

Abstract

Neutrino mass has been observed in some experiments. A Beyond Standard Model theory is required to explain the masses of Neutrinos. There are many possibilities out of which the present material is mainly focused on B-L Model and Left-Right Symmetric Model. Both models are introduced along with comparisons with Standard Model. An introduction to Neutrinoless Double Beta Decay is presented. Also the Effective Neutrino Mass in the standard mechanism is calculated explicitly. The Neutrinoless double beta decay can be mediated by many possible ways [Cha+12] 1 withWRs only with light neutrino exchange. (only e_L as final particle) 2 withWRs only with heavy neutrino exchange. (only e_R as final particle) 3 withWLs only with light neutrino exchange. (only e_L as final particle) 4 withWLs only with heavy neutrino exchange. (only e_R as final particle) 5 withWR,WL and with light neutrino exchange. (e_L and e_R as final particle) 6 withWR,WL and with heavy neutrino exchange. (e_L and e_R as final particle) Only two of the above have a significant contribution, which are shown in figure 5.1 and 5.9. We analyzed only these parts in different hierarchies. We calculated dependence of Dirac and Majorana phases on effective mass by plotting effective mass (due to above mentioned both Feynman diagrams) vs lightest mass in the normal hierarchy and inverted hierarchy.