

# Department of Theoretical Physics

## Free Meson Seminar

<i>Speaker</i>	:	Debtosh Chowdhury (Indian Institute of Science, Bangalore)
<i>Topic</i>	:	Three roads to Supersymmetry: Impact of direct and indirect searches
<i>Day, Date &amp; Time</i>	:	Thursday, September 27, 2012 at 2:30 p.m.
<i>Place</i>	:	AG 69

### *Abstract*

Supersymmetry is one of the main contenders of physics beyond Standard Model. The Large Hadron Collider will perhaps test the low energy supersymmetry conclusively if it reaches its full designed energy. On the other hand, there are other indirect searches which will impact the 'observability' of supersymmetry at LHC, namely, dark matter and flavor experiments. Recent and upcoming measurements of various rare flavor decays and precise measurements of dark matter relic density, along with the recent LHC Higgs limit, are already putting severe constraints on the SUSY parameter space (in most models of supersymmetry breaking). While the dark matter constraints make the supersymmetric spectrum far more predictable, the flavor constraints typically put the supersymmetric masses out of reach of LHC. In this talk I will concentrate mainly on the impact of light Higgs mass observation on the SUSY parameter space as well as the impact of rare lepton flavor violating decays (due to massive right handed neutrinos) in constraining the SUSY parameter space.

*(Nilmani Mathur)*