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Search for new physics in the same-sign dilepton final states with the ATLAS detector at the LHC

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Many new physics models beyond the Standard Model produce same-sign dilepton pairs. Supersymmetry, universal extra dimensions, left-right symmetry, Higgs triplets and Little Higgs are examples of such new models. Same-sign dilepton pairs are a clean signature in the collisions of two protons because not many Standard Model processes produce such final states. This makes it an ideal place to look for new physics. Using 20 fb⁻¹ of 8 TeV data, we set limits on new physics cross sections, especially on doubly-charged Higgs production.

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