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Collider feasibility of the dynamical scotogenic model

Monday 2 December 2024 17:35 (25 minutes)

In this talk we will first introduce the dynamical scotogenic model, which extends the usual radiative see-saw mechanism by one Z2 even scalar singlet that spontaneously breaks the U(1) lepton number symmetry, and explain some details of its phenomenology, emphasizing in the scalar sector. Then, we explain how this model can introduce neutrino masses compatible with the experimental observations, as well as two possible dark matter candidates in the scalar and fermion sector. After, we make a brief analysis of the DM relic density for both candidates, as well as the scattering cross section in comparison with experimental data from LUX-ZEPPLIN and XENON-1T. Finally, we explain how the model can induce collider observable signatures in both channels, and make a production cross section analysis in the context of the LHC.

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