

Abstract Submitted  
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**Search for signatures of large extra dimensions in high-mass diphoton events using proton-proton collisions at  $\sqrt{s} = 13$  TeV with CMS**  
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— A search for the non-resonant production of high-mass diphoton events using proton-proton collisions at a center-of-mass energy of 13 TeV collected by the CMS detector is presented. The data corresponds to an integrated luminosity of 35.9 inverse femtobarns recorded during 2016. A next-to-next-to-leading order Monte Carlo calculation is used to predict the dominant, irreducible diphoton background. A data-driven technique is used to estimate the subdominant, reducible photon+jet and dijet backgrounds where one or two jets fake a photon signature in the detector. A non-resonant excess of diphoton events could signify new physics. Results will be presented on the scenario of large extra dimensions as described by the model of Arkani-Hamed, Dimopoulos, and Dvali.

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