

# Dr. Nirpat Subba, Ph.D

Professor (Assistant)  
Department Of Physics  
Cooch Behar Panchanan Barma University  
DOB: 13<sup>th</sup> July, 1995






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 Nirpat Subba       Nirpat Subba



## Employment History






2018 – . . . .       **Cooch Behar Panchanan Barma University, Cooch Behar-734102.**

## Education

- 2018 – 2024       **Ph.D., Cooch Behar Panchanan Barma University** High Energy Physics.  
Thesis title: *NON-STATISTICAL FLUCTUATIONS OF PIONS IN RING AND JET LIKE EVENTS IN ULTRA-RELATIVISTIC HEAVY-ION INTERACTIONS*
- 2015 – 2017       **M.Sc. in Physics, North Bengal University** in Nuclear and Particle Physics.
- 2012 – 2015       **B.Sc. in Physics, Darjeeling Government College**
- 2010 – 2012       **Higher Secondary Education, St. Robert Higher Secondary School**
- 2005 – 2010       **Secondary Education, Ghoom Boys Higher Secondary School**

## Research Publications

### Journal Articles

-  A. Ahmed, T. Biswas, N. Subba, *et al.*, “An approach to complex network analysis on pp collisions at the energies,” *International Journal of Modern Physics E*, vol. 33, no. 6, p. 2450022, 2024.
-  M. Ghimiray, N. Subba, A. Ahmed, A. N. Tawfik, and P. K. Haldar, “Energy dependence of the freeze-out parameters extracted from au+ au and pb+ pb collisions using thermus,” *Indian J. Phys.*, vol. 97, no. 5, pp. 1551–1564, 2023.
-  N. Subba, A. Ahmed, A. N. Tawfik, and P. K. Haldar, “R/s analysis on multiparticle production process in nucleus–nucleus collisions at different sps energies,” *Bulg. J. Phys.*, vol. 20, no. 20XX, pp. 1–14, 2023.
-  N. Subba and P. K. Haldar, “Wavelet transform-based multi-scale analysis of ring-like and jet-like events in relativistic heavy-ion collisions,” *The European Physical Journal Plus*, vol. 138, no. 12, p. 1128, 2023.
-  S. Bhattacharjee, S. Paul, A. Ahmed, N. Subba, A. N. Tawfik, and P. K. Haldar, “Search for fractality and phase transition in p–p collisions at the LHC energy,” *Int. J. Mod. Phys. E*, vol. 31, no. 08, p. 2250079, 2022.

- 6 A. Ahmed, N. Subba, S. Bhattacharjee, A. N. Tawfik, and P. K. Haldar, "Evidence of forward-backward correlation of pions in ultra-relativistic ring-and jet-like events in  $16\text{O}+^{\text{A}}\text{g}/^{\text{B}}\text{r}$  interactions at  $\sqrt{s_{\text{NN}}}=60\text{ a gev}$ ," *Euro. Phys. J. A*, vol. 57, no. 12, p. 322, 2021.
- 7 A. Ahmed, N. Subba, P. K. Haldar, and A. N. Tawfik, "An approach to explore exotic hadronic states in  $^{\text{m}}\text{g}-^{\text{a}}\text{g}/^{\text{b}}\text{r}$  interactions at  $4.5\text{ a gev}/c$  in framework of complex network analysis," *The Eur. Phys. J. Plus*, vol. 136, no. 1, p. 100, 2021.
- 8 N. Subba *et al.*, "Degree of multifractality and correlations in framework of multi-dimensional complex network analysis for  $^{16}\text{O}-^{\text{A}}\text{g}/^{\text{B}}\text{r}$  interactions at  $60\text{ a gev}$ ," *The Eur. Phys. J. Plus*, vol. 136, no. 8, pp. 1-13, 2021.
- 9 N. Subba, A. Ahmed, P. K. Haldar, and A. N. Tawfik, "Pronounced fluctuations of pions in ring-like events in  $16\text{O}-^{\text{a}}\text{g}/^{\text{b}}\text{r}$  interactions at  $60\text{ a gev}/c$  in the framework of complex network analysis," *Int. J. Mod. Phys. E*, vol. 30, no. 01, p. 2150002, 2021.
- 10 P. Saha, N. Subba, A. Ahmed, and P. K. Haldar, "Wavelet analysis of produced pions in  $24\text{ mg}-^{\text{a}}\text{g}/^{\text{b}}\text{r}$  interactions at  $4.5\text{ a gev}/c$ ," *Braz. J. Phys.*, vol. 50, pp. 105-111, 2020.
- 11 B. Thapa, P. Patra, N. Subba, and A. Shankar, "Effect of Mn doping in mechanical properties of  $\text{Cd}_{1-x}\text{Mn}_x\text{Te}_2$ ," *Materials Research Express*, vol. 6, no. 11, p. 116322, 2019.

## Conference Proceedings

- 1 N. Subba, M. Ghimiray, and P. Haldar, "Study of centrality dependent fractal behavior using  $r/s$  analysis in heavy-ion collisions at  $200\text{ a gev}$ ," in *International Conference on Physics and Astrophysics of Quark Gluon Plasma*, Puri, India, 2023.
- 2 N. Subba, M. Ghimiray, and P. Haldar, "Study of the centrality dependence of elliptic flow in  $\text{au}-\text{au}$  and  $\text{pb}-\text{pb}$  collision at  $200\text{ a gev}$ ," in *5th REGIONAL SCIENCE AND TECHNOLOGY CONGRESS (Region-1) 17th-18th JANUARY*, 2023.
- 3 N. Subba, M. Ghimiray, and P. Haldar, "Variation of elliptic flow at different collision systems at  $200\text{ a gev}$ ," in *2nd International Conference on "Advanced Functional Materials and Devices" (AFMD-2023)*, New Delhi, India, 2023, p. 58.
- 4 A. Ahmed, N. Subba, T. Biswas, A. Tawfik, and P. Haldar, "Study of ring-like and jet-like events in heavy-ion collisions using  $r/s$  analysis technique," in *Proceedings of the DAE Symp. on Nucl. Phys.*, vol. 66, 2022, p. 982.
- 5 N. Subba, M. Ghimiray, A. Tawfik, and P. Haldar, "Variation of elliptic flow with centrality using urqmd model in  $\text{au}+\text{au}$  and  $\text{pb}+\text{pb}$  collision at  $200\text{ a gev}$ ," in *Proceedings of the DAE Symp. on Nucl. Phys.*, vol. 66, 2022, p. 1024.
- 6 A. Ahmed, N. Subba, P. Haldar, and A. Tawfik, "Forward-backward multiplicity correlations in  $\text{pb}-\text{pb}$  collision at  $\sqrt{s_{\text{NN}}}=2.76\text{ tev}$ ," in *Proceedings of the DAE-BRNS symposium on nuclear physics. V. 65*, 2021.
- 7 M. Ghimiray, N. Subba, A. Ahmed, A. Tawfik, and P. Haldar, "Study of hadron yields produced in  $\text{pb}-\text{pb}$  collision," in *Proceedings of the DAE Symp. on Nucl. Phys.*, vol. 65, 2021, p. 620.



## Skills

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| Languages | Strong reading, writing and speaking competencies for English, Nepali, Hindi.                    |
| Coding    | Fortran, C++, Python, $\text{\LaTeX}$ , Root   |
| Misc.     | Academic research, teaching, training, consultation, $\text{\LaTeX}$ typesetting and publishing. |


## Miscellaneous Experience

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### Awards and Achievements

- 2010     **Top Student (Highest Academic Achievement)**, Ghoom Boys Higher Secondary School.
- 2015     **Department Topper for Outstanding Student Performance**, Darjeeling Government College.

### Certification

- 2009     **Vocational Training**. Awarded by Ghoom Boys Higher Secondary School.

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*November, 2023*