Stevens Institute of Technology

Nanotechnology Graduate Program

Quantum Entanglement Evolution and Control

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Burchard 118, 11 am

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Quantum coherence dynamics of nanosystems is a generic paradigm that has been widely discussed in research fields ranging from atomic and optical physics to condensed matter physics and to quantum information science. Among current research frontiers are non-Markovian theory and disentanglement.

In this talk I will present highlights of our work on several key issues in entanglement dynamics including evolution of spin entanglement under phonon noise, the "sudden death" of entanglement, two-body open system entanglement, probingm any-body entanglement subject to thermal noise, and entanglement control.

Professor Ting Yu is an Associate Professor in the Department of Physics and Engineering Physics at Stevens. Professor Yu received his Ph.D. in Theoretical Physics from the Imperial College, London, England in 1998. His research interests are in quantum information science and quantum optics, including: Entanglement and decoherence of quantum nanodevices such as quantum dots and superconducting qubits, Continuous quantum measurement and quantum feedback control, Entanglement and its applications in quantum metrology and precision detection technology, Quantum coherence dynamics of atomic, molecular and optical systems, Theoretical modeling and simulation of complex quantum systems, Non-Markovian quantum open systems and quantum trajectories, Quantum phase transition, and topological order and quantum topological computation. Prof. Yu as received recent funding from the National Science Foundation and DARPA.

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