INSTITUTE SEMINAR

Friday, 12 September 2014 4:00 pm Fermion

Speaker:

Dr. Arnab Das

Department of Theoretical Physics, IACS, Kolkata

Title:

Dynamical Many-body Freezing: Localizing a Quantum System in the Hilbert Space by Periodic Quantum Interference

Abstract:

We show how repeated quantum interference can result in almost absolute freezing of the response in a simple quantum magnet driven periodically in time for particular drive frequencies and amplitudes (the freezing condition). Under freezing condition, the effective Hamiltonian vanishes with all its mutually non-commuting terms, resulting in freezing of certain physical quantities independent of the initial state. Recent experimental results will be discussed. We will also discuss the generalization of the phenomenon for disordered quantum magnets. If time permits we will describe a counter phenomenon of quantum "unfreezing".
