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Search for Higgs boson pair production in the gamma gamma b(b)over-bar final state in pp collisions at root s=13 TeV

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Abstract

A search is presented for the production of a pair of Higgs bosons, where one decays into two photons and the other one into a bottom quark-antiquark pair. The analysis is performed using proton-proton collision data at root s = 13 TeV recorded in 2016 by the CMS detector at the LHC, corresponding to an integrated luminosity of 35.9 fb⁻¹. The results are in agreement with standard model (SM) predictions. In a search for resonant production, upper limits are set on the cross section for new spin-0 or spin-2 particles. For the SM-like nonresonant production hypothesis, the data exclude a product of cross section and branching fraction larger than 2.0 fb at 95% confidence level (CL), corresponding to about 24 times the SM prediction. Values of the effective Higgs boson self-coupling κ_X are constrained to be within the range $-11 < \kappa_X < 17$ at 95% CL, assuming all other Higgs boson couplings are at their SM value. The constraints on κ_X are the most restrictive to date. (C) 2018 The Author(s). Published by Elsevier B.V.

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Chen, Ning; Han, Tao; Su, Shufang; et al. [Type-II 2HDM under the precision measurements at the Z-pole and a Higgs factory.](#) JOURNAL OF HIGH ENERGY PHYSICS (2019)

Chen, Ning; Du, Chun; Wu, Yongcheng; et al. [Further study of the global minimum constraint on the two-Higgs-doublet models: LHC searches for heavy Higgs bosons.](#) PHYSICAL REVIEW D (2019)

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- Search for resonant diboson production in the $l\bar{l}(q)\bar{q}$ final state in pp collisions at root s=8 TeV with the ATLAS detector** Times Cited: 158

By: Aad, G.; Abbott, B.; Abdallah, J.; et al.
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EUROPEAN PHYSICAL JOURNAL C Volume: 75 Issue: 2 Article Number: 69 Published: FEB 10 2015
- Title: [not available] Times Cited: 46

By: Aad, G.
Group Author(s): ATLAS Ciiab.
Phys. Rev. Lett. Volume: 114 Article Number: 081802 Published: 2015
- 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: 597

By: Aad, G.; Abbott, B.; Abdallah, J.; et al.

PHYSICAL REVIEW LETTERS Volume: 114 Issue: 19 Article Number: 191803 Published: MAY 14 2015

4. **Observation of a new particle in the search for the Standard Model Higgs boson with the ATLAS detector at the LHC** Times Cited: 5,175
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. **GEANT4-a simulation toolkit** Times Cited: 10,564
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
6. **A general framework for implementing NLO calculations in shower Monte Carlo programs: the POWHEG BOX** Times Cited: 901
By: Alioli, Simone; Nason, Paolo; Oleari, Carlo; et al.
JOURNAL OF HIGH ENERGY PHYSICS Issue: 6 Article Number: 043 Published: JUN 2010
7. **The automated computation of tree-level and next-to-leading order differential cross sections, and their matching to parton shower simulations** Times Cited: 1,999
By: Alwall, J.; Frederix, R.; Frixione, S.; et al.
JOURNAL OF HIGH ENERGY PHYSICS Issue: 7 Article Number: 079 Published: JUL 17 2014
8. **Procedure for the LHC Higgs Boson Search Combination in Summer 2011** Times Cited: 3
Group Author(s): ATLAS and CMS Collaborations
Technical Report CMS-NOTE-2011-005, ATL-PHYS-PUB-2011-11 Published: 2011
9. **Search for pair production of Higgs bosons in the bbbb final state using proton-proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector** Times Cited: 19
Group Author(s): ATLAS Collaboration
Phys. Rev. D Volume: 94 Article Number: 052002 Published: 2016
10. **Searches for Higgs boson pair production in the hh and $bb\tau\tau$, $\gamma\gamma WW^*$, $\gamma\gamma bb$, bbbb channels with the ATLAS detector** Times Cited: 26
Group Author(s): ATLAS collaboration
Phys. Rev. D Volume: 92 Article Number: 092004 Published: 2015
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11. **Effective field theory analysis of double Higgs boson production via gluon fusion** Times Cited: 101
By: Azatov, Aleksandr; Contino, Roberto; Panico, Giuliano; et al.
PHYSICAL REVIEW D Volume: 92 Issue: 3 Article Number: 035001 Published: AUG 4 2015
12. **The measurement of the Higgs self-coupling at the LHC: theoretical status** Times Cited: 182
By: Baglio, J.; Djouadi, A.; Groeber, R.; et al.
JOURNAL OF HIGH ENERGY PHYSICS Issue: 4 Article Number: 151 Published: APR 2013
13. **Higgs production via gluon fusion in the POWHEG approach in the SM and in the MSSM** Times Cited: 91
By: Bagnaschi, E.; Degrandi, G.; Slavich, P.; et al.
JOURNAL OF HIGH ENERGY PHYSICS Issue: 2 Article Number: 088 Published: FEB 2012
14. **Parton distributions for the LHC run II** Times Cited: 656
By: Ball, Richard D.; Bertone, Valerio; Carrazza, Stefano; et al.
Group Author(s): NNPDF Collaboration
JOURNAL OF HIGH ENERGY PHYSICS Issue: 4 Article Number: 040 Published: APR 8 2015
15. **Simulation of the dynamic inefficiency of the CMS pixel detector** Times Cited: 1
By: Bartok, M.
Group Author(s): CMS Collaboration
JOURNAL OF INSTRUMENTATION Volume: 10 Article Number: C05006 Published: MAY 2015
16. **Spin and parity of a single-produced resonance at the LHC** Times Cited: 142
By: Bolognesi, Sara; Gao, Yanyan; Gribsan, Andrei V.; et al.

17. **Full top quark mass dependence in Higgs boson pair production at NLO** Times Cited: 48
By: Borowka, S.; Greiner, N.; Heinrich, G.; et al.
JOURNAL OF HIGH ENERGY PHYSICS Issue: 10 Article Number: 107 Published: OCT 20 2016
18. **Theory and phenomenology of two-Higgs-doublet models** Times Cited: 892
By: Branco, G. C.; Ferreira, P. M.; Lavoura, L.; et al.
PHYSICS REPORTS-REVIEW SECTION OF PHYSICS LETTERS Volume: 516 Issue: 1-2 Pages: 1-102 Published: JUL 2012
19. **LHAPDF6: parton density access in the LHC precision era** Times Cited: 271
By: Buckley, Andy; Ferrando, James; Lloyd, Stephen; et al.
EUROPEAN PHYSICAL JOURNAL C Volume: 75 Issue: 3 Article Number: 132 Published: MAR 20 2015
20. **PDF4LHC recommendations for LHC Run II** Times Cited: 285
By: Butterworth, Jon; Carrazza, Stefano; Cooper-Sarkar, Amanda; et al.
JOURNAL OF PHYSICS G-NUCLEAR AND PARTICLE PHYSICS Volume: 43 Issue: 2 Article Number: 023001 Published: FEB 2016
21. Title: [not available] Times Cited: 368
By: CACCIARI M
J HIGH ENERGY PHYS Published: 2008
22. **FastJet user manual** Times Cited: 1,641
By: Cacciari, Matteo; Salam, Gavin P.; Soyez, Gregory
EUROPEAN PHYSICAL JOURNAL C Volume: 72 Issue: 3 Article Number: 1896 Published: MAR 2012
23. **A compression algorithm for the combination of PDF sets** Times Cited: 19
By: Carrazza, Stefano; Latorre, Jose I.; Rojo, Juan; et al.
EUROPEAN PHYSICAL JOURNAL C Volume: 75 Issue: 10 Article Number: 474 Published: OCT 5 2015
24. **Gravity particles from warped extra dimensions, predictions for LHC** Times Cited: 2
By: Carvalho, A.
arXiv:1404.0102 Published: 2014
25. **Analytical parametrization and shape classification of anomalous HH production in the EFT approach** Times Cited: 3
By: Carvalho, A.; Dall'Osso, M; Manzano, P. De Castro; et al.
arXiv:1608.06578 Published: 2016
[\[Show additional data\]](#)
26. **On the rein terpretation of non-resonant searches for Higgs boson pairs** Times Cited: 1
By: Carvalho, A.; Goertz, E; Mimasu, K.; et al.
arXiv:1710.08261 Published: 2017
[\[Show additional data\]](#)
27. **Higgs pair production: choosing benchmarks with cluster analysis** Times Cited: 16
By: Carvalho, Alexandra; Dall'Osso, Martino; Dorigo, Tommaso; et al.
JOURNAL OF HIGH ENERGY PHYSICS Issue: 4 Article Number: 126 Published: APR 20 2016
28. **Missing transverse energy performance of the CMS detector** Times Cited: 88
By: Chatrchyan, S.; Khachatryan, V.; Sirunyan, A. M.; et al.
Group Author(s): CMS Collaboration
JOURNAL OF INSTRUMENTATION Volume: 6 Article Number: P09001 Published: SEP 2011
29. **The CMS experiment at the CERN LHC** Times Cited: 1,755
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
30. **Observation of a new boson at a mass of 125 GeV with the CMS experiment at the LHC** Times Cited: 5,137

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

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