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Radiative Models of Neutrino Mass, Dark Matter, and Related Phenomena

Tuesday 10 May 2016 17:00 (15 minutes)

Several radiative neutrino mass models will be considered. In the first model, a variation of the well known 2006 Scotogenic radiative seesaw model of neutrino mass will be discussed in which Standard Model (SM) is extended with Majorana Fermions, real singlet scalars, and a set of doublet fermions to realize the notion of the inverse seesaw neutrino mass naturally. The lightest of the real scalars through which neutrino masses are generated is protected by discrete Z_2 symmetry and is a possible Dark Matter (DM) candidate.

In the other model, scalar triplet extension of the SM is considered. Lepton number symmetry is implemented to generated neutrino masses radiatively through the interaction of scalar triplet, neutrinos, and DM with a soft breaking of the Lepton number symmetry to $(-1)^L$. Interesting phenomenological implications of this model will be discussed.

Summary

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