

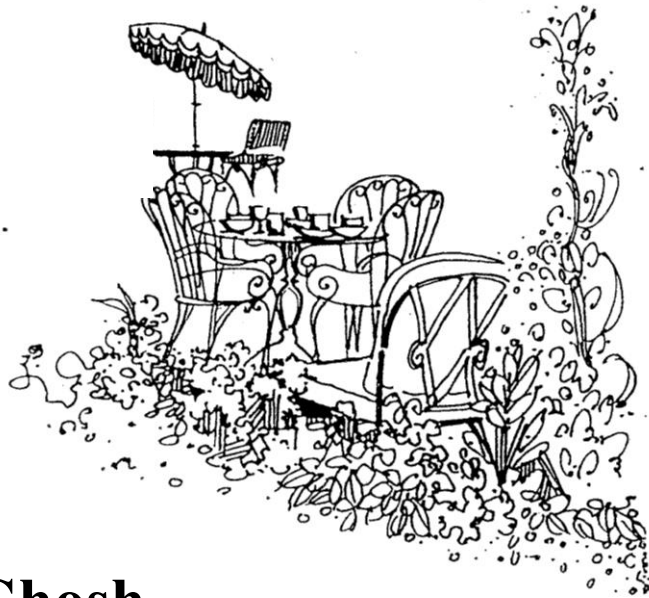
Chez Pierre

Presents ...

Monday, March 5, 2012

12:00pm

MIT Room 4-331



Sankalpa Ghosh

Indian Institute of Technology - New Delhi

“Electron transport in monolayer and bilayer graphene through magnetic barrier”

In this talk I shall describe our recent theoretical work on the electron transport in monolayer and bilayer graphene through magnetic barrier. This is essentially a one dimensional scattering problem by highly non-uniform magnetic field profile with or without a modulation in the applied voltage.

We shall particularly describe its analogy with light propagation in medium with varying dielectric constant and how this optical analogy may be exploited to propose device:

In the later part of the I shall present some results on the effect of random impurities on electron transport in graphene.

We shall particularly try to understand the nature of localization of the states at the Dirac point in monolayer graphene.

The talk will be based on the following papers:

1. S. Ghosh and M. Sharma : J Physics Condensed Matter (Fast Track communication), 21, 292204 (2009).
2. M. Sharma and S. Ghosh : J. Physics Condensed Matter, 23, 055501 (2011).
3. Reversal of Klein Reflection in bilayer graphene: N. Agarwal, S. Grover, S. Ghosh and M. Sharma
arXiv 1106.0408 v2 (submitted)
4. A transfer matrix approach to electron transport in graphene through arbitrary electric and magnetic potential barriers:
S. Grover, S. Ghosh and M. Sharma (submitted)
5. N. Agarwal, S. Ghosh and M. Sharma (in preparation)