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Search for Supersymmetry in Events with Photons and Missing Transverse Energy

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Abstract:

We present a search for supersymmetry in a gauge-mediation scenario with the gravitino as the lightest supersymmetric particle. The analysis is performed based on an integrated luminosity of 4.7 fb^{-1} pp collisions at $\sqrt{s} = 7 \text{ TeV}$ data collected by the CMS experiment at the LHC. We compare the missing transverse energy distribution in events containing either at least one photon or two photons to the spectra expected from Standard Model processes. No excess of events with high missing transverse energy is observed. We set upper limits on the signal production cross section for a range of squark, gluino and neutrino masses at the 95% confidence level.

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