

Curriculum Vitae



Name: Dr. Gayatri Ghosh

Email: gayatrighsh@gmail.com

Qualification: MSc, PhD, GATE, SLET, UGC RFSMS, BSR- JRF and SRF fellow.

Area of interest: Neutrino Physics, Supersymmetry, Beyond Standard Model Physics, Flavor & Higgs Physics, Dark Matter Physics.

Awards And Honours:

1. Awarded **First Class First Position** in Merit List in B.Sc Honours in Physics by Assam University, Silchar, 2008.
2. Awarded **First Class Second Position in Merit List** in M.Sc Physics by Gauhati University, Gauhati, 2011.
3. Merit Prize awarded for securing **First Class Second position in M.Sc Physics by Physical Society GU** in 2011.
4. Awarded **Bisharath in Kathak Dance** by Lucknow University in 2008.
5. Received **second prize in inter state Kathak Dance Competition** in 2006.

6. Selected as **Assistant Professor in the department of Physics by governing body and interview committee of PDUAM Eraligool** in advertisement number **DHE/PDUAM/ERA/53/2017/pt/14** .

7. "Best Researcher Award" for "International Research Awards on High Energy Physics", for the **Contribution and Honourable Achievement in Innovative Research Given under seal of the company by Science Father, SciFax.**
8. "Editorial Board Member" for "International Conference on High Energy Physics".dated 25th April 2023.
9. Editorial board member of International Journal of High energy Physics, ISSN No: 2376-7405, Science Publishing Group.
- 10.Has been awarded with life time membership of American Association of Physics Teachers (AAPT), AAPT ID: 141518
- 11.Editor of Book Series titled , "Futuristic Trends in Physical Sciences." under IIP , Iterative International Publishers
- 12.Member of Organisation for women in science for the developing world, Triesty, Italy
- 13.Life time Membership of European Physical Society.
- 14.Awarded with Young Researcher award -2023 by InSc, Award ID: 4YRA73.
- 15.Invited Speaker in International Conference in "Physics and its Applications", in Los Angeles, CA, July 17-19 , 2023.

Teaching and Research Experience:

No	Name of the Post	Institution	From	To
1	Assistant Professor (Regular)	Cachar College, Assam University	1 st April 2024	Till date
2	Assistant Professor (Regular)	Pandit Deendayal Upadhaya Adarsha Mahavidyalaya College, Govt. of Assam, Assam University	02/03/2020	March 2024
2	Assistant Professor	Department of Physics, Barak Valley Engineering	01/04/2017	1/03/2020
3	Guest Faculty	Department of Physics, Assam University, Silchar	01/03/2015	30/4/2015
4	Guest Faculty	Department of Physics, Gurucharan College,	14/07/2016	05/10/2016
5	JRF, SRF (UGC) RFSMS-BSR Fellowship-DST	High Energy Physics Department, Gauhati University, Guwahati	15/03/2012	12/03/2017

6	Visiting PhD Student	Centre of High Energy Physics, Indian Institute of Science Bangalore	April 2014	May 2014
7	Visiting PhD Student	Indian Institute of Technology, Guwahati	March 2016	April 2016

Research Papers Published in National / International Journals:

1. Kalpana Bora, Gayatri Ghosh, Neutrino masses and mixings using updated values of running quark and lepton masses, **Journal of Physics. Con. Series 481 (2014) 012016, IOP, (UK).**
2. Gayatri Ghosh, Hints of Predictions of Leptonic δ_{CP} Phase from Octant Degeneracy at LBNEs, **International Journal of Scientific and Engineering Research, Vol 9, 2018(2018), Issue 1,ISSN 2229-5518, [IF:4.2].**
3. Gayatri Ghosh, Analytical Soft SUSY Spectrum in Supersymmetric Models in Light of $S_4 \times Z_n$ flavor symmetric SUSY SO(10) theory, arXiv:1908.11160. **Int.J.Innov.Res.Sci.Eng.Tech. 9 2020(2020), ISSN:2319-8753, [DOAJ, Directory of Open Access Journals], [IF: 7.089].**
4. KB, Gayatri Ghosh, Charged lepton flavor violation $\mu \rightarrow e\gamma$ in $\mu - \tau$ symmetric SUSY SO(10) mSUGRA, NUHM, NUGM, and NUSM theories and LHC, 16 pp, **Eur.Phys.J. C 75 (2015) no.9, 428, [SCOPUS, SCIENCE CITATION INDEXED], [IF: 4.843].**
5. KB, Gayatri Ghosh, DD, Octant Degeneracy, Quadrant of Leptonic CPV phase at LBNEs and Baryogenesis, **Adv. High Energy Physics, 9496758, 2016 (2016) [SCOPUS, SCIENCE CITATION INDEXED], [IF: 1.953].**
6. Gayatri Ghosh, KB, Effects of Leptonic Non Unitarity on Lepton Flavor Violation, Neutrino oscillation, Leptogenesis and Lightest Neutrino Mass, **Adv. High Energy Physics, 5093251, 2018 (2018) [SCOPUS,SCI], [IF: 1.953].**
7. Gayatri Ghosh, KB, LHC and Status Of Supersymmetry, **Horizon, Journal of Physics 3 117(2013), ISSN NO 2250-0821.**
8. Gayatri Ghosh, Significance of Broken $\mu-\tau$ Symmetry in correlating δ_{CP} , θ_{13} , Lightest Neutrino Mass and Neutrinoless Double Beta Decay $0\nu\beta\beta$, **Adv.High Energy Phys. 2021 (2021) 9563917 e-Print: 2004.03160 [hep-ph], [SCOPUS,SCI], [IF: 1.953].**
9. Gayatri Ghosh, Non-zero θ_{13} and δ_{CP} phase with A_4 flavor symmetry and deviations to tri-bi-maximal mixing via $Z_2 \times Z_2$ invariant perturbations in the neutrino sector, **Nucl. Phys. B 979 (2022) 115759, Jun, 2022, e-Print: 2106.12503 [hep-ph], DOI: 10.1016/j.nuclphysb.2022.115759, [SCOPUS,SCI], [IF: 2.759].**
10. Gayatri Ghosh, Majorana Neutrinos and Clockworked Yukawa Couplings contribution to non-observation of the rare leptonic decay $l_i \rightarrow l_j \gamma$, Clockwork Photon and Clockwork Graviton, Contribution to NuFact2022, e-Print: 2208.07867, **Letters in High energy Physics 2023 (2023) 351.**

11. Gayatri Ghosh, Probing new physics in rare decays of b-flavored Hadrons $b \rightarrow s\gamma$ in CMSSM/mSUGRA SUSY SO (10) theories, Gauhati University, Jalukbari, Assam, PAGE NO: 87-99, DOI:10.37897.GRJ.2021.V7I11.21.49884, **Gradiva Review Journal**, Scopus Indexed, ISSN: 0363-8057, IF:6.1
12. Gayatri Ghosh, Leptonic Rare Decay and Mini-Split SUSY, **GIS Science Journal**, ISSN:1869-9391, Scopus Indexed, IF: 6.1, <http://www.gisscience.net/VOLUME-9-ISSUE-7-2022/>.
13. Gayatri Ghosh, Probing Δ_{CP} Phase And Charged Lepton Flavour Violation With A4 Flavor Symmetry And Deviations To Tri-bi-maximal Mixing Via $Z_2 \times Z_2$ Invariant Perturbation In The Neutrino Sector. Page No: 97-106, DOI:10.37896/JEISMV12.10/136, **Journal of Electronics Information Technology Science and Management**, Scopus And Ugc Care Group 2 Journal (ISSN:0258-7982).
14. Gayatri Ghosh, **Indian Journal of Science and Technology**, DOI: 10.17485/IJST/v13i34.643. Non-Unitarity in Neutrino mixing matrix and two and three flavored non resonant Leptogenesis from CP violation , Year: 2020, Volume: 13, Issue: 34, Pages: 3572-3585, , Web of Science.
15. Gayatri Ghosh, Probing δ_{CP} phase and Charged Lepton Flavour Violation with A_4 Flavor Symmetry and Deviations to Tri-Bi-Maximal mixing via $z_2 \times z_2$ invariant perturbation in the Neutrino, **SciPost Physics, Proceedings Proceedings issue:16th International Workshop on Tau Lepton Physics (TAU2021)**.
16. Gayatri Ghosh, Resonant Leptogenesis, an analysis on lepton asymmetry generation, **Journal for Basic Sciences**, Volume 23 (5) 2023. 1077-1079, scopus indexed, doi: 10.37896/JBSV23.5/2179. ISSN No: 1006-8341.
17. Gayatri Ghosh, Indian Journal Of Physics (2024), arXiv: 2307.09948
18. Annihilation of NMSSM neutralinos and Branching Ratios, Particle Decay Channel of lightest CP odd, even Higgs in NMSSM, Gayatri Ghosh, is in private communication,

Book Chapters or Book Published

1. **Aspects of Lepton Masses, Mixings and Flavor Violation in Supersymmetric Theories**, by DR. Gayatri Ghosh, **GRIN publishers, Germany**.
2. Gayatri Ghosh, cLFV, LHC and Mini Split SUSY, **NSFRPS, 2014(2014),172-179, ISBN: 978-81-931268-06**.

4. Gayatri Ghosh, KB, Resolving Entanglement of CPV Phase with octant of θ_{23} , and Leptogenesis, [Springer], **Springer Proc. Phys, 174,287-291, (2016), ISBN:9783319256177.**
5. Gayatri Ghosh, KB, Effects of Leptonic Non Unitarity on Lepton Flavor Violation, Neutrino oscillation, Leptogenesis and Lightest Neutrino Mass, [Springer], **Springer Proc. Phys, 203 (2018), ISBN:9783319731711.**
6. Gayatri Ghosh, Probing Non Unitarity of Neutrino Mixing Matrix on Lepton Flavour Violation, Leptogenesis and Neutrino Oscillation Probability, **ISBN: 978-93-90768-98-1, eBook ISBN: 978-93-90768-99-8, New Insights into physical Science , Volume 13.**
7. **Probing θ_{13} with A_4 Flavour Symmetry, Gayatri Ghosh, Current Perspective in Physical Science Research, Volume 8, ISBN-978-81-971665-2-5, United Kingdom.**

Papers Presented in International/National Seminar

1. Participated in the Poster competition held at the department of Physics, Gauhati University in the foundation day celebration. 21st February 2011.
2. Presented a paper entitled “, Octant Degeneracy, Quadrant of Leptonic CPV phase at LBNEs and Baryogenesis” in Simplicity II, Fermilab, USA, September, 2016.
3. Presented a poster in the „One Day UGC-SAP National Seminar on New Frontiers in Physics”, 11th May, 2012, entitled. “Neutrino Masses with updated Values Of Running Fermion Masses in SO(10) GUTs”. Gauhati University.
4. Presented a paper entitled “Neutrino Masses and mixings in SO(10) GUTs using updated values of running quark and lepton masses “ in NCHEPC-2013, Gauhati University.
5. Participated in “National Seminar On Frontiers in science and Technology” in Assam Science Society, 8-9 March, 2013.
6. Participated in “57th Annual Technical Session” in 16th March 2012 in Assam Science Society, Gauhati University.
7. Participated in the SERC Preparatory School, Theoretical High Energy Physics (DST) in Tezpur University .
8. Presented a paper entitled “ Lepton Flavor Violation in SUSY SO(10) theories, in the light of recent LHC results on Higgs” in the International workshop on Unification and cosmology after Higgs discovery and BICEP. 13-15th May, 2014, Panjab University.
9. Presented a paper entitled “Updated Limits On Lepton Flavor Violation In Supersymmetric Theories” in Current Trends In Particle Physics Research, Kalyani University, 2014 (March 13-15, 2014).

10. Presented a paper “LHC and Status Of SUSY” on the National Seminar on “Frontiers Of Research in Physical Sciences from 19-21 september, 2014, at Karimganj College.
11. Presented a talk titled “ CP violation and Leptogenesis” in Grand Unified Theories in XXI DAE BRNS in High Energy Physics Symposium 2014, IIT Guwahati, 8-12 Dec.
12. Participated in Winter school on Gravitation and Cosmology Jan 5-11,2015, Assam University.
13. Presented a paper entitled ” Octant Degeneracy, CPV Phase and Baryogenesis” in CICAHEP 2015, 2-5 Nov, Dibrugarh University
14. Presented a paper titled “Effects of Leptonic non unitarity on Lepton Flavor Violation” in XXII DAE BRNS HEP Symposium, 12-16 Dec, 2016, Delhi University.
15. Presented a paper entitled “Effects of leptonic Non Unitarity on Leptogenesis” in FRPS, 19-21 Jan, 2018, Karimganj College.
16. Participated and presented on the topic of ”Clockwork Fermions Contribution to neutrino mass generation and Charged Lepton Flavour Violation $l_i \rightarrow l_j \gamma$ ” at The 23rd International Workshop on Neutrinos from Accelerators. August 1 –6, 2022 at Snowbird Resort in Salt Lake City, Utah, USA. 23rd International Workshop on Neutrinos from Accelerators.
17. Participated in the 16th International Workshop on Tau Lepton Physics (TAU2021), September 27-October 1, 2021, organized by Indiana University. and presented a Paper on October 1 on “Non zero θ_{13} and δ_{CP} in a realistic neutrino mass model with discrete A_4 family symmetry and perturbation to Tri-bimaximal mixing via $Z_2 \times Z_2$ invariant perturbation in the neutrino sector.” Full program details are <https://indico.cern.ch/event/848732/timetable/#20211001>, Indiana University. Illinois, US
18. Participated in Sixth Lecture Workshop, ‘Randomness in number theory and dynamics’ in Deendayal Upadhyaya College, University of Delhi, January 03-February 02 2022.
19. Presented a paper “Non-zero θ_{13} and δ_{CP} phase with A_4 flavor symmetry and deviations to tri-bi-maximal mixing via $Z_2 \times Z_2$ invariant perturbations in the neutrino sector” in International Conference in Systems and Processes in Physics, Chemistry and Biology , ICSPPCB-23, Assam University, 2-4 March 2023.

Refreshers Course:

1. Did two week refreshers course in Physics from 10-24 April 2022 and obtained A+ in Teaching Learning Centre, Ramanujan College, University of Delhi.
2. Successfully completed a 4 week online Orientation programme for Faculties in Universities from 17-16 October 2021 and obtained Grade A in Teaching Learning Centre, Ramanujan College, University of Delhi.
3. Did 2 week refresher course in Physics from 30 March -12 April 2024 and obtained Grade A+ from Ramanujan College, Delhi University
4. Successfully completed four week faculty program from 21 Feb - 19 March 2024 from Ramanujan College Delhi University and obtained Grade A.

Subjects teaching at degree level

1. Electromagnetic theory (BSc, 6th Semester)
2. Elements of Modern Physics, (BSc, 4th semester)
3. Astronomy and Astrophysics, (BSc, 6th semester)
4. Thermal Physics (BSc, 3rd Semester)
5. Classical Dynamics, (BSc, 5th semester)
6. Electrical Circuits and Networks (BSc, 4th semester)
7. Thermal Physics and Statistical Mechanics (BSc, 3rd Semester)

Additional Work

- 1. Dissertation/ UG Project Students Guided**
- 2. Reviewer of International Journal Papers.**
- 3. Editor of book named Futuristics Trends in Physical Sciences, IIP Publishers**

