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Search for vector-like fermions in final states with muons and missing transverse momentum at the HL LHC.

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A proposal is presented for a dark matter (DM) signal search with the Phase-2 CMS Detector at the high luminosity LHC. The model under study includes a scalar field and new particles heavy fermions. Deep neural networks are constructed for the study of the experimental signature consisting of one or two muons in the presence of lost transverse moment. The results of these models are compared with those obtained by making linear cuts .

Authors: RUALES BARBOSA, Anderson Alexis (Universidad de Antioquia (CO)); RUIZ, Jose (Universidad de Antioquia (CO)); RODRIGUEZ GIRALDO, Manuel Alejandro (Universidad de Antioquia (CO))

Presenter: RUALES BARBOSA, Anderson Alexis (Universidad de Antioquia (CO))

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