



THE CHINESE UNIVERSITY OF HONG KONG  
*Department of Physics*  
SEMINAR

# Adiabatic Rapid Passage Using a Linearly Chirped Pulse in a Single Quantum Dot

*by*

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*Place: Rm 128 Science Centre North Block, CUHK*

ALL INTERESTED ARE WELCOME  
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## Abstract

For many quantum applications, the efficient and accurate preparation of a quantum state is crucial. Many optical state preparations use a transform limited optical pulse, where the fluctuations in pulse intensity, detuning and coupling strength can affect the end result of the prepared state. Here I will present the method of adiabatic rapid passage (ARP) using a linearly chirped pulse and demonstrate its effectiveness in the inversion of a single quantum dot two-level system via electrical readout. I will show that when the adiabatic regime is reached, the system inverts regardless of optical power. The possibility of extending this method to the robust entanglement of spins will be discussed.

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