

# Correlating neutrino magnetic moment and inert scalar dark matter in Type-III radiative scenario

*Thursday 18 July 2024 11:53 (17 minutes)*

We discuss dark matter phenomenology, neutrino magnetic moment and their masses in a Type-III radiative scenario. The Standard Model is enriched with three vector-like fermion triplets and two inert scalar doublets to provide a suitable platform for the above phenomenological aspects. The inert scalars contribute to total relic density of dark matter in the Universe. Neutrino aspects are realised at one-loop with magnetic moment obtained through charged scalars, while neutrino mass gets contribution from charged and neutral scalars. Taking inert scalars up to 2 TeV and triplet fermion in few hundred TeV range, we obtain a common parameter space, compatible with experimental limits associated with both neutrino and dark matter sectors. Finally, we demonstrate that the model is able to provide neutrino magnetic moments in a wide range from  $10^{-12} \mu_B$  to  $10^{-10} \mu_B$ , meeting the bounds of various experiments such as Super-K, TEXONO, Borexino and XENONnT.

## Alternate track

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