Dr. Anterpreet Kaur

Qualification : Bachelor of Science (B.Sc. Non-Medical) , Master of Science in Physics (M.Sc. Honors), Master of Philosophy in Physics (M.Phil), Doctor of Philosophy in Physics (Ph.D.), UGC NET

Teaching Experience : 4 years

Area of Specialization : Experimental High Energy Physics (Particle Physics)

Publications :

Books

- Ms. Raman Chadha & **Dr. Anterpreet Kaur**, "A TEXT BOOK OF QUANTUM PHYSICS-II, FOR B.SC. SEM. 4, (P.U.) 2022. Mohindra Publishing House, ISBN : ISBN : 9789390758890

- Dr. Neelam Malhotra, Ms. Raman Chadha & **Dr. Anterpreet Kaur**, "A Text book of Quantum Physics-I", for B.Sc. Sem. 3, (P.U.) 2021. Mohindra Publishing House, ISBN : 978-93-90758-40-1

- **Anterpreet Kaur**, "**Subjet structure in p-p collisions at LHC Energies**". 2018. LAMBERT Academic Publishing, Germany. ISBN : 978-613-9-85151-5

Papers in Refreed Journals (I am a co-author of more than 500 Journal Articles with the CMS Collaboration and the full list of publications can be found at https://inspirehep.net/authors/1233182 **) :**

1. A. Kaur, M. Kaur, R. Aggarwal, "Investigation of particle production in h-A collisions using statistical distributions", International Journal of Modern Physics E, Vol. 30, No. 02, 2150007 (2021), ISSN : 1793-6608, doi:10.1142/s0218301321500075 [arXiv:2005.13968 [hep-ph]]

2. M. Kaur and Anter P. Kaur, "Subjet Multiplicities at LHC Energies and the QCD Color Factor Ratio C_A /C_F", Advances in High Energy Physics 2013, Article ID 585809 (2013) doi:10.1155/2013/585809.

3. A. Kaur et al.,"Measurement of the double-differential inclusive jet cross section in proton-proton collisions at √s = 13 TeV", Eur. Phys. J. C 76, no. 8, 451 (2016) doi:10.1140/epjc/s10052-016-4286-3 [arXiv:1605.04436 [hep-ex]].

4. A. Kaur et al.,"Measurement and QCD analysis of double-differential inclusive jet cross sections in pp collisions at √s = 8 TeV and cross section ratios to 2.76 and 7 TeV", JHEP

1703, 156 (2017) doi:10.1007/JHEP03 (2017) 156 [arXiv:1609.05331 [hep-ex]].

5. A. Kaur et al.,“Measurement of the triple-differential dijet cross section in proton-proton collisions at √s = 8 TeV and constraints on parton distribution functions”, Eur. Phys. J. C 77, no. 11, 746 (2017) doi:10.1140/epjc/s10052-017-5286-7 [arXiv:1705.02628 [hep-ex]].

6. A. Kaur et al.,“Azimuthal correlations for inclusive 2-jet, 3-jet, and 4-jet events in pp collisions at √s = 13 TeV”, Eur. Phys. J. C 78, no. 7, 566 (2018) doi:10.1140/epjc/s10052-018-6033-4 [arXiv:1712.05471 [hep-ex]].

7. A. Kaur et al.,“Measurements of the differential jet cross section as a function of the jet mass in dijet events from proton-proton collisions at √s = 13 TeV”, JHEP 1811, 113 (2018) doi:10.1007/JHEP11(2018)113 [arXiv:1807.05974 [hep-ex]].

8. A. Kaur et al.,“Measurements of jet charge with dijet events in pp collisions at √s = 8 TeV”, JHEP 1710, 131 (2017) doi:10.1007/JHEP10(2017)131 [arXiv:1706.05868 [hep-ex]].

9. A. Kaur et al.,“Measurement of differential cross sections in the kinematic angular variable φ^* for inclusive Z boson production in pp collisions at √s = 8 TeV”, JHEP 1803, 172 (2018) doi:10.1007/JHEP03(2018)172 [arXiv:1710.07955 [hep-ex]].

10. A. Kaur et al.,“Measurement of associated production of a W boson and a charm quark in proton-proton collisions at √s = 13 TeV”, Eur. Phys. J. C 79, no. 3, 269 (2019) doi:10.1140/epjc/s10052-019-6752-1 [arXiv:1811.10021 [hep-ex]].

11. A. Kaur et al.,“Event shape variables measured using multijet final states in proton-proton collisions at √s = 13 TeV”, JHEP 1812, 117 (2018) doi:10.1007/JHEP12(2018)117 [arXiv:1811.00588 [hep-ex]].

12. A. Kaur et al.,“Measurement of differential cross sections for inclusive isolated-photon and photon+jets production in proton-proton collisions at √s = 13 TeV”, Eur. Phys. J. C 79, no. 1, 20 (2019) doi:10.1140/epjc/s10052-018-6482-9 [arXiv:1807.00782 [hep-ex]].

13. A. Kaur et al.,“Measurement of differential cross sections for Z boson pair production in association with jets at √s = 8 and 13 TeV”, Phys. Lett. B 789, 19 (2019) doi:10.1016/j.physletb.2018.11.007 [arXiv:1806.11073 [hep-ex]].

14. A. Kaur et al.,“Measurement of differential cross sections for Z boson production in association with jets in proton-proton collisions at √s = 13 TeV”, Eur. Phys. J. C 78, no. 11, 965 (2018) doi:10.1140/epjc/s10052-018-6373-0 [arXiv:1804.05252 [hep-ex]].

15. A. Kaur et al.,“Electroweak production of two jets in association with a Z boson in proton-proton collisions at √s = 13 TeV”, Eur. Phys. J. C 78, no. 7, 589 (2018) doi:10.1140/epjc/s10052-018-6049-9 [arXiv:1712.09814 [hep-ex]].

16. A. Kaur et al.,“Measurement of the differential cross sections for the associated production of a W boson and jets in proton-proton collisions at √s = 13 TeV”, Phys. Rev. D 96, no. 7, 072005 (2017) doi:10.1103/PhysRevD.96.072005 [arXiv:1707.05979 [hep-ex]].

17. A. Kaur et al.,“Measurement of electroweak production of a W boson and two forward jets in proton-proton collisions at √s = 8 TeV”, JHEP 1611, 147 (2016) doi:10.1007/JHEP11(2016)147 [arXiv:1607.06975 [hep-ex]].

18. A. Kaur et al.,“Measurement of the WZ production cross section in pp collisions at √(s) = 13 TeV”, Phys. Lett. B 766, 268 (2017) doi:10.1016/j.physletb.2017.01.011 [arXiv:1607.06943 [hep-ex]].

19. A. Kaur et al.,“ Measurement of the ZZ production cross section and Z → $\ell^+\ell^-\ell'^+\ell'^-$ branching fraction in pp collisions at √s = 13 TeV”, Phys. Lett. B 763, 280 (2016)
Erratum: [Phys. Lett. B 772, 884 (2017)]
doi:10.1016/j.physletb.2017.0 10.1016/j.physletb.2016.10.054 [arXiv:1607.08834 [hep-ex]].

20. A. Kaur et al.,“Measurement of the production cross section of a W boson in association with two b jets in pp collisions at √s = 8 TeV”, Eur. Phys. J. C 77, no. 2, 92 (2017) doi:10.1140/epjc/s10052-016-4573-z [arXiv:1608.07561 [hep-ex]].

Papers in Conference Proceedings :

1. A. Kaur, “Differential jet cross sections at the CMS experiment”, PoS DIS 2018, 091 (2018). doi:10.22323/1.316.0091.

2. A. Kaur, “Measurements of event properties and multi-differential jet cross sections and impact of CMS measurements on Proton Structure and QCD parameters”, EPJ Web of Conferences 172 02001 (2018). doi:10.1051/epjconf/201817202001.

3. A. Kaur, “Extraction of the Strong Coupling Constant from the Measurement of Inclusive Multijet Event Cross Sections in pp Collisions at Center of Mass Energy of 8 TeV”, In: Naimuddin M. (eds) XXII DAE High Energy Physics Symposium, Springer Proceedings in Physics, 203, 341–344 (2018) doi:10.1007/978-3-319-73171-1 78.

Papers presented in Conferences, Workshops and Symposiums :

1. A. Kaur *et al.*, “Differential jet cross sections at the CMS experiment”, **DIS2018: XXVI International Workshop on Deep Inelastic Scattering and Related Subjects, 16-20 Apr 2018, Kobe University, Kobe (Japan)**

2. A. Kaur *et al.*, “Measurements of event properties and multi-differential jet cross sections and impact of CMS measurements on Proton Structure and QCD parameters”, **XLVII International Symposium on Multiparticle Dynamics (ISMD2017), 11-15 September, 2017, Tlaxcala City, Mexico**

3. A. Kaur *et al.*, “Inclusive jets results from CMS”, **International Workshop on Frontiers in Electroweak Interactions of Leptons and Hadrons, 2-6 November, 2016, Aligarh, India**

4. A. Kaur *et al.*, “Measurement of inclusive multijet cross sections in pp collisions using the CMS detector”, **11th Chandigarh Science Congress, CHASCON 2017, 9-11 March, 2017, Panjab University, Chandigarh, India**

5. A. Kaur *et al*., “Extraction of the strong coupling constant from the measurement of inclusive multijet event cross-sections in pp collisions at center of mass energy of 8 TeV”, **XXII DAE-BRNS High Energy Physics Symposium 2016, 12-16 December, 2016, Delhi, India**

Awards and Achievements :

1. Member of the CMS collaboration, CERN, Geneva, Switzerland, 2014-2021

2. LPC Guests and Visitors (G&V) Fellow, Fermi National Accelerator Laboratory USA (FermiLab), March-September, 2017

3. Senior Research Fellow (SRF) in Basic Scientific Research (BSR) Meritorious Fellowship by University Grants Commision (UGC), 2017-2018

4. Junior Research Fellow (JRF) in Basic Scientific Research (BSR) Meritorious Fellowship by University Grants Commision (UGC), 2015-2017

5. Junior Research Fellow in DST Research Project entitled “Compact Muon Solenoid (CMS) Upgrade, Operation and Utilization”, 2014-2015

6. Junior Research Fellow in DST Research Project entitled “Study of new particles with the CMS Detector at the Large Hadron Collider and Heavy Ions Physics using LHC at CERN-CMS experiment”, 2013-2014

7. Qualified **National Elgibility Test (NET) (Lecturership (L.S.))**, December 2012