Search for natural supersymmetry in events with top quark pairs and photons in pp collisions at root s=8 TeV

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Abstract

Results are presented from a search for natural gauge-mediated supersymmetry (SUSY) in a scenario in which the top squark is the lightest squark, the next-to-lightest SUSY particle is a bino-like neutralino, and the lightest SUSY particle is the gravitino. The strong production of top squark pairs can produce events with pairs of top quarks and neutralinos, with each bino-like neutralino decaying to a photon and a gravitino. The search is performed using a sample of pp collision data accumulated by the CMS experiment at root s = 8 TeV, corresponding to an integrated luminosity of 19.7 fb(-1). The final state consists of a lepton (electron or muon), jets, and one or two photons. The imbalance in transverse momentum in the events is compared with the expected spectrum from standard model processes. No excess event yield is observed beyond the expected background, and the result is interpreted in the context of a general model of gauge-mediated SUSY breaking that leads to exclusion of top squark masses below 650-730 GeV.

Keywords

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Cited References: 66

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1. **Search for photonic signatures of gauge-mediated supersymmetry in 8 TeV pp collisions with the ATLAS detector** — Times Cited: 24
   By: Aad, G.; Abbott, B.; Abdallah, J.; et al.
   Group Author(s): ATLAS Collaboration
   PHYSICAL REVIEW D Volume: 92 Issue: 7 Article Number: 072001 Published: OCT 6 2015

2. **Combined Measurement of the Higgs Boson Mass in pp Collisions at root s=7 and 8 TeV with the ATLAS and CMS Experiments** — Times Cited: 510
   By: Aad, G.; Abbott, B.; Abdallah, J.; et al.
   PHYSICAL REVIEW LETTERS Volume: 114 Issue: 19 Article Number: 191803 Published: MAY 14 2015

3. **Search for supersymmetry in events with photons, bottom quarks, and missing transverse momentum in proton-proton collisions at a centre-of-mass energy of 7 TeV with the ATLAS detector** — Times Cited: 9
   By: Aad, G.; Abajyan, T.; Abbott, B.; et al.
   Group Author(s): Atlas Collaboration
   PHYSICS LETTERS B Volume: 719 Issue: 4-5 Pages: 261-279 Published: FEB 26 2013

4. **Observation of a new particle in the search for the Standard Model Higgs boson with the ATLAS detector at the LHC** — Times Cited: 5,192
   By: Aad, G.; Abajyan, T.; Abbott, B.; et al.
   Group Author(s): ATLAS Collaboration
   PHYSICS LETTERS B Volume: 716 Issue: 1 Pages: 1-29 Published: SEP 17 2012

5. **The Fast Simulation of the CMS Detector at LHC** — Times Cited: 73
   By: Abdullin, S.; Beaudette, P. Azzi F.; Jannot, P.; et al.
   Group Author(s): CMS Collaboration
   INTERNATIONAL CONFERENCE ON COMPUTING IN HIGH ENERGY AND NUCLEAR PHYSICS (CHEP 2010): EVENT PROCESSING Book Series: Journal of Physics Conference Series Volume: 331 Article Number: 032049 Published: 2011

6. **Phenomenology of pure general gauge mediation** — Times Cited: 35
   By: Abel, Steven; Dolan, Matthew J.; Jaeckel, Joerg; et al.
   JOURNAL OF HIGH ENERGY PHYSICS Issue: 12 Article Number: 001 Published: DEC 2009

7. **GEANT4-a simulation toolkit** — Times Cited: 10,211
   By: Agostinelli, S; Allison, J; Amako, K; et al.
   NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT Volume: 506 Issue: 3 Pages: 250-303 Published: JUL 1 2003

8. **SUSY Les Houches Accord 2** — Times Cited: 233
   By: Allanach, B. C.; Balazs, C.; Belanger, G.; et al.
   COMPUTER PHYSICS COMMUNICATIONS Volume: 180 Issue: 1 Pages: 8-25 Published: JAN 1 2009

9. **LOW-ENERGY SUPERSYMMETRY** — Times Cited: 649
By: ALVAREZGAUME, L; CLAUDSON, M; WISE, MB
NUCLEAR PHYSICS B Volume: 207 Issue: 1 Pages: 96-110 Published: 1982

10. **MadGraph 5: going beyond** — Times Cited: 1,397
By: Alwall, Johan; Herquet, Michel; Maltoni, Fabio; et al.
JOURNAL OF HIGH ENERGY PHYSICS Issue: 6 Article Number: 128 Published: JUN 2011

11. **Search for top squarks in final states with one isolated lepton, jets, and missing transverse p momentum in&RADIC;s=13 TeV pp collisions with the ATLAS 13 detector** — Times Cited: 23
Group Author(s): ATLAS Collaboration
Phys. Rev. D Volume: 94 Article Number: 052009 Published: 2016

12. **R-parity-violating supersymmetry** — Times Cited: 637
By: Barbier, R; Berat, C; Besancon, M; et al.
PHYSICS REPORTS-REVIEW SECTION OF PHYSICS LETTERS Volume: 420 Issue: 1-6 Pages: 1-195 Published: NOV 2005

13. **GAUGE-MODELS WITH SPONTANEOUSLY BROKEN LOCAL SUPERSYMMETRY** — Times Cited: 1,228
By: BARBIERI, R; FERRARA, S; SAVOY, CA
PHYSICS LETTERS B Volume: 119 Issue: 4-6 Pages: 343-347 Published: 1982

14. **FITTING USING FINITE MONTE-CARLO SAMPLES** — Times Cited: 179
By: BARLOW, R; BEESTON, C
COMPUTER PHYSICS COMMUNICATIONS Volume: 77 Issue: 2 Pages: 219-228 Published: OCT 1993

15. **Natural Gauge Mediation with a Bino Next-to-Lightest Supersymmetric Particle at the LHC** — Times Cited: 15
By: Barnard, James; Farmer, Benjamin; Gherghetta, Tony; et al.
PHYSICAL REVIEW LETTERS Volume: 109 Issue: 24 Article Number: 241801 Published: DEC 10 2012

16. Title: [not available] — Times Cited: 162
By: BEENAKKER W
HEPPH9611232

17. **Exploring general gauge mediation** — Times Cited: 91
By: Buican, Matthew; Meade, Patrick; Seiberg, Nathan; et al.
JOURNAL OF HIGH ENERGY PHYSICS Issue: 3 Article Number: 016 Published: MAR 2009

18. **FastJet user manual** — Times Cited: 1,560
By: Cacciari, Matteo; Salam, Gavin P.; Soyez, Gregory
EUROPEAN PHYSICAL JOURNAL C Volume: 72 Issue: 3 Article Number: 1896 Published: MAR 2012

19. **The anti-k(t) jet clustering algorithm** — Times Cited: 1,831
By: Cacciari, Matteo; Salam, Gavin P.; Soyez, Gregory
JOURNAL OF HIGH ENERGY PHYSICS Issue: 4 Article Number: 063 Published: APR 2008

20. **LOCALLY SUPERSYMMETRIC GRAND UNIFICATION** — Times Cited: 1,261
By: CHAMSEDDINE, AH; ARNOWITT, R; NATH, P
PHYSICAL REVIEW LETTERS Volume: 49 Issue: 14 Pages: 970-974 Published: 1982

21. **Study of the underlying event at forward rapidity in pp collisions at root s=0.9, 2.76, and 7 TeV** — Times Cited: 61
By: Chatrchyan, S.; Khachatryan, V.; Sirunyan, A. M.; et al.
Group Author(s): CMS Collaboration
JOURNAL OF HIGH ENERGY PHYSICS Issue: 4 Article Number: 072 Published: APR 2013

22. **Performance of CMS muon reconstruction in pp collision events at root s=7Tev** — Times Cited: 337
By: Chatrchyan, S.; Khachatryan, V.; Sirunyan, A. M.; et al.
Group Author(s): CMS Collaboration
JOURNAL OF INSTRUMENTATION Volume: 7 Article Number: P10002 Published: OCT 2012

23. **The CMS experiment at the CERN LHC** — Times Cited: 1,505
By: Chatrchyan, S.; Hmayakyan, G.; Khachatryan, V.; et al.
Group Author(s): CMS Collaboration
JOURNAL OF INSTRUMENTATION Volume: 3 Article Number: S08004 Published: AUG 2008

24. **Search for Top Squark and Higgsino Production Using Diphoton Higgs Boson Decays** — Times Cited: 45
By: Chatrchyan, S.; Khachatryan, V.; Sirunyan, A. M.; et al.
Group Author(s): CMS Collaboration
PHYSICAL REVIEW LETTERS Volume: 112 Issue: 16 Article Number: 161802 Published: APR 25 2014

25. **Evidence for Associated Production of a Single Top Quark and W Boson in pp Collisions at root s=7 TeV** — Times Cited: 112
By: Chatrchyan, S.; Khachatryan, V.; Sirunyan, A. M.; et al.
Group Author(s): CMS Collaboration
PHYSICAL REVIEW LETTERS Volume: 110 Issue: 2 Article Number: 022003 Published: JAN 11 2013

26. **Observation of a new boson at a mass of 125 GeV with the CMS experiment at the LHC** — Times Cited: 4,996
By: Chatrchyan, S.; Khachatryan, V.; Sirunyan, A. M.; et al.
Group Author(s): CMS Collaboration
PHYSICS LETTERS B Volume: 716 Issue: 1 Pages: 30-61 Published: SEP 17 2012

27. **Identification of b-quarks jets with the CMS experiment** — Times Cited: 2
Group Author(s): CMS collaboration
CMS-PAS-BTV-12-001 Published: 2012

28. **Performance of b tagging at s = 8 \documentclass[12pt]{minimal} \usepackage{amsmath} \usepackage{wasysym} \usepackage{amsfonts} \usepackage{amssymb} \usepackage{amsbsy} \usepackage{mathrsfs} \usepackage{upgreek} \setlength{\oddsidemargin}{-69pt} \begin{document}$$ \sqrt{s}=8 $$\end{document} TeV in multijet, ttbar and boosted topology events** — Times Cited: 69
Group Author(s): CMS collaboration
CMS-PAS-BTV-13-001 Published: 2013

29. **Searches for pair production of third- generation squarks in p 13 TeV pp collisions** — Times Cited: 13
Group Author(s): CMS Collaboration
Eur. Phys. J. C Volume: 77 Pages: 327 Published: 2017

30. **Performance of electron reconstruction and selection with the CMS p detector in proton-proton collisons at (s) = 8 TeV** — Times Cited: 1
Group Author(s): CMS collaboration
JINST Volume: 10 Article Number: P06005 Published: 2006

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