Department of Theoretical Physics

Free Meson Seminar

Speaker	:	Bhupal Dev (Univ. of Maryland, USA)
Topic	:	Inelastic Dark Matter and Small Majorana Mass of Neutrino
Day, Date & Time	:	Thursday, July 5, 2012 at 2:30 p.m.
Place	:	AG 69

Abstract

Extending the Standard Model to explain small neutrino masses via the inverse seesaw mechanism leads to a new scalar Dark Matter (DM) candidate which can be very light with mass in the 10 GeV range, as suggested by some recent direct detection experiments. We show that embedding the inverse seesaw in a supersymmetric theory leads to a keV-scale mass splitting for the complex scalar DM, and hence, its inelastic nature in direct detection. Our main point is that the inelasticity of the DM is intimately connected to the small Majorana mass of neutrinos. We will also discuss how this scenario can be identified at the LHC.

(Nilmani Mathur)