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Performance of the CMS Level-1 endcap muon trigger to identify closely spaced muon pairs MATTHEW DECARO, Rice University — Searches for new physics involving boosted topologies and displaced vertices can require pairs of muons in an event signature as a signal for exotic phenomena. The Endcap Muon Track Finder (EMTF), a component of the CMS Level-1 Trigger, may erroneously reconstruct two muon tracks with a small spatial separation as a single Level-1 muon. The performance of the EMTF to recognize these signatures is measured by observing how efficiently pairs of closely-separated offline reconstructed muons match to two distinct Level-1 muons using proton-proton collision data at center of mass energies of 13 TeV. A comparison of this trigger performance is done in the context of simulated exotic decays of a next-to-minimal supersymmetric standard model and a dark supersymmetry model with displaced vertices.

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