Area Seminar

Title	Fermi-LAT signal of monochromatic gamma ray from B-L extended SM
Date and Time	08/07/2013 16:00:00
Speaker	Tanushree Basak Senior Research Fellow PRL, Ahmedabad
Area	Theoretical Physics
Venue	Room No. 469

Abstract

The recent observation of Fermi-LAT signal of monochromatic gamma ray has drawn much attention. This observation can be due to the resonant annihilation of the dark matter into two photon. We adopt a (B_L) extended SM which contains a singlet scalar and three right-handed neutrino. The vev of the singlet scalar breaks the U(1)B?L symmetry. This scalar is heavier than the SM ones -- having mass 260 GeV. We have imposed a Z2 symmetry in such way that the 3rd generation right-handed neutrino is qualified as the dark matter candidate. The mass of this right-handed neutrino is 130 GeV. We constrain the scalar mixing angle from relic density and desired cross-section ??v??? for the Fermi-line. We have also checked that this mixing angle allows vacuum stability of this model up to 105 GeV. This might hint that the successful U(1)B?L extended model that can explain Fermi-LAT signal of monochromatic gamma ray line must be a part of larger symmetry group at some high scale.