

Free Full Text from Publisher [Look Up Full Text](#) [Find PDF](#) [Full Text Options](#) [Export...](#) [Add to Marked List](#)

Search for a standard model-like Higgs boson in the mass range between 70 and 110 GeV in the diphoton final state in proton-proton collisions at root s=8 and 13 TeV

By: [Sirunyan, AM](#) (Sirunyan, A. M.)^[1]; [Tumasyan, A](#) (Tumasyan, A.)^[1]; [Adam, W](#) (Adam, W.)^[2]; [Ambrogio, F](#) (Ambrogio, F.)^[2]; [Asilar, E](#) (Asilar, E.)^[2]; [Bergauer, T](#) (Bergauer, T.)^[2]; [Brandstetter, J](#) (Brandstetter, J.)^[2]; [Dragicevic, M](#) (Dragicevic, M.)^[2]; [Ero, J](#) (Ero, J.)^[2]; [Del Valle, AE](#) (Del Valle, A. Escalante)^[2] ...More

Group Author(s): CMS Collaboration
[View Web of Science ResearcherID and ORCID](#)

PHYSICS LETTERS B
 Volume: 793 Pages: 320-347
 DOI: 10.1016/j.physletb.2019.03.064
 Published: JUN 10 2019
 Document Type: Article
[View Journal Impact](#)

Abstract

The results of a search for a standard model-like Higgs boson in the mass range between 70 and 110 GeV decaying into two photons are presented. The analysis uses the data set collected with the CMS experiment in proton-proton collisions during the 2012 and 2016 LHC running periods. The data sample corresponds to an integrated luminosity of 19.7 (35.9) fb⁻¹ at root s = 8 (13) TeV. The expected and observed 95% confidence level upper limits on the product of the cross section and branching fraction into two photons are presented. The observed upper limit for the 2012 (2016) data set ranges from 129 (161) fb to 31 (26) fb. The statistical combination of the results from the analyses of the two data sets in the common mass range between 80 and 110 GeV yields an upper limit on the product of the cross section and branching fraction, normalized to that for a standard model-like Higgs boson, ranging from 0.7 to 0.2, with two notable exceptions: one in the region around the Z boson peak, where the limit rises to 1.1, which may be due to the presence of Drell-Yan dielectron production where electrons could be misidentified as isolated photons, and a second due to an observed excess with respect to the standard model prediction, which is maximal for a mass hypothesis of 95.3 GeV with a local (global) significance of 2.8 (1.3) standard deviations. (C) 2019 The Author(s). Published by Elsevier B.V.

Keywords

Author Keywords: CMS; Physics; Higgs; Diphoton
 KeyWords Plus: SUPERSYMMETRIC MODELS; BROKEN SYMMETRIES; PHENOMENOLOGY; EXTENSION; BREAKDOWN; BREAKING

Author Information

Reprint Address: Sirunyan, AM (reprint author)

+ Yerevan Phys Inst, Yerevan, Armenia.

Addresses:

- + [1] Yerevan Phys Inst, Yerevan, Armenia
- + [2] Inst Hochenergiephys, Vienna, Austria
- + [3] Inst Nucl Problems, Minsk, BELARUS
- + [4] Univ Antwerp, Antwerp, Belgium
- + [5] Vrije Univ Brussel, Brussels, Belgium
- + [6] Univ Libre Bruxelles, Brussels, Belgium
- + [7] Catholic Univ Louvain, Louvain La Neuve, Belgium
- + [8] Ctr Brasileiro Pesquisas Fis, Rio De Janeiro, Brazil
- + [9] Univ Estado Rio de Janeiro, Rio De Janeiro, Brazil
- + [10] Univ Estadual Paulista, Sao Paulo, Brazil
- + [11] Univ Fed ABC, Sao Paulo, Brazil
- + [12] Bulgarian Acad Sci, Inst Nucl Res & Nucl Energy, Sofia, Bulgaria
- + [13] Univ Sofia, Sofia, Bulgaria
- + [14] Beihang Univ, Beijing, Peoples R China
- + [15] Inst High Energy Phys, Beijing, Peoples R China
- + [16] Peking Univ, State Key Lab Nucl Phys & Technol, Beijing, Peoples R China
- + [17] Tsinghua Univ, Beijing, Peoples R China
- + [18] Univ Los Andes, Bogota, Colombia
- + [19] Univ Split, Fac Elect Engrn Mech Engrn & Naval Architecture, Split, Croatia
- + [20] Univ Split, Fac Sci, Split, Croatia
- + [21] Inst Rudjer Boskovic, Zagreb, Croatia

Citation Network

In Web of Science Core Collection

8

Times Cited

[Create Citation Alert](#)

All Times Cited Counts

8 in All Databases

[See more counts](#)

77

Cited References

[View Related Records](#)

Most recently cited by:

Cao, Junjie; Jia, Xinglong; Yue, Yuanfang; et al.
[96 GeV diphoton excess in seesaw extensions of the natural NMSSM.](#)
 PHYSICAL REVIEW D (2020)

Arcadi, Giorgio; Djouadi, Abdelhak; Raidal, Martti.
[Dark Matter through the Higgs portal.](#)
 PHYSICS REPORTS-REVIEW SECTION OF PHYSICS LETTERS (2020)

[View All](#)

Use in Web of Science

Web of Science Usage Count

5

22

Last 180 Days

Since 2013

[Learn more](#)

This record is from:

Web of Science Core Collection
 - Science Citation Index Expanded

Suggest a correction

If you would like to improve the quality of the data in this record, please [suggest a correction](#).

- + [22] Univ Cyprus, Nicosia, Cyprus
- + [23] Charles Univ Prague, Prague, Czech Republic
- [24] Univ San Francisco Quito, Quito, Ecuador
- + [25] Egyptian Network High Energy Phys, Acad Sci Res & Technol Arab Republ Egypt, Cairo, Egypt
- + [26] NICPB, Tallinn, Estonia
- + [27] Univ Helsinki, Dept Phys, Helsinki, Finland
- + [28] Helsinki Inst Phys, Helsinki, Finland
- + [29] Lappeenranta Univ Technol, Lappeenranta, Finland
- + [30] Univ Paris Saclay, IRFU, CEA, Gif Sur Yvette, France
- + [31] Univ Paris Saclay, Ecole Polytech, Lab Leprince Ringuet, CNRS,IN2P3, Palaiseau, France
- + [32] Univ Strasbourg, IPHC UMR 7178, CNRS, Strasbourg, France
- + [33] IN2P3, CNRS, Ctr Calcul, Villeurbanne, France
- + [34] Univ Claude Bernard Lyon 1, Univ Lyon, Inst Phys Nucl Lyon, CNRS,IN2P3, Villeurbanne, France
- + [35] Georgian Tech Univ, Tbilisi, Georgia
- + [36] Tbilisi State Univ, Tbilisi, Georgia
- + [37] Rhein Westfal TH Aachen, Phys Inst 1, Aachen, Germany
- + [38] Rhein Westfal TH Aachen, Phys Inst A3, Aachen, Germany
- + [39] Rhein Westfal TH Aachen, Phys Inst B3, Aachen, Germany
- + [40] DESY, Hamburg, Germany
- + [41] Univ Hamburg, Hamburg, Germany
- + [42] Karlsruher Inst Technol, Karlsruhe, Germany
- + [43] NCSR Demokritos, INPP, Aghia Paraskevi, Greece
- + [44] Univ Athens, Athens, Greece
- + [45] Natl Tech Univ Athens, Athens, Greece
- + [46] Univ Ioannina, Ioannina, Greece
- + [47] Eotvos Lorand Univ, MTA ELTE Lendulet CMS Particle & Nucl Phys Grp, Budapest, Hungary
- + [48] Wigner Res Ctr Phys, Budapest, Hungary
- + [49] Inst Nucl Res ATOMKI, Debrecen, Hungary
- + [50] Univ Debrecen, Inst Phys, Debrecen, Hungary
- + [51] Indian Inst Sci IISc, Bangalore, Karnataka, India
- + [52] HBNI, Natl Inst Sci Educ & Res, Bhubaneswar, India
- + [53] Panjab Univ, Chandigarh, India
- + [54] Univ Delhi, Delhi, India
- + [55] HBNI, Saha Inst Nucl Phys, Kolkata, India
- + [56] Indian Inst Technol Madras, Madras, Tamil Nadu, India
- + [57] Bhabha Atom Res Ctr, Mumbai, Maharashtra, India
- + [58] Tata Inst Fundamental Res A, Mumbai, Maharashtra, India
- + [59] Tata Inst Fundamental Res B, Mumbai, Maharashtra, India
- + [60] Indian Inst Sci Educ & Res, Pune, Maharashtra, India
- [61] Inst Res Fundamental Sci IPM, Tehran, Iran
- + [62] Univ Coll Dublin, Dublin, Ireland
- + [63] Ist Nazl Fis Nucl, Sez Bari, Bari, Italy
- + [64] Univ Bari, Bari, Italy
- + [65] Politecn Bari, Bari, Italy
- + [66] Ist Nazl Fis Nucl, Sez Bologna, Bologna, Italy
- + [67] Univ Bologna, Bologna, Italy
- + [68] Ist Nazl Fis Nucl, Sez Catania, Catania, Italy
- + [69] Univ Catania, Catania, Italy
- + [70] Ist Nazl Fis Nucl, Sez Firenze, Florence, Italy
- + [71] Univ Firenze, Florence, Italy
- + [72] Ist Nazl Fis Nucl, Lab Nazl Frascati, Frascati, Italy
- + [73] Ist Nazl Fis Nucl, Sez Genova, Genoa, Italy
- + [74] Univ Genoa, Genoa, Italy
- + [75] Ist Nazl Fis Nucl, Sez Milano Bicocca, Milan, Italy
- + [76] Univ Milano Bicocca, Milan, Italy
- + [77] Ist Nazl Fis Nucl, Sez Napoli, Naples, Italy
- + [78] Univ Napoli Federico II, Naples, Italy

- + [79] Univ Basilicata, Potenza, Italy
- + [80] Univ G Marconi, Rome, Italy
- + [81] Ist Nazl Fis Nucl, Sez Padova, Padua, Italy
- + [82] Univ Padua, Padua, Italy
- + [83] Univ Trento, Trento, Italy
- + [84] Ist Nazl Fis Nucl, Sez Pavia, Pavia, Italy
- + [85] Univ Pavia, Pavia, Italy
- + [86] Ist Nazl Fis Nucl, Sez Perugia, Perugia, Italy
- + [87] Univ Perugia, Perugia, Italy
- + [88] Ist Nazl Fis Nucl, Sez Pisa, Pisa, Italy
- + [89] Univ Pisa, Pisa, Italy
- + [90] Scuola Normale Super Pisa, Pisa, Italy
- + [91] Ist Nazl Fis Nucl, Sez Roma, Rome, Italy
- + [92] Sapienza Univ Roma, Rome, Italy
- + [93] Ist Nazl Fis Nucl, Sez Torino, Turin, Italy
- + [94] Univ Torino, Turin, Italy
- + [95] Univ Piemonte Orientale, Novara, Italy
- + [96] Ist Nazl Fis Nucl, Sez Trieste, Trieste, Italy
- + [97] Univ Trieste, Trieste, Italy
- + [98] Kyungpook Natl Univ, Daegu, South Korea
- + [99] Chonnam Natl Univ, Inst Universe & Elementary Particles, Kwangju, South Korea
- + [100] Hanyang Univ, Seoul, South Korea
- + [101] Korea Univ, Seoul, South Korea
- + [102] Seoul Natl Univ, Seoul, South Korea
- + [103] Univ Seoul, Seoul, South Korea
- + [104] Sungkyunkwan Univ, Suwon, South Korea
- + [105] Vilnius Univ, Vilnius, Lithuania
- + [106] Univ Malaya, Natl Ctr Particle Phys, Kuala Lumpur, Malaysia
- + [107] IPN, Ctr Invest & Estudios Avanzados, Mexico City, DF, Mexico
- [108] Univ Iberoamer, Mexico City, DF, Mexico
- + [109] Benemerita Univ Autonoma Puebla, Puebla, Mexico
- + [110] Univ Autonoma San Luis Potosi, San Luis Potosi, Mexico
- + [111] Univ Auckland, Auckland, New Zealand
- + [112] Univ Canterbury, Christchurch, New Zealand
- + [113] Quaid I Azam Univ, Natl Ctr Phys, Islamabad, Pakistan
- + [114] Natl Ctr Nucl Res, Otwock, Poland
- + [115] Univ Warsaw, Inst Expt Phys, Fac Phys, Warsaw, Poland
- + [116] Lab Instrumentacao & Fis Expt Particulas, Lisbon, Portugal
- + [117] Joint Inst Nucl Res, Dubna, Russia
- + [118] Petersburg Nucl Phys Inst, St Petersburg, Russia
- + [119] Inst Nucl Res, Moscow, Russia
- + [120] Inst Theoret & Expt Phys, Moscow, Russia
- + [121] Moscow Inst Phys & Technol, Moscow, Russia
- + [122] Natl Res Nucl Univ, Moscow Engr Phys Inst MEPH1, Moscow, Russia
- + [123] PN Lebedev Phys Inst, Moscow, Russia
- + [124] Lomonosov Moscow State Univ, Skobeltsyn Inst Nucl Phys, Moscow, Russia
- + [125] Novosibirsk State Univ, Novosibirsk, Russia
- + [126] Natl Res Ctr, Inst High Energy Phys, Kurchatov Inst, Protvino, Russia
- + [127] Natl Res Tomsk Polytech Univ, Tomsk, Russia
- + [128] Univ Belgrade, Fac Phys, Belgrade, Serbia
- + [129] Univ Belgrade, Vinca Inst Nucl Sci, Belgrade, Serbia
- [130] CIEMAT, Madrid, Spain
- + [131] Univ Autonoma Madrid, Madrid, Spain
- + [132] Univ Oviedo, Oviedo, Spain
- + [133] Univ Cantabria, CSIC, Inst Fis Cantabria IFCA, Santander, Spain
- + [134] European Org Nucl Res, CERN, Geneva, Switzerland

- + [135] Paul Scherrer Inst, Villigen, Switzerland
- + [136] Swiss Fed Inst Technol, Inst Particle Phys & Astrophys IPA, Zurich, Switzerland
- + [137] Univ Zurich, Zurich, Switzerland
- + [138] Natl Cent Univ, Chungli, Taiwan
- + [139] Natl Taiwan Univ, Taipei, Taiwan
- + [140] Chulalongkorn Univ, Fac Sci, Dept Phys, Bangkok, Thailand
- + [141] Cukurova Univ, Phys Dept, Sci & Art Fac, Adana, Turkey
- + [142] Middle East Tech Univ, Phys Dept, Ankara, Turkey
- + [143] Bogazici Univ, Istanbul, Turkey
- + [144] Istanbul Tech Univ, Istanbul, Turkey
- + [145] Natl Acad Sci Ukraine, Inst Scintillat Mat, Kharkov, Ukraine
- + [146] Kharkov Inst Phys & Technol, Natl Sci Ctr, Kharkov, Ukraine
- + [147] Univ Bristol, Bristol, Avon, England
- + [148] Rutherford Appleton Lab, Didcot, Oxon, England
- + [149] Imperial Coll, London, England
- + [150] Brunel Univ, Uxbridge, Middx, England
- + [151] Baylor Univ, Waco, TX 76798 USA
- + [152] Catholic Univ Amer, Washington, DC 20064 USA
- + [153] Univ Alabama, Tuscaloosa, AL USA
- + [154] Boston Univ, Boston, MA 02215 USA
- + [155] Brown Univ, Providence, RI 02912 USA
- + [156] Univ Calif Davis, Davis, CA 95616 USA
- + [157] Univ Calif Los Angeles, Los Angeles, CA USA
- + [158] Univ Calif Riverside, Riverside, CA 92521 USA
- + [159] Univ Calif San Diego, La Jolla, CA 92093 USA
- + [160] Univ Calif Santa Barbara, Dept Phys, Santa Barbara, CA 93106 USA
- + [161] CALTECH, Pasadena, CA 91125 USA
- + [162] Carnegie Mellon Univ, Pittsburgh, PA 15213 USA
- + [163] Univ Colorado, Boulder, CO 80309 USA
- + [164] Cornell Univ, Ithaca, NY USA
- + [165] Fermilab Natl Accelerator Lab, POB 500, Batavia, IL 60510 USA
- + [166] Univ Florida, Gainesville, FL USA
- + [167] Florida Int Univ, Miami, FL 33199 USA
- + [168] Florida State Univ, Tallahassee, FL 32306 USA
- + [169] Florida Inst Technol, Melbourne, FL 32901 USA
- + [170] Univ Illinois, Chicago, IL USA
- + [171] Univ Iowa, Iowa City, IA USA
- + [172] Johns Hopkins Univ, Baltimore, MD USA
- + [173] Univ Kansas, Lawrence, KS 66045 USA
- + [174] Kansas State Univ, Manhattan, KS 66506 USA
- + [175] Lawrence Livermore Natl Lab, Livermore, CA USA
- + [176] Univ Maryland, College Pk, MD 20742 USA
- + [177] MIT, 77 Massachusetts Ave, Cambridge, MA 02139 USA
- + [178] Univ Minnesota, Minneapolis, MN USA
- + [179] Univ Mississippi, Oxford, MS USA
- + [180] Univ Nebraska, Lincoln, NE USA
- + [181] SUNY Buffalo, Buffalo, NY USA
- + [182] Northeastern Univ, Boston, MA 02115 USA
- + [183] Northwestern Univ, Evanston, IL USA
- + [184] Univ Notre Dame, Notre Dame, IN 46556 USA
- + [185] Ohio State Univ, Columbus, OH 43210 USA
- + [186] Princeton Univ, Princeton, NJ 08544 USA
- + [187] Univ Puerto Rico, Mayaguez, PR USA
- + [188] Purdue Univ, W Lafayette, IN 47907 USA
- + [189] Purdue Univ Northwest, Hammond, LA USA
- + [190] Rice Univ, Houston, TX USA
- + [191] Univ Rochester, Rochester, NY USA

- + [192] Rockefeller Univ, 1230 York Ave, New York, NY 10021 USA
- + [193] Rutgers State Univ, Piscataway, NJ USA
- + [194] Univ Tennessee, Knoxville, TN USA
- + [195] Texas A&M Univ, College Stn, TX USA
- + [196] Texas Tech Univ, Lubbock, TX 79409 USA
- + [197] Vanderbilt Univ, 221 Kirkland Hall, Nashville, TN 37235 USA
- + [198] Univ Virginia, Charlottesville, VA USA
- + [199] Wayne State Univ, Detroit, MI USA
- + [200] Univ Wisconsin, Madison, WI USA
- + [201] Vienna Univ Technol, Vienna, Austria
- + [202] Univ Estadual Campinas, Campinas, SP, Brazil
- + [203] Univ Fed Rio Grande do Sul, Porto Alegre, RS, Brazil
- + [204] Univ Fed Pelotas, Pelotas, Brazil
- + [205] Cairo Univ, Cairo, Egypt
- + [206] Helwan Univ, Cairo, Egypt
- + [207] Zewail City Sci & Technol, Zewail, Egypt
- + [208] British Univ Egypt, Cairo, Egypt
- + [209] Ain Shams Univ, Cairo, Egypt
- + [210] King Abdulaziz Univ, Dept Phys, Jeddah, Saudi Arabia
- + [211] Univ Haute Alsace, Mulhouse, France
- + [212] Brandenburg Tech Univ Cottbus, Cottbus, Germany
- + [213] Indian Inst Technol Bhubaneswar, Bhubaneswar, India
- + [214] Inst Phys, Bhubaneswar, India
- + [215] Shoolini Univ, Solan, India
- + [216] Univ Visva Bharati, Santini Ketan, W Bengal, India
- [217] Univ Ruhuna, Matara, Sri Lanka
- + [218] Isfahan Univ Technol, Esfahan, Iran
- + [219] Yazd Univ, Yazd, Iran
- + [220] Islamic Azad Univ, Plasma Phys Res Ctr, Sci & Res Branch, Tehran, Iran
- + [221] Univ Siena, Siena, Italy
- + [222] Int Islamic Univ Malaysia, Kuala Lumpur, Malaysia
- + [223] MOSTI, Malaysian Nucl Agcy, Kajang, Malaysia
- [224] Consejo Nacl Invest Cient & Tecn, Mexico City, DF, Mexico
- + [225] Warsaw Univ Technol, Inst Elect Syst, Warsaw, Poland
- + [226] Natl Res Nucl Univ, Moscow Engr Phys Inst MEPhI, Moscow, Russia
- + [227] St Petersburg State Polytech Univ, St Petersburg, Russia
- + [228] Budker Inst Nucl Phys, Novosibirsk, Russia
- + [229] Scuola Normale Super Pisa, Pisa, Italy
- + [230] Riga Tech Univ, Riga, Latvia
- [231] Stefan Meyer Inst Subat Phys SMI, Vienna, Austria
- + [232] Adiyaman Univ, Adiyaman, Turkey
- + [233] Istanbul Aydin Univ, Istanbul, Turkey
- + [234] Mersin Univ, Mersin, Turkey
- + [235] Piri Reis Univ, Istanbul, Turkey
- + [236] Izmir Inst Technol, Izmir, Turkey
- + [237] Necmettin Erbakan Univ, Konya, Turkey
- + [238] Marmara Univ, Istanbul, Turkey
- + [239] Kafkas Univ, Kars, Turkey
- + [240] Istanbul Bilgi Univ, Istanbul, Turkey
- + [241] Univ Southampton, Sch Phys & Astron, Southampton, Hants, England
- + [242] Monash Univ, Fac Sci, Clayton, Vic, Australia
- + [243] Inst Astrofis Canarias, San Cristobal la Laguna, Spain
- [244] Bethel Univ, St Paul, MN USA
- + [245] Utah Valley Univ, Orem, UT USA
- + [246] Beykent Univ, Istanbul, Turkey
- + [247] Bingol Univ, Bingol, Turkey

- + [248] Erzincan Univ, Erzincan, Turkey
- + [249] Sinop Univ, Sinop, Turkey
- + [250] Mimar Sinan Univ, Istanbul, Turkey
- + [251] Texas A&M Univ Qatar, Doha, Qatar

Funding

Funding Agency	Show details	Grant Number
BMBWF(Austria)		
Austrian Science Fund (FWF)		
Fonds de la Recherche Scientifique - FNRS		
FWO		
National Council for Scientific and Technological Development (CNPq)		
CAPES		
Carlos Chagas Filho Foundation for Research Support of the State of Rio de Janeiro (FAPERJ)		
Fundacao de Amparo a Pesquisa do Estado de Sao Paulo (FAPESP)		
Foundation for Research Support of the State of Rio Grande do Sul (FAPERGS)		
MES (Bulgaria)		
CERN		
Chinese Academy of Sciences		
Ministry of Science and Technology, China		
National Natural Science Foundation of China		
Departamento Administrativo de Ciencia, Tecnologia e Innovacion Colciencias		
MSES (Croatia)		
CSF (Croatia)		
RPF (Cyprus)		
SENESCYT (Ecuador)		
MoER (Estonia)		
Estonian Research Council		
European Union (EU)		
Academy of Finland		
Spanish Government		
HIP (Finland)		
French Atomic Energy Commission		
Centre National de la Recherche Scientifique (CNRS)		
Federal Ministry of Education & Research (BMBF)		
German Research Foundation (DFG)		
HGF (Germany)		
Greek Ministry of Development-GSRT		
NKFI (Hungary)		
Department of Atomic Energy (DAE)		
Department of Science & Technology (India)		
IPM (Iran)		
Science Foundation Ireland		
Istituto Nazionale di Fisica Nucleare		
MSIP (Republic of Korea)		
NRF (Republic of Korea)		
MES (Latvia)		
LAS (Lithuania)		
MOE (Malaysia)		
UM (Malaysia)		
BUAP (Mexico)		
CINVESTAV (Mexico)		
Consejo Nacional de Ciencia y Tecnologia (CONACyT)		
LNS (Mexico)		
SEP (Mexico)		

UASLP-FAI (Mexico)	
MOS (Montenegro)	
MBIE (New Zealand)	
PAEC (Pakistan)	
MSHE (Poland)	
NSC (Poland)	
Portuguese Foundation for Science and Technology	
JINR (Dubna)	
MON (Russia)	
ROSATOM (Russia)	
Russian Academy of Sciences	
Russian Foundation for Basic Research (RFBR)	
NRC KI (Russia)	
MESTD (Serbia)	
SEIDI (Spain)	
CPAN (Spain)	
PCTI (Spain)	
European Union (EU)	
MoSTR(Sri Lanka)	
Swiss Funding Agencies (Switzerland)	
MST (Taipei)	
ThEPCenter (Thailand)	
IPST (Thailand)	
STAR (Thailand)	
NSTDA (Thailand)	
Turkiye Bilimsel ve Teknolojik Arastirma Kurumu (TUBITAK)	
Ministry of Energy & Natural Resources - Turkey	
NASU (Ukraine)	
State Fund for Fundamental Research (SFFR)	
Science & Technology Facilities Council (STFC)	
United States Department of Energy (DOE)	
National Science Foundation (NSF)	
Indo-French Network in High Energy Physics - Indo-French Center for the Promotion of Advanced Research (CEFIPRA/IFCPAR) (European Union)	
European Union (EU)	
European Union (EU) European Research Council (ERC)	675440
Leventis Foundation	
Alfred P. Sloan Foundation	
Alexander von Humboldt Foundation	
Belgian Federal Science Policy Office	
Fonds de la Recherche Scientifique - FNRS	
Institute for the Promotion of Innovation by Science and Technology in Flanders (IWT)	
Fonds de la Recherche Scientifique - FNRS	30820817
FWO	30820817
Ministry of Education, Youth & Sports - Czech Republic	
Lendulet ("Momentum") Program (Hungary)	
Janos Bolyai Research Scholarship of the Hungarian Academy of Sciences, the New National Excellence Program UNKP, the NKFIA (Hungary)	123842 123959 124845 124850 125105
Council of Scientific & Industrial Research (CSIR) - India	
HOMING PLUS program of the Foundation for Polish Science (Poland)	Harmonia 2014/14/M/ST2/00428 Opus 2014/13/B/ST2/02543 2014/15/B/ST2/03998 2015/19/B/ST2/02861

	Sonata-bis 2012/07/E/ST2/01406
European Union, Regional Development Fund, the Mobility Plus program of the Ministry of Science and Higher Education, the National Science Center (Poland)	Harmonia 2014/14/M/ST2/00428 Opus 2014/13/B/ST2/02543 2014/15/B/ST2/03998 2015/19/B/ST2/02861 Sonata-bis 2012/07/E/ST2/01406
National Priorities Research Program by Qatar National Research Fund	
Programa Estatal de Fomento de la Investigacion Cientifica y Tecnica de Excelencia Maria de Maeztu	MDM-2015-0509
Programa Severo Ochoa del Principado de Asturias	
Aristeia programs - EU-ESF	
Greek Ministry of Development-GSRT	
The Welch Foundation	C-1845
Weston Havens Foundation (USA)	
Rachadapisek Sompot Fund for Postdoctoral Fellowship (Thailand)	
Chulalongkorn University	
Chulalongkorn Academic into Its 2nd Century Project Advancement Project (Thailand)	
European Union (EU)	675440
Thalis program - EU-ESF	

[View funding text](#)

Publisher

ELSEVIER, RADARWEG 29, 1043 NX AMSTERDAM, NETHERLANDS

Journal Information

Impact Factor: [Journal Citation Reports](#)

Categories / Classification

Research Areas: Astronomy & Astrophysics; Physics

Web of Science Categories: Astronomy & Astrophysics; Physics, Nuclear; Physics, Particles & Fields

See more data fields

◀ 1 of 1 ▶

Cited References: 77

Showing 30 of 77 [View All in Cited References page](#)

(from Web of Science Core Collection)

- [Search for Scalar Diphoton Resonances in the Mass Range 65-600 GeV with the ATLAS Detector in pp Collision Data at root s=8 TeV](#)** Times Cited: **121**

By: Aad, G.; Abbott, B.; Abdallah, J.; et al.
Group Author(s): ATLAS Collaboration
PHYSICAL REVIEW LETTERS Volume: 113 Issue: 17 Article Number: UNSP 171801 Published: OCT 20 2014
- [Search for the standard model Higgs boson at LEP](#)** Times Cited: **1,316**

By: Abbaneo, D; Abbiendi, G; Barate, R; et al.
Group Author(s): ALEPH Collaboration; DELPHI Collaboration; L3 Collaboration; et al.
PHYSICS LETTERS B Volume: 565 Issue: 1-4 Pages: 61-75 Published: JUL 17 2003
- [GEANT4-a simulation toolkit](#)** Times Cited: **11,886**

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
- [A general framework for implementing NLO calculations in shower Monte Carlo programs: the POWHEG BOX](#)** Times Cited: **1,096**

By: Alioli, Simone; Nason, Paolo; Oleari, Carlo; et al.
JOURNAL OF HIGH ENERGY PHYSICS Issue: 6 Article Number: 043 Published: JUN 2010
- [NLO Higgs boson production via gluon fusion matched with shower in POWHEG](#)** Times Cited: **172**

By: Alioli, Simone; Nason, Paolo; Oleari, Carlo; et al.
JOURNAL OF HIGH ENERGY PHYSICS Issue: 4 Article Number: 002 Published: APR 2009
- [The automated computation of tree-level and next-to-leading order differential cross sections, and their matching to parton shower simulations](#)** Times Cited: **2,564**

7. **the LHC Higgs Combination Group, Procedure for the LHC Higgs boson search combination in Summer 2011** Times Cited: 29
Group Author(s): ATLAS and CMS collaborations
CMS-NOTE-2011-005 , ATL-PHYS-PUB-2011-11 Published: 2011

8. **Parton distributions for the LHC run II** Times Cited: 913
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

9. **GAUGE-MODELS WITH SPONTANEOUSLY BROKEN LOCAL SUPERSYMMETRY** Times Cited: 1,252
By: BARBIERI, R; FERRARA, S; SAVOY, CA
PHYSICS LETTERS B Volume: 119 Issue: 4-6 Pages: 343-347 Published: 1982

10. **Scrutinizing the alignment limit in two-Higgs-doublet models. II. $m(H)=125$ GeV** Times Cited: 55
By: Bernon, Jeremy; Gunion, John F.; Haber, Howard E.; et al.
PHYSICAL REVIEW D Volume: 93 Issue: 3 Article Number: 035027 Published: FEB 29 2016

11. **PDF4LHC recommendations for LHC Run II** Times Cited: 415
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

12. **Search for a lighter Higgs boson in Two Higgs Doublet Models** Times Cited: 14
By: Cacciapaglia, Giacomo; Deandrea, Aldo; Gascon-Shotkin, Suzanne; et al.
JOURNAL OF HIGH ENERGY PHYSICS Issue: 12 Article Number: 068 Published: DEC 15 2016

13. **Diphoton signal of the light Higgs boson in natural NMSSM** Times Cited: 25
By: Cao, Junjie; Guo, Xiaofei; He, Yangle; et al.
PHYSICAL REVIEW D Volume: 95 Issue: 11 Article Number: 116001 Published: JUN 6 2017

14. **An unbiased Hessian representation for Monte Carlo PDFs** Times Cited: 52
By: Carrazza, Stefano; Forte, Stefano; Kassabov, Zahari; et al.
EUROPEAN PHYSICAL JOURNAL C Volume: 75 Issue: 8 Article Number: 369 Published: AUG 12 2015

15. **LHC constraints on two-Higgs doublet models** Times Cited: 85
By: Celis, Alejandro; Ilisie, Victor; Pich, Antonio
JOURNAL OF HIGH ENERGY PHYSICS Issue: 7 Article Number: 053 Published: JUL 2013

16. **Two Higgs doublet models for the LHC Higgs boson data at root $s=7$ and 8 TeV** Times Cited: 32
By: Chang, Sanghyeon; Kang, Sin Kyu; Lee, Jong-Phil; et al.
JOURNAL OF HIGH ENERGY PHYSICS Issue: 9 Article Number: 101 Published: SEP 18 2014

17. **Observation of a new boson with mass near 125 GeV in pp collisions at root $s=7$ and 8 TeV** Times Cited: 403
By: Chatrchyan, S.; Khachatryan, V.; Sirunyan, A. M.; et al.
Group Author(s): CMS Collaboration
JOURNAL OF HIGH ENERGY PHYSICS Issue: 6 Article Number: 081 Published: JUN 2013

18. **Study of the underlying event at forward rapidity in pp collisions at root $s=0.9, 2.76,$ and 7 TeV** Times Cited: 78
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

19. **Measurement of the inclusive W and Z production cross sections in pp collisions at root $s = 7$ TeV with the CMS experiment** Times Cited: 195
By: Chatrchyan, S.; Khachatryan, V.; Sirunyan, A. M.; et al.
Group Author(s): CMS Collaboration
JOURNAL OF HIGH ENERGY PHYSICS Issue: 10 Article Number: 132 Published: OCT 2011

20. **Energy calibration and resolution of the CMS electromagnetic calorimeter in pp collisions at root $s=7$ TeV** Times Cited: 107
By: Chatrchyan, S.; Khachatryan, V.; Sirunyan, A. M.; et al.
Group Author(s): CMS Collaboration
JOURNAL OF INSTRUMENTATION Volume: 8 Article Number: P09009 Published: SEP 2013

21. **The CMS experiment at the CERN LHC** Times Cited: 2,854
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

22. **Observation of a new boson at a mass of 125 GeV with the CMS experiment at the LHC** Times Cited: 5,615
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
23. **Search for large extra dimensions in dimuon and dielectron events in pp collisions at root s=7 TeV** Times Cited: 915
By: Chatrchyan, S.; Khachatryan, V.; Sirunyan, A. M.; et al.
Group Author(s): CMS Collaboration
PHYSICS LETTERS B Volume: 711 Issue: 1 Pages: 15-34 Published: MAY 1 2012
24. Title: [not available] Times Cited: 59
Group Author(s): CMS Collaboration
CMS luminosity based on pixel cluster counting-Summer 2013 update, CMS Physics Analysis Summary CMS-PAS-LUM-13-001 Published: 2013
25. **CMS Luminosity Measurements for the 2016 Data Taking Period** Times Cited: 105
Group Author(s): CMS collaboration
CMS-PAS-LUM-17-001 Published: 2017
INSPIRE
26. **Constraining type II 2HDM in light of LHC Higgs searches** Times Cited: 62
By: Coleppa, Baradhwaj; Kling, Felix; Su, Shufang
JOURNAL OF HIGH ENERGY PHYSICS Issue: 1 Article Number: 161 Published: JAN 29 2014
27. **Asymptotic formulae for likelihood-based tests of new physics** Times Cited: 1,108
By: Cowan, Glen; Cranmer, Kyle; Gross, Eilam; et al.
EUROPEAN PHYSICAL JOURNAL C Volume: 71 Issue: 2 Article Number: 1554 Published: FEB 2011
28. **Handling uncertainties in background shapes: the discrete profiling method** Times Cited: 21
By: Dauncey, P. D.; Kenzie, M.; Wardle, N.; et al.
JOURNAL OF INSTRUMENTATION Volume: 10 Article Number: P04015 Published: APR 2015
29. **QUANTUM EFFECTS AND SU(2)_{XU(1)} BREAKING IN SUPERGRAVITY GAUGE-THEORIES** Times Cited: 493
By: DERENDINGER, JP; SAVOY, CA
NUCLEAR PHYSICS B Volume: 237 Issue: 2 Pages: 307-328 Published: 1984
30. **A SIMPLE SOLUTION TO THE STRONG CP PROBLEM WITH A HARMLESS AXION** Times Cited: 1,553
By: DINE, M; FISCHLER, W; SREDNICKI, M
PHYSICS LETTERS B Volume: 104 Issue: 3 Pages: 199-202 Published: 1981

Showing 30 of 77 [View All in Cited References page](#)

