

Dr. Rohit Gupta

Curriculum Vitae

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Employment Details

- April 2026-present **Assistant Professor**, Department of Physics, Kashi Naresh University, Bhadohi, Uttar Pradesh, India
- July 2024-April 2026 **Assistant Professor**, Kashi Naresh Government Post Graduate College, Gyanpur, Uttar Pradesh, India
- 2026 Directorate of Higher Education, Government of Uttar Pradesh
- Nov 2021-June 2024 **Assistant Professor**, Shaheed Mangal Pandey Government Girls Degree College, Ballia, Uttar Pradesh, India
- 2024 Directorate of Higher Education, Government of Uttar Pradesh

Education

- 2016-2022 **PhD in Physics**, Indian Institute of Science Education and Research (IISER), Mohali, Punjab, India
Thesis title- 'A Unified Description of the Particle Production in Heavy-ion Collision'
- 2013-2015 **M.Sc. in Physics**, Indian Institute of Technology (IIT), Indore, M.P., India
CGPA: 8.24 out of 10
- 2010-2013 **B.Sc. Physical Sciences**, Hindu College, University of Delhi, New Delhi, India
Percentage: 78.4%

Scientific and/or Technical Expertise

- Publishing Tools $\text{\LaTeX}$, MS-Office
- Programming language C/C++, Python
- Tools ROOT, Mathematica, Octave
- HEP Software I have experience working on various high energy physics software's such as UrQMD, PYTHIA, MadGraph, JETSCAPE, HIJING etc (in both local computer as well as HPC environment).

Research Interest

I am broadly interested in high energy physics with a focus on understanding partonic matter and their contribution to the properties of nucleon. During the course of my Ph.D., I have worked toward a phenomenological study of the thermodynamical properties of the system created during high-energy collision. Currently, I am interested in the phenomenological study of the saturation of gluon density at very low x values and transition from this saturation state to QGP state. I am also interested in studying the spatial and momentum-space distribution of sea quarks and gluons within a nucleon and their spin contribution to overall spin of a nucleon.

National level exam

- 2015, 2018 **GATE Physics**, (*Indian Institute of Technology- Graduate Aptitude Test in Engineering*)
All India Rank-105 Percentile-98.6 (2015), All India Rank-99 Percentile-99.3 (2018)
- 2015 **JEST**, (*Joint Entrance Screening Test*)
All India Rank-310 Percentile-93.27
- 2015 **CSIR-JRF**, (*Council of Scientific and Industrial Research- Junior Research Fellow exam*)
All India Rank-130
- 2013 **IIT-JAM**, (*Indian Institute of Technology -Joint Admission Test for M.Sc.*)
All India Rank-227

Schools and Workshops

- Nov 2020-Feb 2021 **HPC Shiksha**, *NSM & CDAC*, Online mode
Basics of High Performance Computing (including modules on OpenMP, MPI and CUDA)
- September 2020 **Short term course**, *NIT Jalandhar*, Online mode
One week short term course on "Advances in High Energy Physics"
- August 2020 **HCPSS 2020**, *Fermilab, Chicago*, Online mode
Fermilab-CERN Hadron Collider Physics Summer School
- July 2020 **JETSCAPE 2020**, *University of Tennessee, Knoxville*, Online mode
JETSCAPE online summer school 2020
- April 2016 **PHENO-I**, *IISER, Mohali*
Symposium on High Energy Physics Phenomenology
- Feb 2015 **RDQT**, *BHU, Varanasi*
Workshop on 'Recent Development in Quantum Theories'
- May 2014 **ISSAA**, *IUCAA, Pune*
Introductory Summer School on Astronomy and Astrophysics

Presentations

- Nov 2025 **Poster presentation**, *India JINR Workshop on particle, nuclear, neutrino physics and astrophysics*, NISER, Bhubaneswar, Odisha, India
A comparative study of high multiplicity pp and heavy-ion collision using the q-Weibull distribution function
- Jan 2021 **Poster presentation**, *Initial Stages*, Weizmann Institute of Science, Israel, (Online mode)
A comparison of thermodynamical properties in high multiplicity pp and heavy ion collision
- Dec 2020 **Oral Presentation**, *DAE-BRNS HEP Symposium*, NISER, India, (Online mode)
A unified formalism to study soft as well as hard part of the transverse momentum spectra

- Aug 2020 **Poster Presentation/Flash Talk**, *ICHEP*, Prague, Czech Republic, (Online mode)
A generalized approach to study low as well as the high p_T regime of transverse momentum spectra
- Feb 29 2020 **Oral Presentation**, *Scholar Day*, IISER Mohali, India
Generalization of Non-extensivity in ultrarelativistic collision
- Dec 13 2017 **Oral Presentation**, *Scholar Day*, IISER Mohali, India
Constraining Parton Distribution Function using W charge asymmetry data
- May 31 2014 **Poster presentation**, *IUCAA*, Pune, India
Evolution of Universe for different cosmological model

Publication

Rohit Gupta, *Investigation of Nuclear Modification Factor from RHIC to LHC energies using Boltzmann Transport equation in conjunction with q -Weibull distribution*, Phys.Rev.D 113 (2026) 5, 054026, (IF: 5.3)

Rohit Gupta & Satyajit Jena, *A comparative study of hadron-hadron and heavy-ion collision using the q -Weibull distribution function*, Phys.Lett.B 871 (2025) 140005, (IF: 5.0)

Bharat Kumar Sirasva, Satyajit Jena & Rohit Gupta, *Study of density independent scattering angle and energy loss for low- to high- Z material using Muon Tomography*, arxiv: 2302.00447 [hep-ex]

Shubhangi Jain, Rohit Gupta & Satyajit Jena, *Study of isothermal compressibility and speed of sound in matter formed in heavy-ion collision using unified formalism*, Universe 9 (2023) 4, 170, (IF: 2.5)

Rohit Gupta, Anjaly Menon, Shubhangi Jain & Satyajit Jena, *The Theoretical Description of the Transverse Momentum Spectra: A Unified Model*, Universe 9 (2023) 2, 111, (IF: 2.5)

Rohit Gupta & Satyajit Jena, *A Unified Formalism to Study Soft as Well as Hard Part of the Transverse Momentum Spectra*, Springer Proc.Phys. 277 (2022) 469-472, Contribution to:24th DAE-BRNS High Energy Physics Symposium

Rohit Gupta & Satyajit Jena, *Model comparison of the transverse momentum spectra of charged hadrons produced in PbPb collision at $\sqrt{s_{NN}} = 5.02$ TeV*, Adv.High Energy Phys. 2022 (2022) 5482034, (IF: 1.0)

Rohit Gupta, Aman Singh Katariya & Satyajit Jena, *A unified formalism to study the pseudorapidity spectra in heavy-ion collision*, Eur.Phys.J.A 57 (2021) 7, 224, (IF: 3.0)

Satyajit Jena & Rohit Gupta, *A unified formalism to study transverse momentum spectra in heavy-ion collision*, Phys.Lett.B 807 (2020) 135551, (IF: 5.0)

Rohit Gupta & Satyajit Jena, *A generalized approach to study low as well as high p_T regime of transverse momentum spectra*, PoS ICHEP2020 (2021) 579, Contribution to:ICHEP2020