Department of Theoretical Physics

Free Meson Seminar

Speaker	:	Probir Roy (SINP, Kolkata)
Topic	:	Four lepton flavor violation at the LHC
Day, Date & Time	:	Thursday, May 3, 2012 at 2:30 p.m.
Place	:	AG 69

Abstract

Flavor is an unresolved puzzle in the Standard Model, being possibly indicative of some yet unknown dynamics underneath. Speculations exist that this may manifest itself in significant strength at the terascale. One consequence could be lepton flavor violation with total lepton number conserved. Already observed in neutrino oscillation experiments, such a phenomenon may show up more prominently at TeV energies, thus signaling a completely new physics. Proposed flavor violating charged dilepton final states have already been studied with reference to the LHC. We shall discuss the production and detection at the LHC of flavor violating charged quadrileptons which will be shown to have certain advantages over dileptons in searching for lepton flavor violation. A classification of all six-fermionic operators in the chiral basis, contributing to such processes, will be made and the corresponding cross section for each computed under the hypothesis of single operator dominance. The sensitivity reach of the new physics scale will also be given in terms of the integrated luminosity.

(Nilmani Mathur)