

# Prabir Kumar Haldar

## Curriculum Vitae

Cooch Behar Panchanan Barma University  
Department of Physics  
Panchanan Nagar  
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### Education

- 2003 **Ph.D (Physics)**, Jadavpur University, Jadavpur, Kolkata.
- 1997 **M.Sc (Physics)**, Jadavpur University, Jadavpur, Kolkata.  
First Class
- 1995 **B.Sc (Physics)**, Jadavpur University, Jadavpur, Kolkata.  
First Class

### Ph.D Thesis

Title **"Fluctuation in fragmentation and pionisation in ultra relativistic nuclear interactions"**

Supervisors Prof. Dipak Ghosh & Prof. Arghya Deb, Department of Physics, Jadavpur University.

### Teaching Experience:

Name Of The Institution	Position Held	Working Period
Cooch Behar Panchanan Barma University	Professor	01-02-2018 to till date
Dinhata College	Asst. professor of physics	02-03-2005 to 31-01-2018
Siliguri Institute of Technology	Lecturer of Physics	24-08-2004 to 01-03-2005

### Awards

- 1991 National Scholarships (H. S.Examination) by Government of India
  - 2009 Recipients of SERC FAST TRACK Scheme for Young Scientists from DST, Govt. of India
  - 2011 The best oral presentation award in 18<sup>th</sup> WB State Science & Technology Congress
  - 2016 The best oral presentation award in 1<sup>st</sup> Regional Science & Technology Congress, Jalpaiguri Div
  - 2002 UGC NET Qualified.
  - 2020 Recipient of **Shiksha Ratna** award given by Govt. of West Bengal.
- **RG Score 29.47 Percentile: score is higher than 87.5% of Research Gate members.**

### Administrative Experience:

Positions Held	Period
Dean, Faculty of Post Graduate Studies in Science, Technology and Vocational Studies, Cooch Behar Panchanan Barma University (CBPBU)	From 14-06-2019 to till date
Controller of Examinations (Offg.), Cooch Behar Panchanan Barma University	From 29-03-2018 to 28-09-2018 (Six Months)
Head ,Department of Physics, Cooch Behar Panchanan Barma University (CBPBU)	From 09-02-2018 to 08-02-2020
Served as a Jt. Coordinator in the Dept. of Physics, CBPBU	Since Aug, 2015 to 31-10-2017
Head, Department of Physics, Dinhata College	From 01-09-2014 to 01-07-2017

## Research

### Subject specialization

High energy physics

### Areas of research interest

- High-energy Heavy-ion Interaction, Studies on different global and local aspects of multi-particle production, particle density fluctuation, nuclear multifragmentation etc. by using various statistical/analytical methods and Monte-Carlo simulations.
- Quantum dots, Advance Functional Materials, Polymer Electronics, Piezoelectric & Polymeric Nanogenerator, Metal Nanoparticles, Rare-earth Materials, Electrospinning Technique for Nanofiber preparation, Mechanical energy Harvesting.
- Receiving techniques of Very Low Frequency (VLF, 3-30 kHz) radio waves, Space Weather/Solar activities, Atmospheric phenomena e.g. Tropical Cyclones, Lightning-thunderstorm, Earthquakes etc. and their impacts on Ionosphere. Observation of naturally generated Extremely Low Frequency (ELF, 1-300 Hz) and Ultra Low Frequency (300-3000 Hz) radio signals.

## Ph.D. Thesis Guidance

Awarded: 01

Registered: 05

## Sponsored Projects:

Details of Sponsored Projects :				
Agency	Project Sanction No	Title	Approved Allocation	Status
<b>University Grants Commission</b>	PSW-139/06-07 (ERO) Dated: 19/02/2007 Duration : two Years	Fluctuation Studies of Pionisation Process for ring like and Jet like events in Ultra-Relativistic Nuclear Interactions	90,000/-	Completed
<b>Department of Science and Technology (Fast Track Scheme For Young scientists)</b>	Do No: SR/FTP/PS-21/2008 Recommended Date 25/09/2008	Investigation of ring like (Super spiky) events in Ultra-relativistic Nuclear Interactions – evidence of QGP formation or Cerenkov Gluon Radiation ( A new Concept in High energy Physics)	Total: Rs. 14,69,200/- Manpower: One JRF	Started on 03.04.2009( three years) Completed

## Total Publication

, *International Journals*, 60.

, *International conference papers*, 09.

, *National conference papers*, 12.

, *Regional/state level conference papers*, 02.

, *Books with ISBN number*, 02.

## Publication Details

### International Journals:

- [1] An approach to explore exotic hadronic states in  $^{24}\text{Mg} - \text{Ag}/\text{Br}$  interactions at 4.5 A GeV/c in framework of complex network analysis,- A. Ahmed, N. Subba, **P. K. Haldar**, A. N. Tawfik, **Eur. Phys. J. Plus** **136** 100 (2021).
- [2] Pronounced fluctuations of pions in ring-like events in  $^{16}\text{O} - \text{Ag}/\text{Br}$  interactions at 60 AGeV/c in the framework of complex network analysis- N. Subba, A. Ahmed, **P. K. Haldar**, A. N. Tawfik, **International Journal of Modern Physics E** 2150002, DOI: 10.1142/S0218301321500026 (2021).
- [3] First-principles study of anisotropic thermoelectric properties of hexagonal  $\text{KBaBi}$ - N. Barman, A. Barman, **P. K. Haldar**, **Journal of Solid State Chemistry** **296** 121961 (2021).
- [4] VLF radio signal anomaly associated with geomagnetic storm followed by an earthquake at a subtropical low latitude station in northeastern part of India- B. Das, A. Sen, **P. K. Haldar** and S. Pal, **Indian J Phys.** <https://doi.org/10.1007/s12648-020-01966-2> (2021).
- [5] D-region ionospheric disturbances associated with the Extremely Severe Cyclone Fani over North Indian Ocean as observed from two tropical VLF stations- B. Das, S. Sarkar, **P. K. Haldar** S. K. Midya, S. Pal, **Advances in Space Research** **67** 75-86 (2021).
- [6] Enhancement of data storage capability in a bilayer oxide based memristor for wearable electronic applications, - A. Siddik, **P. K. Haldar**, P. Garu, S. Bhattacharjee, U. Das, A. Barman, A. Roy, P. K. Sarkar, **J. Phys. D: Appl. Phys.** <https://doi.org/10.1088/1361-6463/ab81d3>, (2020).
- [7] Enhancement of luminescence behaviour of colloidal ZnO quantum dots coated with SiO<sub>2</sub> irradiated by  $\text{Ni}^{+7}$  ion-D. Chakdar, A. Siddik, N. Ghosh, G. Gope, and **P. K. Haldar**, **Advanced Science, Engineering and Medicine** **22**, 278-283,(2020).
- [8] Wavelet Analysis of Produced Pions in  $^{24}\text{Mg} - \text{Ag}/\text{Br}$  Interactions at 4.5 A GeV/c-P. Saha, N. Subba, A. Ahmed and **P. K. Haldar**, **Braz. J. Phys** <https://doi.org/10.1007/s13538-020-00736-z>,(2020).
- [9] Wavelet analysis of particle density function in nucleus-nucleus interactions -S. K. Manna, **P. K. Haldar**, P. Mali, A. Mukhopadhyay and G. Singh, **Int. J. Mod. Phys. E** **27**, 1850009-1850025, (2018).
- [10] Multifractal analysis of multiparticle emission data in the framework of visibility graph and sandbox algorithm- P. Mali, S. K. Manna, **P. K. Haldar**, A. Mukhopadhyay and G. Singh, **Physica A** **493**, 253-266, (2018).
- [11] Multifractal analysis of charged particle distributions using horizontal visibility graph and sandbox algorithm -P. Mali, S. K. Manna, **P. K. Haldar**, A. Mukhopadhyay and G. Singh, **Mod. Phys.Lett. A** **32**, 1750024-1750033 (2017).
- [12] Detrended analysis of shower track distribution in nucleus-nucleus interactions at CERN SPS

energy Chaos -P. Mali, S. K. Manna, **P. K. Haldar**, A. Mukhopadhyay and G. Singh, *Chaos Soliton Fract* **94**,86-94, (2017).

- [13] Multidimensional Intermittency Study of Target Fragments at CERN SPS Energies - **P. K. Haldar**, S. K. Manna, P. Saha and D. Ghosh, *Astroparticle Physics* **42**,76-85, (2013).
- [14] Ring and jet study on the azimuthal substructure of pions at CERN SPS energy-**P. K. Haldar**, S.K. Manna, P.Saha, D. Ghosh, *PRAMANA J Phys* **80(04)**, 631-642, (2012)
- [15] Dynamical fluctuations of pions for ring and jet-like events at SPS energy: an in-depth study with factorial correlator - P.K. Haldar, S.K. Manna, P.Saha, D. Ghosh, *Indian J Phys* **86(12)**, 1155-1162, (2012).
- [16] Peculiarities in the Distribution of Produced Particles emission in  $^{24}\text{Mg-Ag/Br}$  interactions at 4.5 A Gev - **P. K. Haldar**, S.K. Manna, P.Saha, D. Ghosh, *Indian Journal of Pure and Applied Physics Vol. 50*, 156-160, (2012).
- [17] Non-Statistical Fluctuations Of Pions For Ring- And Jet-Like Events At CERN SPS Energy - An In-Depth Analysis With Factorial Correlator - **P. K. Haldar**, S.K. Manna, P.Saha, D. Ghosh, *International Journal of Modern Physics E Vol. 20, No. 9*, 2027-2038, (2011).
- [18] Fluctuation pattern of shower and compound multiplicity distributions in nucleus-nucleus interactions at a few GeV, -D. Ghosh, A. Deb, M.Lahiri, P.Mandal, S. Biswas, J. Ghosh, S. Bhattacharyya, **P. K. Haldar** and D. Maity, *Int. J. Mod. Phys. E* **20**,1287-1306, (2011).
- [19] Factorial correlators and oscillatory multiplicity moments study of ring and jet-like events in  $^{16}\text{O} - \text{Ag/Br}$  interactions at 60 A GeV, -**P. K. Haldar** and S. K. Manna, *Can. J. Phys.* **89**,713-721, (2011).
- [20] Factorial correlators and oscillatory multiplicity moments at the CERN SPS energy for ring-like and jet-like events, -**P. K. Haldar** and S. K. Manna, *Chinese Phys. Lett.* **28**,012502, (2011).
- [21] Ring and jet-like structure and two-dimensional intermittency in nucleus-nucleus collisions at 200A GeV/c, -M. K. Ghosh, **P. K. Haldar**, S. K. Manna, A. Mukhopadhyay and G. Singh, *Nucl. Phys. A* **858**,67-85, (2011).
- [22] Intermittency and related issues in  $^{16}\text{O} - \text{Ag/Br}$  collision at 200A GeV/c, -M. K.Ghosh, **P. K. Haldar**, S. K. Manna, A. Mukhopadhyay and G. Singh, *Can. J. Phys* **88**, 575-584 (2010).
- [23] Levy index analysis for a multifractality and phase transition study of target fragments in ring-like and jet-like events, -D. Ghosh, A. Deb, A. Dhar(Mitra), R. Saha, D. Bhattacharya and **P. K. Haldar**, *Phys. Scr.* **82**,045201-045209, (2010).
- [24] Levy index and multifragmentations of targets at SPS energy-evidence of both monofractality and multifractality-D. Ghosh, A. Deb, **P. K. Haldar**, S. Guptaroy and A. Dhar(Mitra), *Fractals* **18**,75-86, (2010).

- [25] Void analysis of Target residues at SPS energies-. Sarkar, D. Ghosh, A. Deb, **P. K. Haldar** and R. Das, *Int. J. Mod. Phys. E* **19**,407-417, (2010).
- [26] Ring type events and nuclear collision at SPS energies and nuclear refractive index-D. Ghosh, A. Deb, A. Dhar(Mitra) and **P. K. Haldar**, *Acta. Phys. Pol. B* **40**,2355-2361, (2009).
- [27] Azimuthal correlation and fractal study of compound hadrons (pions and protons) at dubna and sps energies, -D. Ghosh, A. Deb, S. Ghosh, P. Mondal A. K. Mallik and **P. K. Haldar**, *Indian J. Phys.* **83**,1463 - 1485, (2009).
- [28] Multifragmentations of targets at SPS energy-evidence of both monofractality and multifractality -D. Ghosh, A. Deb, S. Sarkar and **P. K. Haldar**, *Fractals* **16**,1-6, (2008).
- [29] Fluctuation and fractal characteristics of ring like and jet like events produced at SPS Energies-D. Ghosh, A. Deb, **P. K. Haldar** and S. Guptaroy, *Indian J. of Phys.* **82**,1339-1371. (2008).
- [30] Signature of void probability scaling in jet like events  $^{16}O - Ag/Br$  interactions at 60 GeV/n-D. Ghosh, A. Deb, **P. K. Haldar** and S. Guptaroy, *Astropart. Phys.* **27**,127-133, (2007).
- [31] Fractality of emission of compound multiplicity in  $^{12}C - Ag/Br$  interactions at 4.5 A GeV -, D. Ghosh, A. Deb, S. Ghosh, P. Mondal and **P. K. Haldar**, *Can. J. Phys.* **85**,385-392, (2007).
- [32] Self-affine scaling and non-thermal phase transition in target fragments of muon-nucleus interactions at high energy -D. Ghosh, A. Deb, **P. K. Haldar**, S.I. Ahmed and P. Ghosh, *Mod. Phys. Lett. A* **22**,1759-1768, (2007).
- [33] Azimuthal asymmetry and dynamical fluctuation of compound multiplicity in nucleus-nucleus collisions at ultra-relativistic energy-D. Ghosh, A. Deb, **P. K. Haldar** and S. Guptaroy, *Can. J. Phys.* **85**,1035-1043, (2007).
- [34] Pronounced pionic self-similarity in ring-like events in  $^{16}O - Ag/Br$  interactions-D. Ghosh, A. Deb, **P. K. Haldar** and A. Dhar, *EPL* **80**,22003, (2007).
- [35] Study of multidimensional fluctuation and non-thermal phase transition study in ring and jet like events in ultra-relativistic nuclear collisions -D. Ghosh, A. Deb, **P. K. Haldar** and S. Guptaroy, *Indian J. Pure. A. Phys.* **45**,419-424, (2007).
- [36] Dynamical fluctuation of compound multiplicity in nucleus-nucleus interactions at 4.5 A GeV -Evidence of projectile dependence of azimuthal asymmetry -D. Ghosh, A. Deb, S. Ghosh, P. Mondal and **P. K. Haldar**, *Indian J. Pure. A. Phys.* **45**,965-968, (2007).
- [37] Strong self-similar fluctuations of target fragments in ring-like events in Ultra-relativistic nuclear collision-D. Ghosh, A. Deb, S. Sarkar and **P. K. Haldar**, *Chinese Phys. Letts.* **23**,2944-2947, (2006).
- [38] Pronounced fluctuation of target fragments in forward hemisphere only in Ultra-relativistic nuclear

- collision-D. Ghosh, A. Deb, S. Sarkar and **P. K. Haldar**, *Chinese Phys. Letts.* **23**,1441, (2006).
- [39] Maximum pseudorapidity gap analysis in nuclear interaction at few GeV to few hundred GeV -D. Ghosh, A. Deb, **P. K. Haldar**, and S. R. Sahoo, *Fizika B (Zagrab)* **12**,133-140, (2006).
- [40] Fragmentation of targets in Muon-nucleus interactions at  $(420 \pm 45)$  GeV strong two particle azimuthal correlation -D. Ghosh, A. Deb, **P. K. Haldar**, P. Ghosh and S.I. Ahmed, *Fizika B (Zagrab)* **15**,107-114, (2006).
- [41] Evidence of strong pion fluctuation in jet like events in  $^{32}S - Ag/Br$  interaction -D. Ghosh, A. Deb, **P. K. Haldar** and S. Guptaroy, *Chinese Phys. Lett.* **23**,815, (2006).
- [42] Dynamical azimuthal fluctuation of target fragments in forward and backward hemisphere in case of  $^{32}S - Ag/Br$  interaction -D. Ghosh, A. Deb, S. Sarkar and **P. K. Haldar**, *Indian J. Phys.* **80**,1029-1032, (2006).
- [43] Azimuthal pion fluctuation and phase transition in ultra-relativistic ring like and jet like events-D. Ghosh, A. Deb, **P. K. Haldar** and S. Guptaroy, *Indian J. Phys.* **80**,807-813, (2006).
- [44] Evidence of fractal behavior of pions and protons in high energy interaction - an experimental Investigation -D. Ghosh, A. Deb, S. Pal, **P. K. Haldar**, S. Bhattacharyya, P. Mondal, S. Biswas and M. Mondal, *Fractals* **13**,325-329, (2005).
- [45] Compound multiplicity distribution in nucleus-nucleus interactions - phase transition study -D. Ghosh, A. Deb, P. Mondal, S. Biswas and **P. K. Haldar**, *Fizika B* **14**,317-326, (2005).
- [46] Multifractal behaviour of nuclear fragments in high energy leptonic interactions-D. Ghosh, A. Deb, M. B. Lahiri, P. Ghosh and S. I. Ahmed and **P. K. Haldar**, *Phys. Rev. C* **70**, 054903-054910, (2004).
- [47] Validity of negative binomial multiplicity distribution in case of ultra-relativistic nucleus-nucleus interaction in azimuthal bins -D. Ghosh, A. Deb, **P. K. Haldar**, S. R. Sahoo and D. Maity, *EPL* **65**,311-315, (2004).
- [48] Non - statistical fluctuation in compound multiplicity distribution in ultrarelativistic nuclear collisions-factorial correletor study -D. Ghosh, A. Deb, M. B. Lahiri, P. Mondal, S. Biswas and **P. K. Haldar**, *J. Phys. G: Nucl. Part. Phys.* **30**,351, (2004).
- [49] Proton emission in nucleus nucleus interactions at 14.5 A GeV - Evidence of monofractality -D. Ghosh, A. Deb, S. R. Sahoo, **P. K. Haldar** and M. Mondal, *EPL* **65**,472-477, (2004).
- [50] Dynamical fluctuation of proton emission in heavy ion interactions -D. Ghosh, A. Deb, S. R. Sahoo, **P. K. Haldar**, and M. Mondal, *Indian J. Phys.* **78**,1249-1252, (2004).
- [51] Proton emission in asymmetric nuclear interactions at 14.5 A GeV -Evidence of strong dynamical fluctuation- D. Ghosh, A. Deb, S. R. Sahoo, **P. K. Haldar**, K. K. Patra and J. Ghosh, *Indian J.*

*Pure. Ap. Phy.* **42**,403-406, (2004).

- [52] Fragmentation in  $^{32}\text{S} - \text{Ag}/\text{Br}$  interaction at 200 GeV/n-Evaporation model revisited-D. Ghosh, A. Deb, **P. K. Haldar** and S. R.Sahoo, *Indian J. Phys.***77A**,63-65, (2003).
- [53] Observation of void probability scaling of proton emission in high energy nucleus-nucleus collisions -D. Ghosh, A. Deb, **P. K. Haldar** and S. R.Sahoo, *Mod. Phys. Lett. A* **18**, 2281-2286 (2003).
- [54] Multifractal specific heats in ultra-high energy nuclear collisions -Dipak Ghosh,Argha Deb, **P. K. Haldar** and S. R.Sahoo, A. Jaffery, *Nucl. Phys. A* **707**, 213-223 (2002).
- [55] Evidence of dynamical fluctuation of target residues in relativistic nuclear interaction at 14.5 A GeVc -D. Ghosh, A. Deb, S.R. Sahoo, K. K. Patra, **P. K. Haldar**, J. Ghosh, *Czech. J. Phys.* **52**, 789-794 (2002).
- [56] Target Fragmentation in  $^{28}\text{Si} - \text{Ag}/\text{Br}$  interactions at 14.5 AGeV evidence for two-and many-particle dynamical Correlations -D. Ghosh, A. Deb, S. Bhattacharyya, M. Mondol, R. Das, J. Ghosh, K. Chattopadhyay, R. Sarkar, S. Mukherjee, S. Biswas, P. Mondal, K. Kr. Patra, I. Dutta, S. R. Sahoo, **P. K. Haldar**, S. Prasad, S. Ghosh, *Fizika B* **11**, 73-82 (2002).
- [57] Non-statistical fluctuation of 'compound multiplicity' in nucleus-nucleus interactions - evidence of strong intermittency- D. Ghosh, A. Deb, S. Bhattacharyya, M. Mondol, R. Das, J. Ghosh, K. Chattopadhyay, R. Sarkar, S. Mukherjee, S. Biswas, P. Mondal, K. Kr. Patra, I. Dutta, S. R. Sahoo, **P. K. Haldar**, S. Prasad, S. Ghosh, *Chinese Phys. Letts.* **19**, 1436-1438, (2002).
- [58] A study on azimuthal asymmetry of emission of pions produced in ultra-relativistic nuclear collisions -D. Ghosh, A. Deb, S. R.Sahoo and **P. K. Haldar**, *EPL* **56**, 639-643, (2002).
- [59] Fragmentation of targets in  $^{28}\text{Si} - \text{Ag}/\text{Br}$  interactions at 14.5 A GeV- signature of side splash and strong azimuthal correlation-D. Ghosh, A. Deb, S. Bhattacharyya, M. Mondol, R. Das, J. Ghosh, K. Chattopadhyay, R. Sarkar, S. Mukherjee, S. Biswas, P. Mondal, K. Kr. Patra, I. Dutta, S. R. Sahoo, **P. K. Haldar**, S. Prasad, S. Ghosh, *Indian J. Phys.* **76A**, 277-281, (2002).
- [60] Fragmentation in  $^{16}\text{O} - \text{Ag}/\text{Br}$  interactions at 60 GeV/n, Evaporation model revisited-D. Ghosh, A. Deb, **P. K. Haldar** and S. R.Sahoo, *Fizika B (Zagreb)* **9**, 197-202, (2000).

## International Conference Papers

- [1] Factorial correlators and Oscillatory multiplicity moments study at the CERN SPS energy for Ring-like and Jet-like events-S. K. Manna and **P. K. Haldar**, *ICPAQGP 2010, Goa*, 6 – 10<sup>th</sup> Dec, (2010).
- [2] Searching for Ring-like and Jet-like substructure in  $^{24}\text{Mg} - \text{Ag}/\text{Br}$  interactions at 4.5 A GeV - **P. K. Haldar**, S. K. Manna, and P. Saha, *ICPAQGP 2010, Goa*, 6 – 10<sup>th</sup> Dec, (2010).
- [3] Search for Ring and Jet-Like Structures in Particle Emission from High-Energy Nucleus-Nucleus



Collisions - **P. K. Haldar**, S. K. Manna, M.K.Ghosh, A.Mukhopadhyay, D. Roychowdhury, G. Singh, **ACISNR 2010**, Fredonia, New York, May 5-7, USA (2010).

- [4] Non Statistical fluctuation Study in nucleus-nucleus Collisions at CERN SPS Energy- M. K.Ghosh, **P. K. Haldar**, S. K. Manna, A. Mukhopadhyay and G. Singh, **International Symp. of Nuclear Physics**, BARC, Mumbai, 8 – 10<sup>th</sup> Dec,(2009).
- [5] Two-dimensional intermittency in  $^{16}O - Ag/Br$  interactions at 200A GeV/c - M. K.Ghosh, **P. K. Haldar**, S. K. Manna, A. Mukhopadhyay and G. Singh, **International Symp. of Nuclear Physics**, BARC, Mumbai, 8 – 10<sup>th</sup> Dec,(2009).
- [6] Modified two sources quantum statistical model and pionisation in relativistic and ultra-relativistic nuclear collisions - **P. K. Haldar et.al**, 5<sup>th</sup> **International Conference on physics and astrophysics of Quark Gluon Plasma**, Feb 8-12, (2005).
- [7] Multiparticle Production and void probability scaling - A new observation- **P. K. Haldar et al.**, **CINPP Conf.**, Jadavpur University, Feb. 4-7, (2005).
- [8] Chaos in particle Production in Ultra Relativistic Nuclear Collisions - **P. K. Haldar et al.**, **ICPA - QGP**, JAIPUR, Nov. 26-30,(2001).
- [9] Evidence of Constant Multifractal Specific Heat in Hadronic Collisions at high energies- **P. K. Haldar et al.**, **ICPA - QGP**, JAIPUR, Nov. 26-30,(2001).

### **National Conference Papers**

- [1] Multifractal detrended fluctuation analysis of  $^{16}O - Ag/Br$  interaction at 60A GeV - S. K. Manna, **P. K. Haldar**, **DAE Symposium on Nuclear Physics**, Delhi, Dec.3-7,(2012).
- [2] Wavelet analysis of unusual Superspiky event produced in  $^{32}S - Ag/Br$  interactions at 200A GeV/c- **P. K. Haldar**, S. K. Manna, **DAE Symposium on Nuclear Physics**, Delhi, Dec.3-7,(2012).
- [3] Wavelet analysis of Ring and Jet-like events at CERN SPS Energy - **P. K. Haldar**, S. K. Manna, P.Saha, **DAE Symposium on Nuclear Physics Delhi**, Dec.3-7,(2012).
- [4] Wavelet analysis in high multiplicity events at CERN SPS energy - P. K. Haldar, S. K. Manna, **DAE Symposium on Nuclear Physics Visakhapatnam**, Dec.26-30,(2011).
- [5] Jet-like structure and Two-dimensional intermittency study at CERN SPS Energy- S. K. Manna, P.Saha, **P. K. Haldar**, **DAE Symposium on Nuclear Physics**, Visakhapatnam, Dec.26-30,(2011).
- [6] Non-statistical fluctuation study of pions in unusual superspiky Ring-like and spiky events at CERN SPS energy- **P. K. Haldar**, S. K. Manna, **XIX HEP Symposium**, Jaipur, Dec.13-18,(2010).
- [7] Self-affine multiplicity fluctuation of charged particles at CERN SPS energy- , **P. K. Haldar**, S. K. Manna, A. Mukhopadhyay and G. Singh, **XIX HEP Symposium**, Jaipur, Dec.13-18,(2010).

- [8] Factorial correlators and oscillatory multiplicity moments study in  $^{16}\text{O} - \text{Ag}/\text{Br}$  interactions at 60 A GeV for Ring like and Jet like events- , **P. K. Haldar**, S. K. Manna and P. Saha, **XIX HEP Symposium** , Jaipur,Dec.13-18,(2010).
- [9] Evidence of dynamical fluctuation of emission of pions produced in ultra-relativistic nuclear collisions at 200A GeV/c for different projectiles- **P. K. Haldar**, S. K. Manna, A. Mukhopadhyay and G. Singh, **DAE Symposium on Nuclear Physics, Pilani**,Dec.20-24,(2010).
- [10] Factorial correlators study for Ring-like and Jet-like events at CERN SPS energy - **P. K. Haldar**, S. K. Manna and P. Saha, **DAE Symposium on Nuclear Physics ,Pilani**,Dec.20-24,(2010).
- [11] Peculiarities of Produced Particles in heavy-ion Collisions at CERN SPS Energy - **P. K. Haldar**, S. K. Manna and P. Saha, **DAE Symposium on Nuclear Physics, Pilani**,Dec.20-24,(2010).
- [12] Jet-structure in  $^{16}\text{O} - \text{Ag}/\text{Br}$  interaction at 200 A GeV/c, - **P. K. Haldar**, S. K. Manna, A. Mukhopadhyay and G. Singh, **DAE Symposium on Nuclear Physics, Pilani**,Dec.20-24,(2010).

### State Level Conference Papers

- [1] Peculiarities and Intermittency Study of Target Fragments at CERN SPS Energies - S. K. Manna, P. Saha, **P. K. Haldar** and D. Ghosh, 19<sup>th</sup> **State Science & Technology Congress, SINP**,Mar.01-02,(2012).
- [2] Non-Statistical fluctuations of pions for Ring and Jet-like events at CERN SPS energy - An in-depth analysis with Factorial Correlator - S. K. Manna, P. Saha, **P. K. Haldar** and D. Ghosh, 18<sup>th</sup> **State Science & Technology Congress, 103** , Ramakrishna Mission Ashrama, Narendrapur, Kolkata, Feb 28<sup>th</sup> – 1<sup>st</sup> Mar. ,(2011).

### Books with ISBN Number

- [1] **Title:** " ENGINEERING PHYSICS"  
**Pages:** 611  
**ISBN:** 978-81-318-0366-0  
**Authors:** Dipak Chandra Ghosh, Nripesh Chandra Ghosh, Prabir Kumar Haldar  
**Publisher:** Laxmi Publications, Delhi  
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