DR. TAYYAB NASEER

PERMANENT ADDRESS

House 102, Sami Block, Tariq Garden, Renala Khurd, Okara.

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HOBBIES

Reading
Badminton
Internet surfing

COMPUTER AND SOFTWARE SKILLS

LaTex
Maple
MS Word
MS Excel
Mathematica
MS Power Point

EDUCATION

[Matriculation]
[2010] – [2012]
Marks 966/1050 **(92%)**
BISE Lahore

[Intermediate]
[2012] – [2014]
Marks 955/1100 **(87%)**
BISE Sahiwal

[Bachelor of Science in Mathematics]
[2014] – [2018]
C.G.P.A. **3.88/4.00**
University of the Punjab, Lahore

[M.Phil. in Mathematics]
[2018] – [2020]
C.G.P.A. **4.00/4.00**
University of the Punjab, Lahore

[Ph.D. in Mathematics]
[2020] – [2024]
Course Work C.G.P.A. **3.95/4.00**
Comprehensive C.G.P.A. **4.00/4.00**
University of the Punjab, Lahore
Title of Thesis
Structural Evolution of Self-gravitating Celestial Objects in Non-minimally Coupled Gravity
Supervisor
Prof. Dr. Muhammad Sharif
Ex-Dean Faculty of Science, University of the Punjab, Lahore
Ex-Head of Department of Mathematics, University of the Punjab, Lahore
Head of Department of Mathematics and Statistics, The University of Lahore

FIELDS OF INTEREST

- Geometry
- General Theory of Relativity
- Modified Gravitational Theories
- Mathematical Physics
- Astrophysics and Cosmology

RESEARCH SUMMARY

- Total Research Papers in Impact Factor Journals: 53
- Cumulative Impact Factor: 196.6
- Cumulative Citations: 1030+
- h-index: 20
- i10-index: 32

LIST OF JOURNAL PUBLICATIONS

1. Study of Static Charged Spherical Structure in $f(R,T,Q)$ Gravity,
   The European Physical Journal Plus **135**(2020)323 **(Springer)**.
2. New Definition of Complexity Factor in $f(R,T,R_{\mu\nu}\,T^{\mu\nu})$ Gravity,
   Physics of the Dark Universe **28**(2020)100535 **(Elsevier)**.
3. The Measure of Complexity in Charged Celestial Bodies in $f(R,T,R_{\mu\nu}\,T^{\mu\nu})$ Gravity,
   Physics of the Dark Universe **29**(2020)100581 **(Elsevier)**.
4. Measure of Complexity for Dynamical Self-gravitating Structures,
   International Journal of Modern Physics D **29**(2020)2050061 **(World Scientific)**.
5. Influence of Modification of Gravity on the complexity Factor of Static Spherical Structures,
   Monthly Notices of the Royal Astronomical Society **495**(2020)4334-4346 **(Oxford University Press)**.
6. Evolution of Charged Dynamical Radiating Spherical Structures,
   Annals of Physics **420**(2020)168267 **(Elsevier)**.
7. Effects of $f(R,T,R_{\gamma\upsilon}\,T^{\gamma\upsilon})$Gravity on Anisotropic Charged Compact Structures,
   Chinese Journal of Physics **73**(2021)179-194 **(Elsevier)**.
8. Study of Decoupled Anisotropic Solutions in $f(R,T,R_{\rho\eta}\,T^{\rho\eta})$ Theory,
   Universe **8**(2022)62 **(MDPI)**.
9. Study of Anisotropic Compact Stars in $f(R,T,R_{\chi\xi}\,T^{\chi\xi})$ Gravity,
   Pramana – Journal of Physics **96**(2022)119 **(Springer)**.
10. Influence of Charge on Extended Decoupled Anisotropic Solutions in $f(R,T,R_{\lambda\xi}\,T^{\lambda\xi})$ Gravity,
    Indian Journal of Physics **96**(2022)4373-4390 **(Springer)**.
11. Effects of Non-minimal Matter-geometry Coupling on Embedding Class-one Anisotropic Solutions,
    Physica Scripta **97**(2022)055004 **(IOP, UK)**.

12. Complexity of Dynamical Dissipative Cylindrical System in Non-minimally Coupled Theory,
    Chinese Journal of Physics **77**(2022)2655-2667 **(Elsevier)**.
13. Extended Decoupled Anisotropic Solutions in $f(R, T, R_{\gamma\chi} T^{\gamma\chi})$ Gravity,
    International Journal of Modern Physics D **31**(2022)2240017 **(World Scientific)**.
14. Complexity Analysis of Charged Dynamical Dissipative Cylindrical Structure in Modified Gravity,
    The European Physical Journal Plus **137**(2022)947 **(Springer)**.
15. Influence of Charge on Anisotropic Class-one Solution in Non-minimally Coupled Gravity,
    Physica Scripta **97**(2022)125016 **(IOP, UK)**.
16. Charged Anisotropic Spherical Collapse in $f(R, T, Q)$ Gravity,
    Chinese Journal of Physics **81**(2023)37-50 **(Elsevier)**.
17. Isotropization and Complexity Analysis of Decoupled Solutions in $f(R, T)$ Theory,
    The European Physical Journal Plus **137**(2022)1304 **(Springer)**.
18. Study of Charged Compact Stars in Non-minimal Coupled Gravity,
    Fortschritte der Physik – Progress of Physics **71**(2023)2200147 **(Wiley-VCH Verlag)**.
19. Effect of Extended Gravitational Decoupling on Isotropization and Complexity in $f(R, T)$ Theory,
    Classical and Quantum Gravity **40**(2023)035009 **(IOP, UK)**.
20. Influence of $f(R, T, Q)$ Gravity on Cylindrical Collapse,
    Indian Journal of Physics **97**(2023)2853-2863 **(Springer)**.
21. Study of Decoupled Cosmological Solutions in $f(R, T)$ Theory,
    Fortschritte der Physik – Progress of Physics **71**(2023)2300004 **(Wiley-VCH Verlag)**.
22. Charged Anisotropic Models with Complexity-free Condition,
    Annals of Physics **453**(2023)169311 **(Elsevier)**.
23. Study of Charged Cylindrical Collapse in $f(R, T, Q)$ Gravity,
    Chinese Journal of Physics **85**(2023)41-53 **(Elsevier)**.
24. Cosmological Solutions through Gravitational Decoupling in $f(R, T, R_{ab}T^{ab})$ Gravity,
    General Relativity and Gravitation **55**(2023)87 **(Springer)**.
25. Effects of Charge and Gravitational Decoupling on Complexity and Isotropization of Anisotropic Models,
    Physics of the Dark Universe **42**(2023)101324 **(Elsevier)**.
26. Charged Anisotropic Tolman IV Solution in Matter-Geometry Coupled Theory,
    Physica Scripta **98**(2023)105009 **(IOP, UK)**.
27. Impact of Charge on Complexity Analysis and Isotropic Decoupled Solutions in $f(R, T)$ Gravity,
    Physica Scripta **98**(2023)115012 **(IOP, UK)**.
28. Anisotropic Complexity-free Models in Modified $f(R, T)$ Theory,
    Annals of Physics **459**(2023)169527 **(Elsevier)**.
29. Constructing Traversable Wormhole Solutions in $f(R, L_m)$ Theory,
    Chinese Journal of Physics **86**(2023)350-360 **(Elsevier)**.
30. Charge Effect on Isotropization and Complexity of Extended Decoupled Anisotropic Stellar Models,
    Chinese Journal of Physics **86**(2023)596-615 **(Elsevier)**.
31. Estimating the Role of Bag Constant and Modified Theory on Anisotropic Stellar Models,
    Chinese Journal of Physics **88**(2024)10-31 **(Elsevier)**.
32. Study of Complexity and Isotropization of Extended Decoupled Charged Solutions in $f(R, T)$ Gravity,
    The European Physical Journal Plus **139**(2024)86 **(Springer)**.

33. Decoupled Anisotropic Buchdahl's Relativistic Models in $f(R,T)$ Theory,
Physica Scripta **99**(2024)035001 **(IOP, UK)**.
34. Anisotropic Stellar Models with Tolman IV Spacetime in Non-minimally Coupled Theory,
Pramana – Journal of Physics **98**(2024)25 **(Springer)**.
35. Extending Anisotropic Interiors admitting Vanishing Complexity in Charged $f(R,T)$ Theory,
Fortschritte der Physik – Progress of Physics (2024)2300254 **(Wiley-VCH Verlag)**.
36. Charged Stellar Models possessing Anisotropic Interiors,
The European Physical Journal Plus **139**(2024)296 **(Springer)**.
37. Anisotropic Durgapal-Fuloria Neutron Stars in $f(R,T^2)$ Gravity,
Modern Physics Letters A **39**(2024)2450048 **(World Scientific)**.
38. A Brief Analysis of Isotropic Karmarkar Models in Modified Gravity Theory,
Chinese Journal of Physics **90**(2024)372-386 **(Elsevier)**.
39. Implications of Vanishing Complexity Condition in $f(R)$ Theory,
The European Physical Journal C **84**(2024)554 **(Springer)**.
40. Extending Finch-Skea Isotropic Model to Anisotropic Domain in Modified $f(R,T)$ Gravity,
Physica Scripta **99**(2024)075012 **(IOP, UK)**.
41. Anisotropic Extensions of Isotropic Finch-Skea Metric in the Charged Modified Gravity,
Communications in Theoretical Physics **76**(2024)095407 **(IOP, UK)**.
42. Analysis of Some Newly Constructed Compact Models in $f(R,T)$ Theory,
Physica Scripta **99**(2024)085034 **(IOP, UK)**.
43. Investigating Physical Existence of Charged Stellar Models,
Chinese Journal of Physics **91**(2024)299-315 **(Elsevier)**.
44. Charged Anisotropic Starobinsky Models admitting Vanishing Complexity,
Physics of the Dark Universe **46**(2024)101595 **(Elsevier)**.
45. Analyzing the Quantum Corrected AdS Spherically Symmetric Black Holes with Phantom Global Monopoles for Thermal Properties,
International Journal of Geometric Methods in Modern Physics (2024)2450302 **(World Scientific)**.
46. Existence of Non-singular Stellar Solutions within the context of Electromagnetic Field: A Comparison between Minimal and Non-minimal Gravity Models,
The European Physical Journal C **84**(2024)808 **(Springer)**.
47. Impact of Charge and Non-minimal Fluid-Geometry Coupling on Anisotropic Interiors,
Physica Scripta **99**(2024)095028 **(IOP, UK)**.
48. Applicability of Modified Gauss-Bonnet Gravity Models on the Existence of Stellar Structures,
Chinese Journal of Physics **91**(2024)916-931 **(Elsevier)**.
49. Particle Dynamics with Trajectories and Epicyclic Oscillations around a Piece-wise Black Hole immersed in Dark Matter,
Journal of High Energy Astrophysics **44**(2024)99-115 **(Elsevier)**.
50. Role of Rastall Gravity in Constructing New Spherically Symmetric Stellar Solutions,
Physics of the Dark Universe **46**(2024)101663 **(Elsevier)**.
51. Study of Gravastar admitting Tolman IV Spacetime in Rastall Theory,
Chinese Journal of Physics **92**(2024) 579-592 **(Elsevier)**.
52. Existence of Traversable Wormholes in the Minimally Coupled Gravity Model,
International Journal of Geometric Methods in Modern Physics (2024)2440043 **(World Scientific)**.
53. On the Evaluation of Accretion Process near a Quantum-improved Charged Black Hole,
Journal of High Energy Astrophysics **44**(2024)279-289 **(Elsevier)**.

AWARDS, SCHOLARSHIPS, AND HONORS

1. Awarded **Gold Medal** in Intermediate, BISE Sahiwal.
2. **Merit Scholarship** in Intermediate by Punjab Colleges, Okara.
3. **Merit Scholarship** in BS Mathematics by Department of Mathematics, University of the Punjab, Lahore.
4. Awarded **Laptop** under Prime Minister Laptop Scheme.
5. **2nd position** in BS Mathematics, University of the Punjab, Lahore.
6. **1st position** in M.Phil. Mathematics Entry Test, University of the Punjab, Lahore.
7. Awarded **Gold Medal** in M.Phil. Mathematics, University of the Punjab, Lahore.
8. **1st position** in Ph.D. Mathematics Entry Test, University of the Punjab, Lahore.
9. **Research Award 2022** by The University of Lahore, Lahore.

REVIEWER OF THE FOLLOWING JOURNALS

1. Physics of the Dark Universe
2. Classical and Quantum Gravity
3. Physica Scripta
4. Chinese Physics C
5. Journal of Physics: Complexity

SUPERVISED AND IN PROGRESS MS/M.PHIL. THESES

1. **Name:** Ms. Mona Faiza
   Thesis Title: In Progress
   Session: 2023-2025
   Institution: The University of Lahore, Lahore
2. **Name:** Ms. Fatima Chand
   Thesis Title: In Progress
   Session: 2023-2025
   Institution: The University of Lahore, Lahore

PROFESSIONAL EXPERIENCE

1. **Assistant Professor,** Department of Mathematics and Statistics, The University of Lahore, Lahore (July 18, 2024 - present).
2. **Lecturer,** Department of Mathematics and Statistics, The University of Lahore, Lahore (August 23, 2022 – July 17, 2024).
3. **Research Assistant,** Department of Mathematics, University of the Punjab, Lahore (October 2019 - June 2020).

ADMINISTRATIVE EXPERIENCE

1. **Member** of Departmental Research Committee, Department of Mathematics and Statistics, The University of Lahore, Lahore (September 2024 – present).
2. **Coordinator** of M.Phil./Ph.D. Program, Department of Mathematics and Statistics, The University of Lahore, Lahore (August 2024 – present).
3. **Secretary** of the International Conference on Gravitation and Cosmology, The University of Lahore, Lahore (January 29-31, 2024).
4. **Coordinator** of Weekly Departmental Seminar Series, Department of Mathematics and Statistics, The University of Lahore, Lahore (August 2023 – August 2024).

PH.D./M.PHIL./BS COURSES TAUGHT

1. Riemannian Geometry
2. Special Theory of Relativity
3. Electromagnetic Theory-I
4. Operations Research-I
5. Operations Research-II
6. Differential Geometry

WORKSHOPS, CONFERENCES, AND SEMINARS ATTENDED AT NATIONAL/INTERNATIONAL LEVEL

1. International Conference on Relativistic Astrophysics, February 10-14, 2015 by Department of Mathematics, University of the Punjab, Lahore.
2. 1st PU International Conference on Gravitation and Cosmology, January 27-31, 2019 by Department of Mathematics, University of the Punjab, Lahore.
3. 6th UMT International Conference on Pure and Applied Mathematics, February 21-23, 2020 by Centre for Mathematics and its Applications, University of Management and Technology, Lahore.
4. 4th PU International Conference on Gravitation and Cosmology, November 22-25, 2021 by Department of Mathematics, University of the Punjab, Lahore.
5. Training Session on Classroom Management, February 14, 2023, The University of Lahore, Lahore.
6. International Conference on Gravitation and Cosmology, January 29-31, 2024 by Department of Mathematics and Statistics, The University of Lahore, Lahore.
7. International Conference on Relativistic Astrophysics and Cosmology, February 01-02, 2024 by Department of Mathematics, COMSATS University Islamabad, Lahore Campus.
8. International Symposium on Extended Theory of Gravity and Stellar Evolution, May 20, 2024 by School of Science, University of Management and Technology, Lahore.

TALKS DELIVERED AT NATIONAL/INTERNATIONAL LEVEL

1. *Effects of $f(R, T, R_{\alpha\beta} T^{\alpha\beta})$ Gravity on Anisotropic Charged Compact Structures* at Department of Mathematics, University of the Punjab, Lahore (December 01, 2021).
2. *Influence of Non-minimal Matter-geometry Coupling on Anisotropic Compact Structures* at Department of Mathematics, University of the Punjab, Lahore (April 13, 2022).

3. *Isotropization and Complexity Analysis of Decoupled Solutions in $f(R,T)$ Theory* at Department of Mathematics, University of the Punjab, Lahore (March 01, 2023).
4. *Constructing Anisotropic Models through Gravitational Decoupling* at International Conference of Gravitation and Cosmology 2024, The University of Lahore, Lahore (January 30, 2024).

PROJECTS

[Thesis of M.Phil.]
"Effects of $f(R,T,Q)$ Gravity on Complexity Factor for Relativistic Matter".

[Research Project]
8754/Punjab/NRPU/R&D/HEC/2017 entitled "Existence of Celestial Structures in Galaxies".

REFERENCE

Prof. Dr. Muhammad Sharif
Ex-Dean Faculty of Science, University of the Punjab, Lahore
Ex-Chairman of Department of Mathematics, University of the Punjab, Lahore
Head of Department of Mathematics and Statistics, The University of Lahore, Lahore
Tel: +92 (333) 4231696
Email: msharif.math@pu.edu.pk

Prof. Dr. Muhammad Akram
Dean Faculty of Science, University of the Punjab, Lahore
Chairman of Department of Mathematics, University of the Punjab, Lahore
Tel: +92 (333) 4510258
Email: m.akram@pucit.edu.pk