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Search for stealth supersymmetry in events with jets, either photons or leptons, and low missing transverse momentum in pp collisions at 8 TeV

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Supersymmetry (SUSY) 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. Recent high-MET searches at the CERN LHC have not yet found evidence for SUSY. Therefore, it is important to study well-motivated alternatives with low-MET, such as models characterized by R-parity violation, 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. I will present recent CMS searches for stealth SUSY using jets, leptons or photons, and no MET.

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