



THEORETICAL PHYSICS SEMINAR CIRCUIT
S N BOSE NATIONAL CENTRE FOR BASIC SCIENCES
SALT LAKE, KOLKATA 700 106

NOTICE FOR SEMINAR

Title

Some studies on modifications of low dimensional systems under the application of periodic driving

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Date: 5th February 2018

Time: 4:00 pm

Venue: Fermion Hall

Abstract

The study of low dimensional systems has been significantly enriched by the novel behaviors observed when these systems are studied in the presence of periodic driving or non-trivial geometry. These have offered a means of modifying the gauge couplings in such systems which may, in certain cases, result in the breaking of key symmetries, thereby opening up new avenues of investigation. In this talk I will consider certain effects of periodic driving on Hall systems both of the square lattice and Graphene types. I will consider the driving of the Aubry-Andre- Harper Hamiltonian with a high frequency periodic magnetic field and the modifications to the nature of the metal-insulator transition in the system. I will also discuss a study of the Haldane model, essentially Graphene in tight binding form with complex valued next-nearest neighbour interactions, under a periodic sequence of delta function kicks. The emphasis being on the changes to the band topology under kicking. Finally, I will outline a 'Floquet Engineering' scheme to simulate curved Graphene in a cold atom setup using a specific periodic drive.
