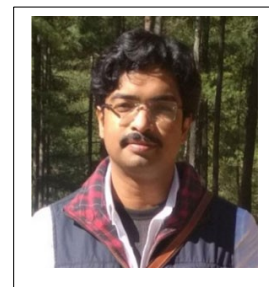


Dr. Pratyay Banerjee

Assistant Professor, WBES

Department of Physics

email: pratyay.banerjee@prtgc.ac.in



Specialization: Quantum Field Theory, General Theory of Relativity

Major Interest Areas: Mathematical Physics, Quantum Integrable systems, Bioinformatics.

Academic Credentials:

- *Ph.D. (2015): Saha Institute of Nuclear Physics, Kolkata*
- *M.Sc. (2007): Jadavpur University*
- *B.Sc. (2004): Jadavpur University*

Teaching Experience

- *Assistant Professor, P. R. Thakur Govt. College (November, 2015 - present)*

Courses taken:

- ✓ Mathematical Physics
- ✓ Quantum Mechanics
- ✓ Electrodynamics
- ✓ Statistical Mechanics
- ✓ Computational Laboratory (Python)

Research Interest:

- ✓ Quantum Integrable Systems
- ✓ Computational aspects of Biological sequence alignment problem

List of Publications:

1. "CPMFD: An algorithm for classification of point mutations together with frameshift determination in related mRNA sequences", Mondal P., **Banerjee P.**, Basuli K., *Mutation Research - Fundamental and Molecular Mechanisms of Mutagenesis*, Vol-**831**, Article no. 111918 (2025).
<https://doi.org/10.1016/j.mrfmmm.2025.111918>
2. "Visualizing Genetic Patterns: A Comparative Analysis of DNA Sequences Through Image Processing", Mondal P., Pal D., Basuli K. and **Banerjee P.**, *International Journal of Microsystems and IoT*, Vol-2 (2) (2024) page: 586–590.
3. "Construction of a Few Quantum Mechanical Hamiltonians via Lévy-Leblond Type Linearization: Clifford Momentum, Spinor States and Supersymmetry", Chakraborty A., Debnath B., Datta R. and **Banerjee P.**, *Adv. Appl. Clifford Algebras*, Vol-32 Article no. 56 (2022) page: 01-13 ([arXiv:1903.02734](https://arxiv.org/abs/1903.02734)).
4. "Supersymmetric analogue of BC_N type rational integrable models with polarized spin reversal operators", **Banerjee P.**, Basu-Mallick, B., Bondyopadhyaya N. and Dutta C., *Nuclear Physics B*, Vol-**904** (2016) page: 297-326 ([arXiv: 1511.05909](https://arxiv.org/abs/1511.05909)).

5. “Partition functions of Polychronakos like spin chains associated with polarized spin reversal operators”, Basu-Mallick B., Bondyopadhyaya N. and **Banerjee P.**, *Nuclear Physics B*, Vol-**883** (2014) page: 501-528 ([arXiv: 1402.2759](#)).
6. “Level density distribution for one-dimensional vertex models related to Haldane-Shastry like spin chains”, **Banerjee P.** and Basu-Mallick B., *J. Math. Phys.*, Vol-**53**, (2012) page: 083301 ([arXiv:1111.4376](#)).
7. “Exact solution of D_N type quantum Calogero model through a mapping to free harmonic oscillators”, **Banerjee P.** and Basu-Mallick B., *J. Math. Phys.*, Vol-**52**, (2011) page: 052106 ([arXiv: 1012.4342](#)).

List of Honours/Awards:

- ✓ Research Fellowship from Department of Atomic energy (Govt. of India), 2008.
- ✓ Council for Scientific and Industrial Research (India) Fellowship, 2007.