



Contribution ID: 824

Type: **Poster**

Feasibility to probe the dynamical scotogenic model at the LHC

Wednesday 9 July 2025 18:00 (20 minutes)

In this talk (poster), we perform a feasibility study to probe dark matter production at the LHC, using a $U_L(1)$ scotogenic model. The study is conducted considering the viable parameter space of the model allowed by experimental constraints such as neutrino masses, the Higgs to invisible branching fraction, and dark matter observables. The analysis is carried out using the Markov Chain Monte Carlo numerical method. The production of scalar and fermionic dark matter candidates, predicted by the model, is then studied under the LHC conditions for different luminosity scenarios imposing compressed mass spectra conditions between the lightest fermion and the \mathbb{Z}_2 odd scalar masses. We studied two production mechanisms, Drell-Yan and Vector Boson Fusion and analyzed their production cross sections within the LHC framework.

Secondary track

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Session Classification: Poster T02

Track Classification: T02 - Dark Matter