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Summary: We propose a model in which the radiative neutrino (Rν) masses are induced by fermion quintuplet and scalar septuplet fields from the minimal-dark-matter (MDM) setup. In conjunction with the 2HDM fields, on top of which our model is built, these hypercharge zero fields and additional scalar quintuplet lead to an accidental DM-protecting Z_2 symmetry and establish the RνMDM model at the three-loop level. We assess the potential for discovery of quintuplet fermions on present and future pp colliders.

MSC:

81V25 Other elementary particle theory in quantum theory
81V15 Weak interaction in quantum theory

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neutrino mass; dark matter; heavy leptons

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