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Search for new physics in the low MET monophoton channel with the CMS Detector

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With the recent discovery of the Higgs boson at the Large Hadron Collider, the goals of the Compact Muon Solenoid (CMS) Experiment are now focused on probing for new physics beyond the standard model. The final state consisting of a low transverse energy photon and low missing transverse energy (MET), also called the “monophoton” final state, can be used to constrain a variety of extensions of the standard model, including supersymmetry. I present a search for new physics in this low MET monophoton channel using 7.3/fb of 8 TeV LHC collected with the CMS detector, as part of our parked data program. This analysis extends the high-energy single-photon searches to a lower-energy regime. In the absence of deviations from the standard model predictions, limits are set on the production cross section of exotic decays of the Higgs boson. In addition, we present model independent limits as a function of MET requirement.

Oral or Poster Presentation

Oral

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