Constraining Gluon Distributions in Nuclei Using Dijets in Proton-Proton and Proton-Lead Collisions at root s(NN)=5.02 TeV

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

Group Author(s): CMS Collaboration

View ResearcherID and ORCID

PHYSICAL REVIEW LETTERS
Volume: 121 **Issue:** 6
Article Number: 062002
DOI: 10.1103/PhysRevLett.121.062002
Published: AUG 7 2018
Document Type: Article
View Journal Impact

Abstract

The pseudorapidity distributions of dijets as functions of their average transverse momentum (p(T)(ave)) are measured in proton-lead (pPb) and proton-proton (pp) collisions. The data samples were collected by the CMS experiment at the CERN LHC, at a nucleon-nucleon center-of-mass energy of 5.02 TeV. A significant modification of the pPb spectra with respect to the pp spectra is observed in all p(T)(ave) intervals investigated. The ratios of the pPb and pp distributions are compared to next-to-leading order perturbative quantum chromodynamics calculations with unbound nucleon and nuclear parton distribution functions (PDFs). These results give the first evidence that the gluon PDF at large Bjorken x in lead ions is strongly suppressed with respect to the PDF in unbound nucleons.

Keywords

KeyWords Plus: TRANSVERSE-MOMENTUM; JET PRODUCTION; PB COLLISIONS; PARTICLE-PRODUCTION; DEPENDENCE; PDFS; CENTRALITY; RAPIDITY; SPECTRA

Author Information

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 La Neuve, 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
[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 Split, Fac Elect Engn Mech Engn & Naval Architecture, Split, Croatia
[21] Univ Split, Fac Sci, Split, Croatia
[22] Inst Rudjer Boskov, Zagreb, Croatia
[23] Univ Cyprus, Nicosia, Cyprus
[24] Charles Univ Prague, Prague, Czech Republic
[25] Escuela Politec Nacl, Quito, Ecuador
[26] Univ San Francisco Quito, Quito, Ecuador
[27] Acad Sci Res & Technol Arab Republ Egypt, Egyptian Network High Energy Phys, Cairo, Egypt
[28] NICPB, Tallinn, Estonia
[29] Univ Helsinki, Dept Phys, Helsinki, Finland
[30] Helsinki Inst Phys, Helsinki, Finland
[31] Lappeenranta Univ Technol, Lappeenranta, Finland
[32] Univ Paris Saclay, CEA, IRFU, Gif Sur Yvette, France
[33] Univ Paris Saclay, IN2P3, CNRS, Lab Leprince Ringuet,Ecole Polytech, Palaiseau, France
[34] Univ Strasbourg, CNRS, IPHC, UMR 7178, F-67000 Strasbourg, France
[35] CNRS, IN2P3, Inst Natl Phys Nucl & Phys Particules, Ctr Calcul, Villeurbanne, France
[36] Univ Claude Bernard Lyon 1, Univ Lyon, CNRS, IN2P3,Inst Phys Nucl Lyon, Villeurbanne, France
[37] Georgian Tech Univ, Tbilisi, Rep of Georgia
[38] Tbilisi State Univ, Tbilisi, Rep of Georgia
[39] Rhein Westfal TH Aachen, Phys Inst 1, Aachen, Germany
[40] Rhein Westfal TH Aachen, Phys Inst A 3, Aachen, Germany
[41] Rhein Westfal TH Aachen, Phys Inst B 3, Aachen, Germany
[42] DESY, Hamburg, Germany
[43] Univ Hamburg, Hamburg, Germany
[44] Inst Expt Teilchenphys, Karlsruhe, Germany
[45] NCSR Demokritos, Inst Nucl & Particle Phys INPP, Aghia Paraskevi, Greece
[46] Univ Athens, Athens, Greece
[47] Natl Tech Univ Athens, Athens, Greece
[48] Univ Ioannina, Ioannina, Greece
[49] Eotvos Lorand Univ, MTA ELTE Lendulet CMS Particle & Nucl Phys Grp, Budapest, Hungary
[50] Wigner Res Ctr Phys, Budapest, Hungary
[51] Inst Nucl Res ATOMKI, Debrecen, Hungary
[52] Univ Debrecen, Inst Phys, Debrecen, Hungary
[53] Indian Inst Sci IISc, Bangalore, Karnataka, India
[54] Natl Inst Sci Educ & Res, HBNI, Bhubaneswar, India
[55] Panjab Univ, Chandigarh, India
[56] Univ Delhi, Delhi, India
[57] Inst Nucl Phys, HBNI, Kolkata, India
[58] Indian Inst Technol Madras, Madras, Tamil Nadu, India
[59] Bhabha Atom Res Ctr, Mumbai, Maharashtra, India
[60] Tata Inst Fundamental Res A, Mumbai, Maharashtra, India
[61] Tata Inst Fundamental Res B, Mumbai, Maharashtra, India
[62] Indian Inst Sci Educ & Res IISER, Pune, Maharashtra, India
[63] Inst Res Fundamental Sci IPM, Tehran, Iran
[64] Univ Coll Dublin, Dublin, Ireland
[65] Univ Bari, Politecn Bari, INFN Sez Bari, Bari, Italy
[66] INFN, Sez Bari, Bari, Italy

[67] Univ Bari, Bari, Italy
[68] Politecn Bari, Bari, Italy
[69] Univ Bologna, Sez Bologna, INFN, Bologna, Italy
[70] INFN, Sez Bologna, Bologna, Italy
[71] Univ Bologna, Bologna, Italy
[72] Catania Univ, INFN, Sez Catania, Catania, Italy
[73] INFN, Sez Catania, Catania, Italy
[74] Univ Catania, Catania, Italy
[75] Univ Firenze, Sez Firenze, INFN, Florence, Italy
[76] INFN, Sez Firenze, Florence, Italy
[77] Univ Firenze, Florence, Italy
[78] INFN, Lab Nazl Frascati, Frascati, Italy
[79] Univ Genoa, Sez Genova, INFN, Genoa, Italy
[80] INFN, Sez Genova, Genoa, Italy
[81] Univ Genoa, Genoa, Italy
[82] Univ Milano Bicocca, Sez Milano Bicocca, INFN, Milan, Italy
[83] INFN, Sez Milano Bicocca, Milan, Italy
[84] Univ Milano Bicocca, Milan, Italy
[85] Univ Napoli Federico II, Sez Napoli, INFN, Naples, Italy
[86] Univ Basilicata, Potenza, Italy
[87] Univ G Marconi, Rome, Italy
[88] INFN, Sez Napoli, Naples, Italy
[89] Univ Napoli Federico II, Naples, Italy
[90] Univ Basilicata, Potenza, Italy
[91] Univ G Marconi, Rome, Italy
[92] INFN, Sez Padova, Padua, Italy
[93] Univ Padua, Padua, Italy
[94] Univ Trento, Trento, Italy
[95] INFN, Sez Pavia, Pavia, Italy
[96] Univ Pavia, Pavia, Italy
[97] Univ Perugia, Sez Perugia, INFN, Perugia, Italy
[98] INFN, Sez Perugia, Perugia, Italy
[99] Univ Perugia, Perugia, Italy
[100] Univ Pisa, Scuola Normale Super Pisa, Sez Pisa, INFN, Pisa, Italy
[101] INFN, Sez Pisa, Pisa, Italy
[102] Univ Pisa, Pisa, Italy
[103] Scuola Normale Super Pisa, Pisa, Italy
[104] Sapienza Univ Roma, Sez Roma, INFN, Rome, Italy
[105] INFN, Sez Roma, Rome, Italy
[106] Sapienza Univ Roma, Rome, Italy
[107] Univ Torino, Sez Torino, INFN, Turin, Italy
[108] Univ Piemonte Orientale, Novara, Italy
[109] INFN, Sez Torino, Turin, Italy
[110] Univ Torino, Turin, Italy
[111] Univ Piemonte Orientale, Vercelli, Italy
[112] Univ Trieste, Sez Trieste, INFN, Trieste, Italy
[113] INFN, Sez Trieste, Trieste, Italy
[114] Kyungpook Natl Univ, Daegu, South Korea
[115] Chonnam Natl Univ, Inst Universe & Elementary Particles, Kwangju, South Korea

[116] Hanyang Univ, Seoul, South Korea
[117] Korea Univ, Seoul, South Korea
[118] Sejong Univ, Seoul, South Korea
[119] Seoul Natl Univ, Seoul, South Korea
[120] Univ Seoul, Seoul, South Korea
[121] Sungkyunkwan Univ, Suwon, South Korea
[122] Vilnius Univ, Vilnius, Lithuania
[123] Univ Malaya, Natl Ctr Particle Phys, Kuala Lumpur, Malaysia
[124] Univ Sonora UNISON, Hermosillo, Sonora, Mexico
[125] IPN, Ctr Invest Estudios Avanzados, Mexico City, DF, Mexico
[126] Univ Iberoamer, Mexico City, DF, Mexico
[127] Benemerita Univ Autonoma Puebla, Puebla, Mexico
[128] Univ Autonoma San Luis Potosi, San Luis Potosi, San Luis Potosi, Mexico
[129] Univ Auckland, Auckland, New Zealand
[130] Univ Canterbury, Christchurch, New Zealand
[131] Quaid I Azam Univ, Natl Ctr Phys, Islamabad, Pakistan
[132] Natl Ctr Nucl Res, Otwock, Poland
[133] Univ Warsaw, Inst Expt Phys, Fac Phys, Warsaw, Poland
[134] Lab Instrumentacao & Fis Expt Particulas, Lisbon, Portugal
[135] Joint Inst Nucl Res, Dubna, Russia
[136] Petersburg Nucl Phys Inst, St Petersburg, Russia
[137] Inst Nucl Res, Moscow, Russia
[138] Inst Theoret & Expt Phys, Moscow, Russia
[139] Moscow Inst Phys & Technol, Moscow, Russia
[140] Natl Res Nucl Univ, Moscow Engn Phys Inst MEPhI, Moscow, Russia
[141] PN Lebedev Phys Inst, Moscow, Russia
[142] Lomonosov Moscow State Univ, Skobeltsyn Inst Nucl Phys, Moscow, Russia
[143] Novosibirsk State Univ NSU, Novosibirsk, Russia
[144] State Res Ctr Russian Federat, Inst High Energy Phys NRC, Kurchatov Inst, Protvino, Russia
[145] Natl Res Tomsk Polytech Univ, Tomsk, Russia
[146] Univ Belgrade, Fac Phys, Belgrade, Serbia
[147] Univ Belgrade, Vinca Inst Nucl Sci, Belgrade, Serbia
[148] CIEMAT, Madrid, Spain
[149] Univ Autonoma Madrid, Madrid, Spain
[150] Univ Oviedo, Oviedo, Spain
[151] CSIC Univ Cantabria, Inst Fis Cantabria IFCA, Santander, Spain
[152] CERN, European Org Nucl Res, Geneva, Switzerland
[153] Paul Scherrer Inst, Villigen, Switzerland
[154] Swiss Fed Inst Technol, Inst Particle Phys & Astrophys IPA, Zurich, Switzerland
[155] Univ Zurich, Zurich, Switzerland
[156] Natl Cent Univ, Chungli, Taiwan
[157] Natl Taiwan Univ, Taipei, Taiwan
[158] Chulalongkorn Univ, Dept Phys, Fac Sci, Bangkok, Thailand
[159] Cukurova Univ, Dept Phys, Sci & Art Fac, Adana, Turkey
[160] Middle East Tech Univ, Dept Phys, Ankara, Turkey
[161] Bogazici Univ, Istanbul, Turkey
[162] Istanbul Tech Univ, Istanbul, Turkey
[163] Natl Acad Sci Ukraine, Inst Scintillat Mat, Kharkov, Ukraine
[164] Kharkov Inst Phys & Technol, Natl Sci Ctr, Kharkov, Ukraine

[165] Univ Bristol, Bristol, Avon, England
[166] Rutherford Appleton Lab, Didcot, Oxon, England
[167] Imperial Coll, London, England
[168] Brunel Univ, Uxbridge, Middx, England
[169] Baylor Univ, Waco, TX 76798 USA
[170] Catholic Univ Amer, Washington, DC 20064 USA
[171] Univ Alabama, Tuscaloosa, AL USA
[172] Boston Univ, Boston, MA 02215 USA
[173] Brown Univ, Providence, RI 02912 USA
[174] Univ Calif Davis, Davis, CA 95616 USA
[175] Univ Calif Los Angeles, Los Angeles, CA USA
[176] Univ Calif Riverside, Riverside, CA 92521 USA
[177] Univ Calif San Diego, La Jolla, CA 92093 USA
[178] Univ Calif Santa Barbara, Dept Phys, Santa Barbara, CA 93106 USA
[179] CALTECH, Pasadena, CA 91125 USA
[180] Carnegie Mellon Univ, Pittsburgh, PA 15213 USA
[181] Univ Colorado, Boulder, CO 80309 USA
[182] Cornell Univ, Ithaca, NY USA
[183] Fermilab Natl Accelerator Lab, POB 500, Batavia, IL 60510 USA
[184] Univ Florida, Gainesville, FL USA
[185] Florida Int Univ, Miami, FL 33199 USA
[186] Florida State Univ, Tallahassee, FL 32306 USA
[187] Florida Inst Technol, Melbourne, FL 32901 USA
[188] Univ Illinois, Chicago, IL USA
[189] Univ Iowa, Iowa City, IA USA
[190] Johns Hopkins Univ, Baltimore, MD USA
[191] Univ Kansas, Lawrence, KS 66045 USA
[192] Kansas State Univ, Manhattan, KS 66506 USA
[193] Lawrence Livermore Natl Lab, Livermore, CA USA
[194] Univ Maryland, College Pk, MD 20742 USA
[195] MIT, 77 Massachusetts Ave, Cambridge, MA 02139 USA
[196] Univ Minnesota, Minneapolis, MN USA
[197] Univ Mississippi, Oxford, MS USA
[198] Univ Nebraska, Lincoln, NE USA
[199] SUNY Buffalo, Buffalo, NY USA
[200] Northeastern Univ, Boston, MA 02115 USA
[201] Northwestern Univ, Evanston, IL USA
[202] Univ Notre Dame, Notre Dame, IN 46556 USA
[203] Ohio State Univ, Columbus, OH 43210 USA
[204] Princeton Univ, Princeton, NJ 08544 USA
[205] Univ Puerto Rico, Mayaguez, PR USA
[206] Purdue Univ, W Lafayette, IN 47907 USA
[207] Purdue Univ Northwest, Hammond, IN USA
[208] Rice Univ, Houston, TX USA
[209] Univ Rochester, Rochester, NY 14627 USA
[210] Rutgers State Univ, Piscataway, NJ USA
[211] Univ Tennessee, Knoxville, TN USA
[212] Texas A&M Univ, College Stn, TX USA
[213] Texas Tech Univ, Lubbock, TX 79409 USA

[214] Vanderbilt Univ, 221 Kirkland Hall, Nashville, TN 37235 USA
[215] Univ Virginia, Charlottesville, VA USA
[216] Wayne State Univ, Detroit, MI USA
[217] Univ Wisconsin, Madison, WI USA
[218] Vienna Univ Technol, Vienna, Austria
[219] Univ Estadual Campinas, Campinas, SP, Brazil
[220] Univ Fed Rio Grande do Sul, Porto Alegre, RS, Brazil
[221] Univ Chinese Acad Sci, Beijing, Peoples R China
[222] Cairo Univ, Cairo, Egypt
[223] Helwan Univ, Cairo, Egypt
[224] Zewail City Sci & Technol, Zewail, Egypt
[225] British Univ Egypt, Cairo, Egypt
[226] Fayoum Univ, Al Fayyum, Egypt
[227] King Abdulaziz Univ, Dept Phys, Jeddah, Saudi Arabia
[228] Univ Haute Alsace, Mulhouse, France
[229] Brandenburg Tech Univ Cottbus, Cottbus, Germany
[230] IIT Bhubaneswar, Bhubaneswar, Odisha, India
[231] Inst Phys, Bhubaneswar, Odisha, India
[232] Shoolini Univ, Solan, India
[233] Univ Visva Bharati, Santini Ketan, W Bengal, India
[234] Isfahan Univ Technol, Esfahan, Iran
[235] Islamic Azad Univ, Sci & Res Branch, Plasma Phys Res Ctr, Tehran, Iran
[236] Univ Siena, Siena, Italy
[237] Kyung Hee Univ, Seoul, South Korea
[238] Int Islamic Univ Malaysia, Kuala Lumpur, Malaysia
[239] Agensi Nuklear Malaysia, MOSTI, Kajang, Malaysia
[240] Consejo Nacl Ciencia & Technol, Mexico City, DF, Mexico
[241] Warsaw Univ Technol, Inst Elect Syst, Warsaw, Poland
[242] Uzbek Acad Sci, Inst Nucl Phys, Tashkent, Uzbekistan
[243] St Petersburg State Polytech Univ, St Petersburg, Russia
[244] Budker Inst Nucl Phys, Novosibirsk, Russia
[245] Scuola Normale Super Pisa, Pisa, Italy
[246] Riga Tech Univ, Riga, Latvia
[247] Stefan Meyer Inst Subat Phys, Vienna, Austria
[248] Adiyaman Univ, Adiyaman, Turkey
[249] Istanbul Aydin Univ, Istanbul, Turkey
[250] Mersin Univ, Mersin, Turkey
[251] Piri Reis Univ, Istanbul, Turkey
[252] Gaziosmanpasa Univ, Tokat, Turkey
[253] Ozyegin Univ, Istanbul, Turkey
[254] Izmir Inst Technol, Izmir, Turkey
[255] Marmara Univ, Istanbul, Turkey
[256] Kafkas Univ, Kars, Turkey
[257] Istanbul Bilgi Univ, Istanbul, Turkey
[258] Hacettepe Univ, Ankara, Turkey
[259] Univ Southampton, Sch Phys & Astron, Southampton, Hants, England
[260] Monash Univ, Fac Sci, Clayton, Vic, Australia
[261] Bethel Univ, St Paul, MN USA
[262] Karamanoglu Mehmetbey Univ, Karaman, Turkey

[263] Utah Valley Univ, Orem, UT USA

[264] Beykent Univ, Sariyer, Turkey

[265] Bingol Univ, Bingol, Turkey

[266] Sinop Univ, Sinop, Turkey

[267] Mimar Sinan Univ, Istanbul, Turkey

[268] Texas A&M Univ Qatar, Doha, Qatar

Funding

Funding Agency	Grant Number
BMWFW (Austria)	
FWF (Austria)	
FNRS (Belgium)	
FWO (Belgium)	
CNPq (Brazil)	
CAPES (Brazil)	
FAPERJ (Brazil)	
FAPESP (Brazil)	
MES (Bulgaria)	
CERN	
CAS (China)	
MoST (China)	
NSFC (China)	
COLCIENCIAS (Colombia)	
MSES (Croatia)	
CSF (Croatia)	
RPF (Cyprus)	
SENESCYT (Ecuador)	
MoER (Estonia)	
ERC IUT (Estonia)	
ERDF (Estonia)	
Academy of Finland (Finland)	
MEC (Finland)	
HIP (Finland)	
CEA (France)	
CNRS/IN2P3 (France)	
BMBF (Germany)	
DFG (Germany)	
HGF (Germany)	
GSRT (Greece)	
NKFIA (Hungary)	
DAE (India)	
DST (India)	
IPM (Iran)	
SFI (Ireland)	
INFN (Italy)	
MSIP (Republic of Korea)	
NRF (Republic of Korea)	
LAS (Lithuania)	

MOE (Malaysia)	
UM (Malaysia);	
BUAP (Mexico)	
CINVESTAV (Mexico)	
CONACYT (Mexico)	
LNS (Mexico)	
SEP (Mexico)	
UASLP-FAI (Mexico)	
MBIE (New Zealand)	
PAEC (Pakistan)	
MSHE (Poland)	
NSC (Poland)	
FCT (Portugal)	
JINR (Dubna)	
MON (Russia)	
RosAtom (Russia)	
RAS (Russia)	
RFBR (Russia)	
MESTD (Serbia)	
SEIDIR (Spain)	
CPAN (Spain)	
PCTI (Spain)	
FEDER (Spain);	
Swiss Funding Agencies (Switzerland)	
MST (Taipei)	
ThEPCenter (Thailand)	
IPST (Thailand)	
STAR (Thailand)	
NSTDA (Thailand)	
TUBITAK (Turkey)	
TAEK (Turkey)	
NASU (Ukraine)	
SFFR (Ukraine)	
STFC (United Kingdom)	
DOE (USA)	
NSF (USA)	

View funding text

Publisher

AMER PHYSICAL SOC, ONE PHYSICS ELLIPSE, COLLEGE PK, MD 20740-3844 USA

Categories / Classification

Research Areas: Physics

Web of Science Categories: Physics, Multidisciplinary

See more data fields

Cited References: 60

Showing 30 of 60 **View All in Cited References page** *(from Web of Science Core Collection)*

1. **Observation of a Centrality-Dependent Dijet Asymmetry in Lead-Lead Collisions at root s(NN)=2.76 TeV with the ATLAS Detector at the LHC** Times Cited: 477
By: Aad, G.; Abbott, B.; Abdallah, J.; et al.
Group Author(s): ATLAS Collaboration
PHYSICAL REVIEW LETTERS Volume: 105 Issue: 25 Article Number: 252303 Published: DEC 13 2010

2. **Transverse momentum, rapidity, and centrality dependence of inclusive charged-particle production in root s(NN)=5.02 TeV p+Pb collisions measured by the ATLAS experiment** Times Cited: 15
By: Aad, G.; Abbott, B.; Abdallah, J.; et al.
Group Author(s): ATLAS Collaboration
PHYSICS LETTERS B Volume: 763 Pages: 313-336 Published: DEC 10 2016

3. **Centrality and rapidity dependence of inclusive jet production in root(NN)-N-S=5.02 TeV proton-lead collisions with the ATLAS detector** Times Cited: 56
By: Aad, G.; Abbott, B.; Abdallah, J.; et al.
Group Author(s): ATLAS Collaboration
PHYSICS LETTERS B Volume: 748 Pages: 392-413 Published: SEP 2 2015

4. **Transverse momentum dependence of inclusive primary charged-particle production in p-Pb collisions at root S-NN=5.02 TeV** Times Cited: 40
By: Abelev, B.; Adam, J.; Adamova, D.; et al.
Group Author(s): ALICE Collaboration
EUROPEAN PHYSICAL JOURNAL C Volume: 74 Issue: 9 Article Number: 3054 Published: SEP 16 2014

5. **Transverse Momentum Distribution and Nuclear Modification Factor of Charged Particles in p plus Pb Collisions at root(NN)-N-s=5.02 TeV** Times Cited: 135
By: Abelev, B.; Adam, J.; Adamova, D.; et al.
Group Author(s): ALICE Collaboration
PHYSICAL REVIEW LETTERS Volume: 110 Issue: 8 Article Number: 082302 Published: FEB 21 2013

6. **Coherent J/psi photoproduction in ultra-peripheral Pb-Pb collisions at root s(NN)=2.76 TeV** Times Cited: 117
By: Abelev, B.; Adam, J.; Adamova, D.; et al.
Group Author(s): ALICE Collaboration
PHYSICS LETTERS B Volume: 718 Issue: 4-5 Pages: 1273-1283 Published: JAN 29 2013

7. **Measurement of charged jet production cross sections and nuclear modification in p-Pb collisions at root s(NN)=5.02 TeV** Times Cited: 26
By: Adam, J.; Adamova, D.; Aggarwal, M. M.; et al.
Group Author(s): ALICE Collaboration
PHYSICS LETTERS B Volume: 749 Pages: 68-81 Published: OCT 7 2015

8. **Measurement of dijet k(T) in p-Pb collisions at root s(NN)=5.02 TeV** Times Cited: 14
By: Adam, J.; Adamova, D.; Aggarwal, M. M.; et al.
Group Author(s): ALICE Collaboration
PHYSICS LETTERS B Volume: 746 Pages: 385-395 Published: JUN 30 2015

9. **Identified hadron spectra at large transverse momentum in p+p and d+Au collisions at,root(NN)-N-S=200 GeV** Times Cited: 202
By: Adams, J.; Aggarwal, M. M.; Ahammed, Z.; et al.
Group Author(s): STAR Collaboration
PHYSICS LETTERS B Volume: 637 Issue: 3 Pages: 161-169 Published: JUN 8 2006

10. **Centrality dependence of pi(0) and eta production at large transverse momentum in root s(NN) = 200 GeV d+Au collisions** Times Cited: 125
By: Adler, S. S.; Afanasiev, S.; Aidala, C.; et al.
Group Author(s): PHENIX Collaboration
PHYSICAL REVIEW LETTERS Volume: 98 Issue: 17 Article Number: 172302 Published: APR 27 2007

11. **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

12. **PREDICTIONS FOR p plus Pb COLLISIONS AT root s(NN)=5 TeV** — Times Cited: 122
By: Albacete, Javier L.; Armesto, Nestor; Baier, Rudolf; et al.
INTERNATIONAL JOURNAL OF MODERN PHYSICS E-NUCLEAR PHYSICS Volume: 22 Issue: 4 Article Number: 1330007 Published: APR 2013

13. **An analysis of the impact of LHC Run I proton-lead data on nuclear parton densities** — Times Cited: 14
By: Armesto, Nestor; Paukkunen, Hannu; Penin, Jose Manuel; et al.
EUROPEAN PHYSICAL JOURNAL C Volume: 76 Issue: 4 Article Number: 218 Published: APR 21 2016

14. **The A dependence of the nuclear structure function ratios** — Times Cited: 87
By: Arneodo, M; Arvidson, A; Badelek, B; et al.
NUCLEAR PHYSICS B Volume: 481 Issue: 1-2 Pages: 3-22 Published: DEC 9 1996

15. **THE RATIO OF THE NUCLEON STRUCTURE FUNCTIONS F2N FOR IRON AND DEUTERIUM** — Times Cited: 877
By: AUBERT, JJ; BASSOMPIERRE, G; BECKS, KH; et al.
PHYSICS LETTERS B Volume: 123 Issue: 3-4 Pages: 275-278 Published: 1983

16. **EXPONENTIAL HADRONIC SPECTRUM AND QUARK LIBERATION** — Times Cited: 268
By: CABIBBO, N; PARISI, G
PHYSICS LETTERS B Volume: 59 Issue: 1 Pages: 67-69 Published: 1975

17. Title: [not available] — Times Cited: 330
By: CACCIARI M
J HIGH ENERGY PHYS Published: 2008

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. **Determination of jet energy calibration and transverse momentum resolution in CMS** — Times Cited: 442
By: Chatrchyan, S.; Khachatryan, V.; Sirunyan, A. M.; et al.
Group Author(s): CMS Collaboration
JOURNAL OF INSTRUMENTATION Volume: 6 Article Number: P11002 Published: NOV 2011

20. **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

21. **Observation and studies of jet quenching in PbPb collisions at root s(NN)=2.76 TeV** — Times Cited: 352
By: Chatrchyan, S.; Khachatryan, V.; Sirunyan, A. M.; et al.
PHYSICAL REVIEW C Volume: 84 Issue: 2 Article Number: 024906 Published: AUG 12 2011

22. **Multiplicity and transverse momentum dependence of two- and four-particle correlations in pPb and PbPb collisions** — Times Cited: 280
By: Chatrchyan, S.; Khachatryan, V.; Sirunyan, A. M.; et al.
Group Author(s): CMS Collaboration
PHYSICS LETTERS B Volume: 724 Issue: 4-5 Pages: 213-240 Published: JUL 23 2013

23. **Jet momentum dependence of jet quenching in PbPb collisions at root s(NN)=2.76 TeV** — Times Cited: 144
By: Chatrchyan, S.; Khachatryan, V.; Sirunyan, A. M.; et al.
Group Author(s): CMS Collaboration
PHYSICS LETTERS B Volume: 712 Issue: 3 Pages: 176-197 Published: JUN 6 2012

24. **CMS luminosity calibration for the pp reference run at p s = 5 : 02 TeV** — Times Cited: 4
Group Author(s): CMS collaboration
CMS- PAS- LUM- 16- 001 Published: 2016

25. **Luminosity calibration for the 2013 proton-lead and proton-proton data taking** Times Cited: 6
Group Author(s): CMS Collaboration
CMS Physics Analysis Summary CMS-PAS-LUM-13-002 Published: 2014

26. **Measurement of inclusive jet production and nuclear modifications in pPb collisions at VirNTN = 5. 02 TeV** Times Cited: 7
Group Author(s): CMS Collaboration
Eur. Phys. J. C Volume: 76 Pages: 372 Published: 2016

27. **Nuclear effects on the transverse momentum spectra of charged particles in pPb collisions p at sNN = 5.02 TeV** Times Cited: 8
Group Author(s): CMS Collaboration
Eur. Phys. J. C Volume: 75 Pages: 237 Published: 2015

28. **Studies of dijet transverse momentum balance and pseudorapidity distributions in pPb collisions at &RADIC;s<INF>NN</INF>= 5.02 TeV** Times Cited: 18
Group Author(s): CMS collaboration
Eur. Phys. J C Volume: 74 Pages: 2951 Published: 2014
INSPIRE

29. **Measurement of transverse momentum relative to dijet systems in PbPb and pp collisions at p 2. 76 TeV** Times Cited: 19
Group Author(s): CMS Collaboration
J. High Energy Phys Volume: 01 Article Number: 006 Published: 2016

30. **Study of B Meson Production in p + Pb Collisions at p sNN = 5 : 02 TeV Using Exclusive Hadronic Decays** Times Cited: 13
Group Author(s): CMS collaboration
Phys. Rev. Lett. Volume: 116 Article Number: 032301 Published: 2016
INSPIRE

Showing 30 of 60 View All in Cited References page