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Neutrino mass and discrete dark matter

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The origin and nature of neutrino mass remain one of the most intriguing puzzles in particle physics. To account for the small but nonzero neutrino masses, we propose a hybrid mass-generation mechanism that integrates the canonical seesaw mechanism with radiative neutrino mass generation. This framework is formulated within a non-Abelian discrete flavor symmetry, whose spontaneous breaking not only explains the observed neutrino masses and mixing but also ensures the stability of dark matter. We explore the implications of this setup for neutrino and dark matter phenomenology, considering both Dirac and Majorana neutrinos within the context of this “discrete dark matter” mechanism.

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