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# Exploring Dark Sectors Using Dilepton Resonances

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Exotic decays with high multiplicity lepton final states are important indicators of SM interactions with dark sectors and have low observational backgrounds at the LHC. In order to explore hidden valleys/dark sectors (HV/DS), we have recast a recent ATLAS study searching for least two pairs of leptons with equal invariant mass: hep-ex/2306.07413. We have reproduced the results of this study, recast the study in order to put limits on an exotic Higgs decay to 4 dark photons, and explored the sensitivity of the ATLAS search to HV/DS scenarios with dark jets to see whether it has sensitivity to these models.

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