Search for heavy resonances decaying into two Higgs bosons or into a Higgs boson and a W or Z boson in proton-proton collisions at 13 TeV

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Abstract

A search is presented for massive narrow resonances decaying either into two Higgs bosons, or into a Higgs boson and a W or Z boson. The decay channels considered are HHbb+- and VHqq-, where H denotes the Higgs boson, and V denotes the W or Z boson. This analysis is based on a data sample of proton-proton collisions collected at a center-of-mass energy of 13 TeV by the CMS Collaboration, corresponding to an integrated luminosity of 35.9 fb(-1). For the TeV-scale mass resonances considered, substructure techniques provide ways to differentiate among the hadronization products from vector boson decays to quarks, Higgs boson decays to bottom quarks, and quark- or gluon-induced jets. Reconstruction techniques are used that have been specifically optimized to select events in which the tau lepton pair is highly boosted. The observed data are consistent with standard model expectations and upper limits are set at 95% confidence level on the product of cross section and branching fraction for resonance masses between 0.9 and 4.0 TeV. Exclusion limits are set in the context of bulk radion and graviton models:spin-0 radion resonances are excluded below a mass of 2.7 TeV at 95% confidence level. In the spin-1 heavy vector triplet framework, mass-degenerate W and Z resonances with dominant couplings to the standard model gauge bosons are excluded below a mass of 2.8 TeV at 95% confidence level. These are the first limits for massive resonances at the TeV scale with these decay channels at 13 TeV.

Keywords

Author Keywords: Beyond Standard Model; Hadron-Hadron scattering (experiments); Higgs physics
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1. **Search for heavy resonances decaying into WW in the e nu mu nu final state in pp collisions at root s=13 TeV with the ATLAS detector** Times Cited: 27
   By: Aaboud, M.; Aad, G.; Abbott, B.; et al.
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   EUROPEAN PHYSICAL JOURNAL C Volume: 78 Issue: 1 Article Number: 24 Published: JAN 13 2018

2. **Searches for heavy ZZ and ZW resonances in the llqq and vvqq final states in pp collisions at root s=13 TeV with the ATLAS detector** Times Cited: 21
   By: Aaboud, M.; Aad, G.; Abbott, B.; et al.
   Group Author(s): ATLAS Collaboration
   JOURNAL OF HIGH ENERGY PHYSICS Issue: 3 Article Number: 009 Published: MAR 5 2018

3. **Search for resonant W Z production in the fully leptonic final state in proton-proton collisions at root s=13 TeV with the ATLAS detector** Times Cited: 5
   By: Aaboud, M.; Aad, G.; Abbott, B.; et al.
   Group Author(s): ATLAS Collaboration
   PHYSICS LETTERS B Volume: 787 Pages: 68-88 Published: DEC 10 2018

4. **Search for diboson resonances with boson-tagged jets in pp collisions at root S=13 TeV with the ATLAS detector** — Times Cited: 21
By: Aaboud, M.; Aad, G.; Abbott, B.; et al.
Group Author(s): ATLAS Collaboration
PHYSICS LETTERS B Volume: 777 Pages: 91-113 Published: FEB 10 2018

5. **Search for heavy resonances decaying to a W or Z boson and a Higgs boson in the q(q)over-bar(('))b(b)over-bar final state in pp collisions at root s =13 TeV with the ATLAS detector** — Times Cited: 20
By: Aaboud, M.; Aad, G.; Abbott, B.; et al.
Group Author(s): Atlas Collaboration
PHYSICS LETTERS B Volume: 774 Pages: 494-515 Published: NOV 10 2017

6. **Warped gravitons at the CERN LHC and beyond** — Times Cited: 129
By: Agashe, Kaustubh; Davoudiasl, Hooman; Perez, Gilad; et al.
PHYSICAL REVIEW D Volume: 76 Issue: 3 Article Number: 036006 Published: AUG 2007

7. **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

8. **Hadronic top-quark pair-production with one jet and parton showering** — Times Cited: 47
By: Alioli, Simone; Moch, Sven-Olaf; Uwer, Peter
JOURNAL OF HIGH ENERGY PHYSICS Issue: 1 Article Number: 137 Published: JAN 26 2012

9. **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

10. **CORRECTION** — Times Cited: 69
By: ALTARELLI, G
ZEITSCHRIFT FUR PHYSIK C-PARTICLES AND FIELDS Volume: 47 Issue: 4 Pages: 676-676 Published: 1990

11. **SEARCHING FOR NEW HEAVY VECTOR BOSONS IN PP-BAR COLLIDERS** — Times Cited: 126
By: ALTARELLI, G; MELE, B; RUIZALTABA, M
ZEITSCHRIFT FUR PHYSIK C-PARTICLES AND FIELDS Volume: 45 Issue: 1 Pages: 109-121 Published: 1989

12. **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

13. **Search for RS gravitons via WLWL decays** — Times Cited: 31
By: Antipin, Oleg; Atwood, David; Soni, Amarjit
PHYSICS LETTERS B Volume: 666 Issue: 2 Pages: 155-161 Published: AUG 14 2008

14. **The littlest Higgs** — Times Cited: 633
By: Arkani-Hamed, N; Cohen, AG; Katz, E; et al.
JOURNAL OF HIGH ENERGY PHYSICS Issue: 7 Article Number: 034 Published: JUL 2002

15. **Procedure for the LHC Higgs boson search combination in Summer 2011** — Times Cited: 2
Group Author(s): ATLAS, CMS collaborations and LHC Higgs Combination Group
ATL-PHYS-PUB-2011-11 Published: 2011
Publisher: CERN, Geneva, Switzerland

16. **Search for pair production of Higgs bosons in the b b b b \documentclass[12pt]{minimal} \usepackage{amsmath} \usepackage{wasysym} \usepackage{amsfonts} \usepackage{amssymb} \usepackage{amsbsy} \usepackage{mathrsfs} \usepackage{upgreek} \setlength{\oddsidemargin}{-69pt} \begin{document}$$ b\overline{b}b\overline{b} $$\end{document} final state using proton-proton collisions at s = 13 \documentclass[12pt]{minimal} \usepackage{amsmath} \usepackage{wasysym} \usepackage{amsfonts} \usepackage{amssymb} \usepackage{amsbsy} \usepackage{mathrsfs} \usepackage{upgreek} \setlength{\oddsidemargin}{-69pt} \begin{document}$$ \sqrt{s}=13 $$\end{document} TeV with the ATLAS detector** — Times Cited: 7

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17. **Search for IVIV/117 resonance production in (vqg final states in pp collisions at v s = 13 TeV with the ATLAS detector** Times Cited: 17

Group Author(s): ATLAS Collaboration

J. High Energy Phys. Volume: 03 Article Number: 042 Published: 2018

18. **Search for heavy resonances decaying into a W or Z boson and a p Higgs boson in final states with leptons and b-jets in 36 fb-1of ? s = 13 TeV pp collisions with the ATLAS detector** Times Cited: 5

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19. **Search for heavy resonances decaying into a W or Z boson and a Higgs boson in final states with leptons and b-jets in 36 fb of p s = 13 TeV pp collisions with the ATLAS detector** Times Cited: 20

Group Author(s): ATLAS collaboration

JHEP Volume: 03 Pages: 174 Published: 2018

20. **Combination of searches for heavy resonances decaying into bosonic and leptonic final states using 36 fb -1 of proton-proton collision data at s = 13 \documentclass[12pt]{minimal} \usepackage{amsmath} \usepackage{wasysym} \usepackage{amsfonts} \usepackage{amssymb} \usepackage{amsbsy} \usepackage{mathrsfs} \usepackage{upgreek} \setlength{\oddsidemargin}{-69pt} \begin{document}$$ \sqrt{s}=13 $$\end{document} TeV with the ATLAS detector** Times Cited: 4

Group Author(s): ATLAS collaboration

Phys. Rev Volume: D 98 Article Number: 052008 Published: 2018

21. **Search for resonant and non-resonant Higgs boson pair production in the b b +-\documentclass[12pt]{minimal} \usepackage{amsmath} \usepackage{wasysym} \usepackage{amsfonts} \usepackage{amssymb} \usepackage{amsbsy} \usepackage{mathrsfs} \usepackage{upgreek} \setlength{\oddsidemargin}{-69pt} \begin{document}$$ b\overline{b}{\tau}^{+}{\tau}^{-} $$\end{document} decay channel in pp collisions at s = 13 \documentclass[12pt]{minimal} \usepackage{amsmath} \usepackage{wasysym} \usepackage{amsfonts} \usepackage{amssymb} \usepackage{amsbsy} \usepackage{mathrsfs} \usepackage{upgreek} \setlength{\oddsidemargin}{-69pt} \begin{document}$$ \sqrt{s}=13 $$\end{document} TeV with the ATLAS detector** Times Cited: 4

Group Author(s): ATLAS collaboration

Phys. Rev. Lett Volume: 121 Article Number: 191801 Published: 2018

22. **Herwig plus plus physics and manual** Times Cited: 914

By: Baehr, Manuel; Gieseke, Stefan; Gigg, Martyn A.; et al.

EUROPEAN PHYSICAL JOURNAL C Volume: 58 Issue: 4 Pages: 639-707 Published: DEC 2008

23. **Composite Higgses** Times Cited: 141

By: Bellazzini, Brando; Csaki, Csaba; Serra, Javi

EUROPEAN PHYSICAL JOURNAL C Volume: 74 Issue: 5 Article Number: 2766 Published: MAY 27 2014

24. **Pileup per particle identification** Times Cited: 52

By: Bertolini, Daniele; Harris, Philip; Low, Matthew; et al.

JOURNAL OF HIGH ENERGY PHYSICS Issue: 10 Article Number: 059 Published: OCT 9 2014

25. **Reconstruction of the Higgs mass in H -> tau tau Events by Dynamical Likelihood techniques** Times Cited: 19

By: Bianchini, Lorenzo; Conway, John; Friis, Evan Klose; et al.

20TH INTERNATIONAL CONFERENCE ON COMPUTING IN HIGH ENERGY AND NUCLEAR PHYSICS (CHEP2013), PARTS 1-6 Book Series: Journal of Physics Conference Series Volume: 513 Article Number: UNSP 022035 Published: 2014

26. **Reconstruction of the Higgs mass in events with Higgs bosons decaying into a pair of tau leptons using matrix element techniques** Times Cited: 2

By: Bianchini, Lorenzo; Calpas, Betty; Conway, John; et al.

NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT Volume: 862 Pages: 54-84 Published: AUG 1 2017

27. **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

28. **The anti-k(t) jet clustering algorithm** Times Cited: 2,071

By: Cacciari, Matteo; Salam, Gavin P.; Soyez, Gregory
JOURNAL OF HIGH ENERGY PHYSICS Issue: 4 Article Number: 063 Published: APR 2008

29. **Performance of CMS muon reconstruction in pp collision events at root s=7Tev** Times Cited: 361
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

30. **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

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