

Seesaw model with a loop-induced Dirac mass term and dark matter from $U(1)_{B-L}$ gauge symmetry breaking

Wednesday, 25 April 2012 16:40 (25 minutes)

I would like to talk about the TeV-scale seesaw model in which $U(1)_{B-L}$ gauge symmetry can be the common origin of neutrino masses, the dark matter mass, and stability of the dark matter. In our model, Majorana masses of right handed neutrinos and Dirac mass of dark matter are induced by spontaneous $U(1)_{B-L}$ breaking. After electroweak symmetry breaking, light neutrino masses are generated at a two-loop level. In addition, stability of the dark matter is guaranteed by remnant global $U(1)$ symmetry which appears automatically in the Lagrangian with assignments of $U(1)_{B-L}$ charges for new particles. In this talk, I would like to mention about the current experimental constraints and prospects at linear collider experiments in our model.

Presenter: NABESHIMA, Takehiro (University of Toyama)

Session Classification: ACFA Physics