

Abstract Submitted
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Search for new physics using events with two same-sign isolated leptons in the final state L. MUNIZ, University of Florida, CMS COLLABORATION — Although same-sign di-lepton final states are very rare in the SM context, they appear naturally in many different new physics scenarios such as SUSY where two same-sign leptons can be produced in the decay chain of supersymmetric particles. Same-sign di-leptons accompanied by b-quarks can arise from SUSY processes where 3rd generation quark superpartners are lighter than other squarks, resulting in an abundance of top and bottom quarks produced in the cascade decays. In general, same-sign di-leptons can be particularly sensitive to SUSY models with compressed spectra where the mass of the LSP is very close to the mass of the produced supersymmetric particle, either if it is produced via strong production (squarks or gluinos) when it is accompanied with high hadronic activity or if it is produced via EWK production (charginos or neutralinos) when almost no hadronic activity is present. In all cases, the SUSY decay chain ends with the LSP, which escapes undetected and therefore contributes strongly to the missing E_T of the event. We therefore search for SUSY using same-sign di-lepton events with hadronic activity and large missing E_T , using the full 2012 integrated luminosity and we interpret our results in the context of various SUSY models.

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