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Dark Matter Approach of a Left-Right Symmetric Model

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We investigate a left-right symmetric model respecting $SU(3)_C \otimes SU(2)_L \otimes U(1)_L \otimes SU(2)_R \otimes U(1)_R$ local gauge symmetry. This model contains a large number of heavy exotic particles including the full \textbf{27}-plet fermions of E_6 . In this fermion sector there are two fermions, one is Dirac-like and another is Majorana-like, who are eligible to be dark matter (DM) candidates giving rise to a two-component DM scenario. In order to deal with a large DM-nucleon scattering cross-section we introduce a dimension-6 effective four-fermi operator explaing the interaction among Standard Model (SM) quarks and DM candidates. We constrain the value of the coefficient of such an operator from the data of the experiments like XENON or LUX. We also constrain our parameter spaces using the recent PLANCK data.

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