

Exploring Multilepton Signatures From Dark Matter at the LHC

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While overwhelming cosmological evidences point to the existence of Dark Matter (DM), only its gravitational interaction has been experimentally confirmed. Limitations on the most general mono-X DM signature at colliders motivate searches beyond this. This could manifest in the form of a weak multiplet/doublet DM via weak interactions giving multilepton plus missing energy final states that can be probed at the LHC. Here we present our latest limits on inert 2-Higgs Doublet model (I2HDM) and Minimal Fermion Dark Matter model (MFDM) for 8/13 TeV pp collisions, producing 2-3 leptons plus missing energy final states, using CheckMATE.

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