE WELCOME

Abstract

According to Richard Feynman, an open quantum system is defined as a principal quantum system of interest interacting with its environment of not interest. Study the effect of the environment on the subsequent dynamics of the principal system is a central issue in many interesting research topics related to quantum coherence phenomena, such as quantum decoherence effects, quantum transport phenomena, quantum dissipation dynamics, quantum measurement theory as well as the foundation of quantum and statistical mechanics. The quantum coherence phenomena in open systems are essentially associated with non-equilibrium quantum dynamics which becomes more and more active in recent years due to the rapid development of nano-science and technology as well as the new emerging research field of quantum information science. In this talk, I will concentrate on the mechanism of intrinsic and/or extrinsic loss of quantum coherence in various quantum devices and the fundamental theory of open quantum systems.

Enquiries: 2609 6339