

Free Full Text from Publisher

Look Up Full Text

Find PDF

Full Text Options

Export...

Add to Marked List

◀ 1 of 1 ▶

## Determination of the strong coupling constant $\alpha(S)(m(Z))$ from measurements of inclusive $W$ - $+$ / $-$ and $Z$ boson production cross sections in proton-proton collisions at root $s=7$ and 8 TeV

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

Group Author(s): CMS Collaboration

[View Web of Science ResearcherID and ORCID](#)

JOURNAL OF HIGH ENERGY PHYSICS

Issue: 6

Article Number: 18

DOI: 10.1007/JHEP06(2020)018

Published: JUN 1 2020

Document Type: Article

[View Journal Impact](#)

### Abstract

Twelve measurements of inclusive cross sections of  $W$ - $+$ / $-$  and  $Z$  boson production, performed in proton-proton collisions at centre-of-mass energies of 7 and 8 TeV, are compared with perturbative quantum chromodynamics calculations at next-to-next-to-leading order (NNLO) accuracy obtained with the CT14, HERAPDF2.0, MMHT14, and NNPDF3.0 parton distribution functions (PDFs). Data and theory agree well for all PDF sets, taking into account the experimental and theoretical uncertainties. A novel procedure is employed to extract the strong coupling constant at the  $Z$  pole mass from a detailed comparison of all the experimental fiducial cross sections to the corresponding NNLO theoretical predictions, yielding  $\alpha_S(m(Z)) = 0.1163(-0.0031)(+0.0024)$  (CT14),  $0.1072(-0.0040)(+0.0043)$  (HERAPDF2.0),  $0.1186 \pm 0.0025$  (MMHT14), and  $0.1147 \pm 0.0023$  (NNPDF3.0). Using the results obtained with the CT14 and MMHT14 PDFs, which yield the most robust and stable  $\alpha_S(m(Z))$  extractions, a value  $\alpha_S(m(Z)) = 0.1175(-0.0028)(+0.0025)$  is determined.

### Keywords

Author Keywords: Hadron-Hadron scattering (experiments); Particle and resonance production

### Author Information

#### Reprint Address:

Yerevan Physics Institute Yerevan Phys Inst, Yerevan, Armenia.

Corresponding Address: Sirunyan, AM (corresponding 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 ] Univ Ghent, Ghent, Belgium
- + [ 8 ] Catholic Univ Louvain, Louvain, Belgium
- + [ 9 ] Ctr Brasileiro Pesquisas Fis, Rio De Janeiro, Brazil
- + [ 10 ] Univ Estado Rio de Janeiro, Rio De Janeiro, Brazil
- + [ 11 ] Univ Estadual Paulista, Sao Paulo, Brazil
- + [ 12 ] Univ Fed ABC, Sao Paulo, Brazil

### Citation Network

In Web of Science Core Collection

0

Times Cited

[Create Citation Alert](#)

42

Cited References

[View Related Records](#)

### **i** New! You may also like ... BETA

Isolation and Characterization of Chalcone Isomerase (CHI) Gene from *Boesenbergia rotunda*.

SOUTH AFRICAN JOURNAL OF BOTANY (2020)

Search for an excited lepton that decays via a contact interaction to a lepton and two jets in proton-proton collisions at root  $s=13$  TeV.

JOURNAL OF HIGH ENERGY PHYSICS (2020)

Constraints on the  $\chi_1(c1)$  versus  $\chi_1(c2)$  Polarizations in Proton-Proton Collisions at root  $s=8$  TeV.

PHYSICAL REVIEW LETTERS (2020)

Search for heavy Higgs bosons decaying to a top quark pair in proton-proton collisions at root  $s=13$  TeV.

JOURNAL OF HIGH ENERGY PHYSICS (2020)

Evolutionary constraints on flicker fusion frequency in Lepidoptera.

JOURNAL OF COMPARATIVE PHYSIOLOGY A-NEUROETHOLOGY SENSORY NEURAL AND BEHAVIORAL PHYSIOLOGY (2020)

[View all suggestions](#)

### Use in Web of Science

Web of Science Usage Count

7

Last 180 Days

7

Since 2013

[Learn more](#)

This record is from:

Web of Science Core Collection  
- Science Citation Index Expanded

[Suggest a correction](#)

- + [ 13 ] Bulgarian Acad Sci, Inst Nucl Res & Nucl Energy, Sofia, Bulgaria
- + [ 14 ] Univ Sofia, Sofia, Bulgaria
- + [ 15 ] Beihang Univ, Beijing, Peoples R China
- + [ 16 ] Inst High Energy Phys, Beijing, Peoples R China
- + [ 17 ] Peking Univ, State Key Lab Nucl Phys Technol, Beijing, Peoples R China
- + [ 18 ] Tsinghua Univ, Beijing, Peoples R China
- + [ 19 ] Univ Los Andes, Bogota, Colombia
- + [ 20 ] Univ Antioquia, Medellin, Colombia
- + [ 21 ] Univ Split, Fac Elect Engr Mech Engr & Naval Architecture, Split, Croatia
- + [ 22 ] Univ Split, Fac Sci, Split, Croatia
- + [ 23 ] Inst Rudjer Boskovic, Zagreb, Croatia
- + [ 24 ] Univ Cyprus, Nicosia, Cyprus
- + [ 25 ] Charles Univ Prague, Prague, Czech Republic
- + [ 26 ] Escuela Politec Nacl, Quito, Ecuador
- [ 27 ] Univ San Francisco Quito, Quito, Ecuador
- + [ 28 ] Egyptian Network High Energy Phys, Acad Sci Res & Technol Arab Republ Egypt, Cairo, Egypt
- + [ 29 ] NICPB, Tallinn, Estonia
- + [ 30 ] Univ Helsinki, Dept Phys, Helsinki, Finland
- + [ 31 ] Helsinki Inst Phys, Helsinki, Finland
- + [ 32 ] Lappeenranta Univ Technol, Lappeenranta, Finland
- + [ 33 ] Univ Paris Saclay, CEA, IRFU, Gif Sur Yvette, France
- + [ 34 ] Univ Paris Saclay, CNRS, Ecole Polytech, Lab Leprince Ringuet,IN2P3, Palaiseau, France
- + [ 35 ] Univ Strasbourg, CNRS, UMR 7178, IPHC, Strasbourg, France
- + [ 36 ] Ctr Calcul Inst Natl Phys Nucl & Phys Particules, CNRS, IN2P3, Villeurbanne, France
- + [ 37 ] Univ Lyon, Univ Claude Bernard Lyon 1, CNRS, Inst Phys Nucl Lyon,IN2P3, Villeurbanne, France
- + [ 38 ] Georgian Tech Univ, Tbilisi, Georgia
- + [ 39 ] Tbilisi State Univ, Tbilisi, Georgia
- + [ 40 ] Rhein Westfal TH Aachen, Phys Inst 1, Aachen, Germany
- + [ 41 ] Rhein Westfal TH Aachen, Phys Inst A 3, Aachen, Germany
- + [ 42 ] Rhein Westfal TH Aachen, Phys Inst B 3, Aachen, Germany
- [ 43 ] Deutch Elektronen Synchrotron, Hamburg, Germany
- + [ 44 ] Univ Hamburg, Hamburg, Germany
- + [ 45 ] Karlsruher Inst Technol, Karlsruhe, Germany
- + [ 46 ] INPP, NCSR Demokritos, Aghia Paraskevi, Greece
- + [ 47 ] Natl & Kapodistrian Univ Athens, Athens, Greece
- + [ 48 ] Natl Tech Univ Athens, Athens, Greece
- + [ 49 ] Univ Ioannina, Ioannina, Greece
- + [ 50 ] Eotvos Lorand Univ, MTA ELTE Lendulet CMS Particle & Nucl Phys Grp, Budapest, Hungary
- + [ 51 ] Wigner Res Ctr Phys, Budapest, Hungary
- + [ 52 ] Inst Nucl Res ATOMKI, Debrecen, Hungary
- + [ 53 ] Univ Debrecen, Inst Phys, Debrecen, Hungary
- + [ 54 ] Indian Inst Sci IISc, Bangalore, Karnataka, India
- + [ 55 ] Natl Inst Sci Educ Res, HBNI, Bhubaneswar, Orissa, India
- + [ 56 ] Panjab Univ, Chandigarh, India
- + [ 57 ] Univ Delhi, Delhi, India
- + [ 58 ] Saha Inst Nucl Phys, HBNI, Kolkata, India
- + [ 59 ] Indian Inst Technol Madras, Madras, Tamil Nadu, India
- + [ 60 ] Bhabha Atom Res Ctr, Mumbai, Maharashtra, India
- + [ 61 ] Tata Inst Fundamental Res A, Mumbai, Maharashtra, India

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

- + [ 62 ] Tata Inst Fundamental Res B, Mumbai, Maharashtra, India
- + [ 63 ] IISER, Pune, Maharashtra, India
- [ 64 ] Inst Res Fundamental Sci IPM, Tehran, Iran
- + [ 65 ] Univ Coll Dublin, Dublin, Ireland
- + [ 66 ] INFN, Sez Bari, Bari, Italy
- + [ 67 ] Univ Bari, Bari, Italy
- + [ 68 ] Politecn Bari, Bari, Italy
- + [ 69 ] INFN, Sez Bologna, Bologna, Italy
- + [ 70 ] Univ Bologna, Bologna, Italy
- + [ 71 ] INFN, Sez Catania, Catania, Italy
- + [ 72 ] Univ Catania, Catania, Italy
- + [ 73 ] INFN, Sez Firenze, Florence, Italy
- + [ 74 ] Univ Firenze, Florence, Italy
- + [ 75 ] INFN, Lab Nazl Frascati, Frascati, Italy
- + [ 76 ] INFN, Sez Genova, Genoa, Italy
- + [ 77 ] Univ Genoa, Genoa, Italy
- + [ 78 ] INFN, Sez Milano Bicocca, Milan, Italy
- + [ 79 ] Univ Milano Bicocca, Milan, Italy
- + [ 80 ] INFN, Sez Napoli, Naples, Italy
- + [ 81 ] Univ Napoli Federico II, Rome, Italy
- + [ 82 ] Univ Basilicata, Potenza, Italy
- + [ 83 ] Univ G Marconi, Rome, Italy
- [ 84 ] INFN, Sez Padova, Trento, NJ USA
- + [ 85 ] Univ Padua, Padua, Italy
- + [ 86 ] Univ Trento, Trento, Italy
- + [ 87 ] INFN, Sez Pavia, Pavia, Italy
- + [ 88 ] Univ Pavia, Pavia, Italy
- + [ 89 ] INFN, Sez Perugia, Perugia, Italy
- + [ 90 ] Univ Perugia, Perugia, Italy
- + [ 91 ] INFN, Sez Pisa, Pisa, Italy
- + [ 92 ] Univ Pisa, Pisa, Italy
- + [ 93 ] Scuola Normale Super Pisa, Pisa, Italy
- + [ 94 ] INFN, Sez Roma, Rome, Italy
- + [ 95 ] Sapienza Univ Roma, Rome, Italy
- + [ 96 ] INFN, Sez Torino, Novara, Italy
- + [ 97 ] Univ Torino, Novara, Italy
- + [ 98 ] Univ Piemonte Orientale, Novara, Italy
- + [ 99 ] INFN, Sez Trieste, Trieste, Italy
- + [ 100 ] Univ Trieste, Trieste, Italy
- + [ 101 ] Kyungpook Natl Univ, Daegu, South Korea
- + [ 102 ] Chonnam Natl Univ, Inst Univ Elementary Particles, Kwangju, South Korea
- + [ 103 ] Hanyang Univ, Seoul, South Korea
- + [ 104 ] Korea Univ, Seoul, South Korea
- + [ 105 ] Sejong Univ, Seoul, South Korea
- + [ 106 ] Seoul Natl Univ, Seoul, South Korea
- + [ 107 ] Univ Seoul, Seoul, South Korea
- + [ 108 ] Sungkyunkwan Univ, Suwon, South Korea
- + [ 109 ] Vilnius Univ, Vilnius, Lithuania
- + [ 110 ] Univ Malaya, Natl Ctr Particle Phys, Kuala Lumpur, Malaysia

- + [ 111 ] Univ Sonora UNISON, Hermosillo, Sonora, Mexico
- + [ 112 ] Ctr Invest & Estudios Avanzados IPN, Mexico City, DF, Mexico
- [ 113 ] Univ Iberoamer, Mexico City, DF, Mexico
- + [ 114 ] Benemerita Univ Autonoma Puebla, Puebla, Mexico
- + [ 115 ] Univ Autonoma San Luis Potosi, San Luis Potosi, Mexico
- + [ 116 ] Univ Auckland, Auckland, New Zealand
- + [ 117 ] Univ Canterbury, Christchurch, New Zealand
- + [ 118 ] Quaid I Azam Univ, Natl Ctr Phys, Islamabad, Pakistan
- + [ 119 ] Natl Ctr Nucl Res, Otwock, Poland
- + [ 120 ] Univ Warsaw, Inst Expt Phys, Fac Phys, Warsaw, Poland
- + [ 121 ] Lab Instrumentacao & Fis Expt Particulas, Lisbon, Portugal
- + [ 122 ] Joint Inst Nucl Res, Dubna, Russia
- + [ 123 ] Petersburg Nucl Phys Inst Gatchina, St Petersburg, Russia
- + [ 124 ] Inst Nucl Res, Moscow, Russia
- + [ 125 ] Inst Theoret Expt Phys, Moscow, Russia
- + [ 126 ] Moscow Inst Phys Technol, Moscow, Russia
- + [ 127 ] Natl Res Nucl Univ, Moscow Engr Phys Inst MEPhI, Moscow, Russia
- + [ 128 ] PN Lebedev Phys Inst, Moscow, Russia
- + [ 129 ] Lomonosov Moscow State Univ, Skobeltsyn Inst Nucl Phys, Moscow, Russia
- + [ 130 ] NSU, Novosibirsk, Russia
- + [ 131 ] State Res Ctr Russian Federat, NRC Kurchatov Inst, Inst High Energy Phys, Protvino, Russia
- + [ 132 ] Natl Res Tomsk Polytech Univ, Tomsk, Russia
- + [ 133 ] Univ Belgrade, Fac Phys, Belgrade, Serbia
- + [ 134 ] Vinca Inst Nucl Sci, Belgrade, Serbia
- [ 135 ] Ctr Invest Energet Medioambient Tecnol CIEM, Madrid, Spain
- + [ 136 ] Univ Autonoma Madrid, Madrid, Spain
- + [ 137 ] Univ Oviedo, Oviedo, Spain
- + [ 138 ] Univ Cantabria, Inst Fis Cantabria IFCA, CSIC, Santander, Spain
- + [ 139 ] CERN, European Org Nucl Res, Geneva, Switzerland
- + [ 140 ] Paul Scherrer Inst, Villigen, Switzerland
- [ 141 ] ETH Zurich Inst Particle Phys & Astrophys IPA, Zurich, Switzerland
- + [ 142 ] Univ Zurich, Zurich, Switzerland
- + [ 143 ] Natl Cent Univ, Chungli, Taiwan
- + [ 144 ] NTU, Taipei, Taiwan
- + [ 145 ] Chulalongkorn Univ, Dept Phys, Fac Sci, Bangkok, Thailand
- + [ 146 ] Cukurova Univ, Dept Phys, Sci & Art Fac, Adana, Turkey
- + [ 147 ] Middle East Tech Univ, Dept Phys, Ankara, Turkey
- + [ 148 ] Bogazici Univ, Istanbul, Turkey
- + [ 149 ] Istanbul Tech Univ, Istanbul, Turkey
- + [ 150 ] Natl Acad Sci Ukraine, Inst Scintillat Mat, Kharkov, Ukraine
- + [ 151 ] Kharkov Inst Phys Technol, Natl Sci Ctr, Kharkov, Ukraine
- + [ 152 ] Univ Bristol, Bristol, Avon, England
- [ 153 ] Ruthetford Appleton Lab, Didcot, Oxon, England
- + [ 154 ] Imperial Coll, London, England
- + [ 155 ] Brunel Univ, Uxbridge, Middx, England
- + [ 156 ] Baylor Univ, Waco, TX 76798 USA
- + [ 157 ] Catholic Univ Amer, Washington, DC 20064 USA
- + [ 158 ] Univ Alabama, Tuscaloosa, AL USA
- + [ 159 ] Boston Univ, Boston, MA 02215 USA

- + [ 160 ] Brown Univ, Providence, RI 02912 USA
- + [ 161 ] Univ Calif Davis, Davis, CA 95616 USA
- + [ 162 ] Univ Calif Los Angeles, Los Angeles, CA USA
- + [ 163 ] Univ Calif Riverside, Riverside, CA 92521 USA
- + [ 164 ] Univ Calif San Diego, La Jolla, CA 92093 USA
- + [ 165 ] Univ Calif Santa Barbara, Dept Phys, Santa Barbara, CA 93106 USA
- + [ 166 ] CALTECH, Pasadena, CA 91125 USA
- + [ 167 ] Carnegie Mellon Univ, Pittsburgh, PA 15213 USA
- + [ 168 ] Univ Colorado Boulder, Boulder, CO 80309 USA
- + [ 169 ] Cornell Univ, Ithaca, NY USA
- + [ 170 ] Fermilab Natl Accelerator Lab, Batavia, IL 60510 USA
- + [ 171 ] Univ Florida, Gainesville, FL USA
- + [ 172 ] Florida Int Univ, Miami, FL 33199 USA
- + [ 173 ] Florida State Univ, Tallahassee, FL 32306 USA
- + [ 174 ] Florida Inst Technol, Melbourne, FL 32901 USA
- + [ 175 ] Univ Illinois Chicago UIC, Chicago, IL USA
- + [ 176 ] Univ Iowa, Iowa City, IA USA
- + [ 177 ] Johns Hopkins Univ, Baltimore, MD USA
- + [ 178 ] Univ Kansas, Lawrence, KS 66045 USA
- + [ 179 ] Kansas State Univ, Manhattan, KS 66506 USA
- + [ 180 ] Lawrence Livermore Natl Lab, Livermore, CA USA
- + [ 181 ] Univ Maryland, College Pk, MD 20742 USA
- + [ 182 ] MIT, 77 Massachusetts Ave, Cambridge, MA 02139 USA
- + [ 183 ] Univ Minnesota, Minneapolis, MN USA
- + [ 184 ] Univ Mississippi, Oxford, MS USA
- + [ 185 ] Univ Nebraska, Lincoln, NE USA
- + [ 186 ] SUNY Buffalo, New York, NY USA
- + [ 187 ] Northeastern Univ, Boston, MA 02115 USA
- + [ 188 ] Northwestern Univ, Evanston, IL USA
- + [ 189 ] Univ Notre Dame, Notre Dame, IN 46556 USA
- + [ 190 ] Ohio State Univ, Columbus, OH 43210 USA
- + [ 191 ] Princeton Univ, Princeton, NJ 08544 USA
- + [ 192 ] Univ Puerto Rico, Mayaguez, PR USA
- + [ 193 ] Purdue Univ, W Lafayette, IN 47907 USA
- [ 194 ] Purdue Univ Northwest, Hammond, IN USA
- + [ 195 ] Rice Univ, Houston, TX USA
- + [ 196 ] Univ Rochester, Rochester, NY USA
- + [ 197 ] Rutgers State Univ, Piscataway, NJ USA
- + [ 198 ] Univ Tennessee, Knoxville, TN USA
- + [ 199 ] Texas A&M Univ, College Stn, TX USA
- + [ 200 ] Texas Tech Univ, Lubbock, TX 79409 USA
- + [ 201 ] Vanderbilt Univ, 221 Kirkland Hall, Nashville, TN 37235 USA
- + [ 202 ] Univ Virginia, Charlottesville, VA USA
- + [ 203 ] Wayne State Univ, Detroit, MI USA
- + [ 204 ] Univ Wisconsin, Madison, WI USA
- + [ 205 ] Vienna Univ Technol, Vienna, Austria
- + [ 206 ] Univ Paris Saclay, IRFU, CEA, Gif Sur Yvette, France
- + [ 207 ] Univ Estadual Campinas, Campinas, SP, Brazil
- + [ 208 ] Univ Fed Rio Grande do Sul, Porto Alegre, RS, Brazil

- + [ 209 ] Univ Libre Bruxelles, Brussels, Belgium
- + [ 210 ] Univ Chinese Acad Sci, Beijing, Peoples R China
- + [ 211 ] Inst Theoret & Expt Phys, Moscow, Russia
- + [ 212 ] Joint Inst Nucl Res, Dubna, Russia
- + [ 213 ] British Univ Egypt, Cairo, Egypt
- + [ 214 ] Suez Univ, Suez, Egypt
- + [ 215 ] Fayoum Univ, Al Fayyum, Egypt
- + [ 216 ] King Abdulaziz Univ, Dept Phys, Jeddah, Saudi Arabia
- + [ 217 ] Univ Haute Alsace, Mulhouse, France
- + [ 218 ] Lomonosov Moscow State Univ, Skobeltsyn Inst Nucl Phys, Moscow, Russia
- + [ 219 ] CERN, European Org Nucl Res, Geneva, Switzerland
- + [ 220 ] Rhein Westfal TH Aachen, Phys Inst A 3, Aachen, Germany
- + [ 221 ] Univ Hamburg, Hamburg, Germany
- + [ 222 ] Brandenburg Tech Univ Cottbus, Cottbus, Germany
- + [ 223 ] Eotvos Lorand Univ, MTA ELTE Lendulet CMS Particle & Nucl Phys Grp, Budapest, Hungary
- + [ 224 ] Inst Nucl Res ATOMKI, Debrecen, Hungary
- + [ 225 ] Univ Debrecen, Inst Phys, Debrecen, Hungary
- + [ 226 ] IIT Bhubaneswar, Bhubaneswar, India
- + [ 227 ] Inst Phys, Bhubaneswar, Odisha, India
- + [ 228 ] Shoolini Univ, Solan, India
- + [ 229 ] Univ Visva Bharati, Santini Ketan, W Bengal, India
- + [ 230 ] Isfahan Univ Technol, Esfahan, Iran
- + [ 231 ] Islamic Azad Univ, Sci & Res Branch, Plasma Phys Res Ctr, Tehran, Iran
- + [ 232 ] Univ Siena, Siena, Italy
- + [ 233 ] Kyung Hee Univ, Seoul, South Korea
- + [ 234 ] Int Islamic Univ Malaysia, Kuala Lumpur, Malaysia
- + [ 235 ] MOSTI, Malaysian Nucl Agcy, Kajang, Malaysia
- [ 236 ] Consejo Nacl Ciencia & Technol, Mexico City, DF, Mexico
- + [ 237 ] Warsaw Univ Technol, Inst Elect Syst, Warsaw, Poland
- + [ 238 ] Inst Nucl Res, Moscow, Russia
- + [ 239 ] Natl Res Nucl Univ, Moscow Engr Phys Inst MEPhI, Moscow, Russia
- + [ 240 ] St Petersburg State Polytech Univ, St Petersburg, Russia
- + [ 241 ] Univ Florida, Gainesville, FL USA
- + [ 242 ] PN Lebedev Phys Inst, Moscow, Russia
- + [ 243 ] CALTECH, Pasadena, CA 91125 USA
- + [ 244 ] Budker Inst Nucl Phys, Novosibirsk, Russia
- + [ 245 ] Univ Belgrade, Fac Phys, Belgrade, Serbia
- + [ 246 ] Univ Pavia, INFN, Sez Pavia, Pavia, Italy
- + [ 247 ] Univ Belgrade, Fac Phys, Belgrade, Serbia
- + [ 248 ] Vinca Inst Nucl Sci, Belgrade, Serbia
- + [ 249 ] INFN, Scuola Normale & Sez, Pisa, Italy
- + [ 250 ] Natl & Kapodistrian Univ Athens, Athens, Greece
- + [ 251 ] Riga Tech Univ, Riga, Latvia
- + [ 252 ] Univ Zurich, Zurich, Switzerland
- [ 253 ] Stefan Meyer Inst Subat Phys SMI, Vienna, Austria
- + [ 254 ] Adiyaman Univ, Adiyaman, Turkey
- + [ 255 ] Istanbul Aydin Univ, Istanbul, Turkey
- + [ 256 ] Mersin Univ, Mersin, Turkey
- + [ 257 ] Piri Reis Univ, Istanbul, Turkey

- + [ 258 ] Gaziosmanpasa Univ, Tokat, Turkey
- + [ 259 ] Ozyegin Univ, Istanbul, Turkey
- + [ 260 ] Izmir Inst Technol, Izmir, Turkey
- + [ 261 ] Marmara Univ, Istanbul, Turkey
- + [ 262 ] Kafkas Univ, Kars, Turkey
- + [ 263 ] Istanbul Univ, Fac Sci, Istanbul, Turkey
- + [ 264 ] Istanbul Bilgi Univ, Istanbul, Turkey
- + [ 265 ] Hacettepe Univ, Ankara, Turkey
- + [ 266 ] Rutherford Appleton Lab, Didcot, Oxon, England
- + [ 267 ] Univ Southampton, Sch Phys & Astron, Southampton, Hants, England
- + [ 268 ] Monash Univ, Fac Sci, Clayton, Vic, Australia
- [ 269 ] Bethel Univ, St Paul, MN USA
- + [ 270 ] Karamanoglu Mehmetbey Univ, Karaman, Turkey
- + [ 271 ] Utah Valley Univ, Orem, UT USA
- + [ 272 ] Purdue Univ, W Lafayette, IN 47907 USA
- + [ 273 ] Beykent Univ, Istanbul, Turkey
- + [ 274 ] Bingol Univ, Bingol, Turkey
- + [ 275 ] Sinop Univ, Sinop, Turkey
- + [ 276 ] Mimar Sinan Univ, Istanbul, Turkey
- + [ 277 ] Texas A&M Univ Qatar, Doha, Qatar
- + [ 278 ] Kyungpook Natl Univ, Daegu, South Korea
- + [ 279 ] Univ Hyderabad, Hyderabad, India

### Funding

Funding Agency	<a href="#">Show details</a>	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)		
Foundation for Research Support of the State of Rio Grande do Sul (FAPERGS)		
Fundacao de Amparo a Pesquisa do Estado de Sao Paulo (FAPESP)		
MES (Bulgaria)		
CERN (China)		
Chinese Academy of Sciences		
Ministry of Science and Technology, China		
National Natural Science Foundation of China (NSFC)		
Departamento Administrativo de Ciencia, Tecnologia e Innovacion Colciencias		
MSES (Croatia)		
CSF (Croatia)		
RPF (Cyprus)		
SENESCYT (Ecuador)		
MoER (Estonia)		
Estonian Research Council		
PUT (Estonia)		
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	
NKFIA (Hungary)	
Department of Atomic Energy (DAE)	
Department of Science & Technology (India)	
IPM (Iran)	
Science Foundation Ireland	
Istituto Nazionale di Fisica Nucleare (INFN)	
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)	
Science & Technology Facilities Council (STFC)	
United States Department of Energy (DOE)	
National Science Foundation (NSF)	
European Union (EU)	675440 752730 765710
European Union (EU) European Research Council (ERC)	675440 752730 765710
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
Beijing Municipal Science & Technology Commission	Z181100004218003
Ministry of Education, Youth & Sports - Czech Republic	
German Research Foundation (DFG)	EXC 2121 390833306
Lendulet ("Momentum") Programme	
Hungarian Academy of Sciences	
New National Excellence Program UNKP	
NKFI research grants (Hungary)	123842 123959 124845 124850 125105 128713 128786 129058
Council of Scientific & Industrial Research (CSIR) - India	
HOMING PLUS programme of the Foundation for Polish Science	
European Union (EU)	
Mobility Plus programme of the Ministry of Science and Higher Education	
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	
Ministry of Science and Education (Russia)	3.2989.2017
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	
Thalis program - EU-ESF	
Aristeia program - EU-ESF	
Greek Ministry of Development-GSRT	
Rachadapisek Sompot Fund for Postdoctoral Fellowship, Chulalongkorn University (Thailand)	
Chulalongkorn Academic into Its 2nd Century Project Advancement Project (Thailand)	
Nvidia Corporation	
The Welch Foundation	C-1845
Weston Havens Foundation (U.S.A.)	
European Union (EU)	675440 752730 765710

[View funding text](#)

#### Publisher

SPRINGER, ONE NEW YORK PLAZA, SUITE 4600, NEW YORK, NY, UNITED STATES

#### Journal Information

Impact Factor: [Journal Citation Reports](#)

#### Categories / Classification

Research Areas: Physics

Web of Science Categories: Physics, Particles & Fields

#### Document Information

Language: English

Accession Number: WOS:000538247600001

ISSN: 1029-8479

#### Other Information

IDS Number: LV2CM

Cited References in Web of Science Core Collection: **42**

Times Cited in Web of Science Core Collection: 0

[See fewer data fields](#)

◀ 1 of 1 ▶

## Cited References: 40

Showing 30 of 40 [View All in Cited References page](#)

(from Web of Science Core Collection)

- Title: [not available] Times Cited: 1  
 By: Alekhin, S.  
 P HIGH PREC ALPH MEA Published: 2015  
 arXiv:1512.05194 CERN-PH-TH-2015-299  
 Publisher: CERN, Geneva Switzerland
- [Precision studies of observables in pp -> W -> lv\(l\) and pp -> gamma, Z -> l\(+\)\(l-\) processes at the LHC](#) Times Cited: 37  
 By: Alioli, S.; Arbuzov, A. B.; Bardin, D. Yu.; et al.  
 EUROPEAN PHYSICAL JOURNAL C Volume: 77 Issue: 5 Article Number: 280 Published: MAY 3 2017
- [High-precision QCD at hadron colliders: Electroweak gauge boson rapidity distributions at next-to-next-to leading order](#) Times Cited: 461  
 By: Anastasiou, C; Dixon, L; Melnikov, K; et al.  
 PHYSICAL REVIEW D Volume: 69 Issue: 9 Article Number: 094008 Published: MAY 2004
- [LHC Higgs Cross Section Working Group, Handbook of LHC Higgs cross sections: 2. differential distributions](#) Times Cited: 1  
 By: [Anonymous].  
 CERN-2012-002 Published: 2012