

From Majorana to Dirac in the Minimal Left-Right Model

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The discovery of the Higgs boson allows us to test the origin of masses by observing the Higgs decay rates which are unambiguously predicted in the Standard model. In the case of neutrinos, the couplings to the SM Higgs cannot always be determined, as is the case in the conventional see-saw scenario with singlets. We show that in the left-right symmetric model the symmetry of the theory removes such ambiguities and one can directly relate neutrino masses to the Higgs vacuum couplings. Possible measurements of heavy neutrino masses and mixings at the LHC suffice to predict Dirac masses and the associated phenomena. These include subdominant decays of heavy neutrinos, neutrinoless double beta decay rates and the size of the electric dipole moment of the electron.

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