

# Search for supersymmetry in events with photons and low missing transverse energy in pp collisions at $\sqrt{s} = 7$ TeV

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Supersymmetry (SUSY) garners much interest because it can simultaneously solve the hierarchy problem, allow unification of the fundamental interactions, and provide a candidate for dark matter. Most searches for SUSY focus on the presence of large missing transverse energy (MET) carried away by the lightest SUSY particle. As the parameter space available for high-MET SUSY is reduced by recent results from the CERN LHC, it becomes more important to study well motivated low-MET alternatives including models characterized by R-parity violation, gauge mediated SUSY breaking, compressed spectra, and hidden valleys. In particular, the "stealth SUSY" model yields a low-MET signature while conserving R-parity by means of a new hidden sector in which SUSY is approximately conserved.

We present the results of a search for new phenomena in events with two photons and four or more hadronic jets with no requirement on MET. The study is based on a sample of proton-proton collisions at  $\sqrt{s} = 7$  TeV corresponding to 4.96/fb of integrated luminosity collected with the CMS detector in 2011. Based on good agreement between the data and the standard model expectation, the data are used to determine model-independent cross-section limits and first limits on the squark mass in the framework of stealth SUSY.