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Neutrinoless double beta decay in the framework of $D_4 \times Z_2$ Left-Right Symmetric Model

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With the advent of new physics scenarios in the neutrino sector, several models have been introduced to give an indepth view of the texture of the neutrino mass matrix. Here, we attempt to study the neutrino mass matrix considering the left-right symmetric model and its different phenomenological implications in the light of current neutrino oscillation data. The dihedral group D_4 and cyclic group Z_2 are implemented for the symmetry realization of the neutrino mass matrix. We here focus on the new physics contribution to neutrinoless double beta decay which is one of the most sensitive experiments that can confirm the intrinsic nature of the neutrinos, whether Dirac or Majorana besides providing insights into the scale of the absolute neutrino mass and the hidden mechanism of the neutrino mass generation. We consider both the mass ordering, normal and inverted for our study.

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