CURRICULUM VITAE

NAME:	**Arfa Waseem**
FATHER'S NAME:	Muhammad Waseem
DATE OF BIRTH:	September 25, 1991
NATIONALITY:	Pakistani
LANGUAGES:	English, Urdu, Punjabi
PERMANENT ADDRESS:	Street no, 4, house no. 5, Khokherke Sialkot road, Gujranwala, Pakistan.
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EDUCATION

PhD (Mathematics)	University of the Punjab, Lahore (**2016-2029**)
	Course Work (3.78/4.00)
	Comprehensive (4.00/4.00)
PhD Thesis Title	Study of Stellar Structures and Stability Analysis in Modified Gravity.
PhD Supervisor	Prof. Dr. Muhammad Sharif, Ex-Dean, Faculty of Sciences, University of the Punjab, Lahore.
MPhil (Mathematics)	University of the Punjab, Lahore (**2014-2016**) (3.77/4.00)
MPhil Thesis Title	Some Features of Compact Stars in $f(R,T,R_{\mu\nu}T^{\mu\nu})$ Gravity.
MPhil Supervisor:	Prof. Dr. Muhammad Sharif, Chairman, Department of Mathematics, University of the Punjab, Lahore.
MSc (Mathematics)	University of the Punjab, Lahore (**2011-2013**) (948/1200)
BSc (Maths A&B, Phys.)	University of the Punjab (**2009-2011**) **2nd position** (677/800)
FSc (Pre-Eng)	BISE Gujranwala (**2007-2009**) (917/1100)
Matriculation (Science)	BISE Gujranwala (**2005-2007**) (765/850)

Field of Interest

- ➢ Gravitational Theories
- ➢ Astrophysics
- ➢ Cosmology
- ➢ Dynamical Systems

EXPERIENCE

A. ACADEMIC EXPERIENCE:

Dec. 2021 – to date	**Lecturer**, Department of Mathematics, GC Women University, Sialkot.
Mar 2020 – Dec 2021	**Visiting Assistant Professor** of Mathematics, University of the Punjab, Gujranwala.
Mar 2019 – Mar 2020	**Visiting Assistant Professor** of Mathematics, Institute of Chemistry, University of the Punjab, Lahore.
Mar 2019 – Mar 2020	**Visiting Assistant Professor** of Mathematics, Department of Mathematics, University of Education, Bank road campus, Lahore.

B. ADMINISTRATIVE EXPERIENCE

Dec. 2021 – to date	Focal Person of MS and Ph.D. Admission Programs

C. COMPUTER EXPERIENCE:

- ➢ MS Office
- ➢ LaTex
- ➢ Mathematica
- ➢ Maple

D. ONLINE CLASSES EXPERIENCE:

- ➢ Google Classroom
- ➢ LMS
- ➢ Zoom Meeting
- ➢ Google Meet

SEMINARS & CONFERENCES ATTENDED

1. **Weekly Departmental Seminar Series** held at Department of Mathematics,

University of the Punjab, Lahore, since 2015.

2. **Second International Workshop on Modern Aspects of Algebra and Graph Theory** held at COMSATS, Lahore, November 02-03, 2016.
3. **Workshop on Relativistic Astrophysics and Cosmology** held at COMSATS Institute of Information Technology, Lahore, November 24-25, 2016.
4. **One Day Conference on Gravitation and Cosmology** held at Department of Mathematics, University of Punjab, Lahore, November 26, 2016.
5. **Symposium on Recent Developments in Theoretical Physics** held at Abdus Salam School of Mathematical Sciences, Lahore, November 22, 2017.
6. **Sixth Italian-Pakistani Workshop on Relativistic Astrophysics** held at NUST, Islamabad, January 24, 2019.
7. **1st PU International Conference on Gravitation and Cosmology** (*member of organizing committee*) held at University of the Punjab, Lahore, January 27-31, 2019.
8. **4th PU International Conference on Gravitation and Cosmology** held at University of the Punjab, Lahore, November 22-25, 2021.
9. **7th UMT International Conference on Pure and Applied Mathematics (7th UICPAM-2023)** held at UMT, Lahore on December 4-5, 2023.
10. **2nd International Conference on Recent Advances in Mathematics (CORAM-2023)** held at University of Education, Township campus, Lahore on December 4-5, 2023.
11. **International Conference on Gravitation and Cosmology (ICGC24)** held at University of Lahore, Lahore, on January 29-31, 2024.

DELIVERED PRESENTATIONS

1. **Formation of Compact Stars in $f(R, T, R_{\mu v}T^{\mu v})$ Gravity** in the *Weekly Departmental Seminar Series* on March 16, 2016 at Department of Mathematics, University of the Punjab, Lahore.
2. **Some Features of Compact Stars in $f(R, T, R_{\mu v}T^{\mu v})$ Gravity** on June 20, 2016 at Department of Mathematics, University of the Punjab, Lahore.
3. **Stability of Einstein Universe in General Relativity and Modified Theories** in the *Weekly Departmental Seminar Series* on April 18, 2018 at Department of Mathematics, University of the Punjab, Lahore.
4. **Stellar Evolution of Compact Stars in Matter-Curvature Coupling Gravity** in the *Weekly Departmental Seminar Series* on October 31, 2018 at Department of Mathematics, University of the Punjab, Lahore.
5. **Study of Compact Objects in Modified Gravity** in *Sixth Italian-Pakistani Workshop on Relativistic Astrophysics* on January 24, 2019 at NUST, Islamabad.
6. **Study of Stellar Structures in Curvature–Matter Coupling Gravity** in *1st PU International Conference on Gravitation and Cosmology* on January 30, 2019 at University of the Punjab, Lahore.
7. **Study of Quark Stars in $f(R,T)$ Gravity** in the *Weekly Departmental Seminar Series* on May 22, 2019 at Department of Mathematics, University of the Punjab, Lahore.
8. **Study of Stellar Structures and Stability Analysis in Modified Gravity** on November 29, 2019 at Department of Mathematics, University of the Punjab, Lahore.
9. **Some Aspects of Compact Objects in Rastall Gravity** in International Conference on Gravitation and Cosmology (ICGC24) on January 29, 2024 at University of

Dr. Arfa Waseem

Lahore, Lahore.
LIST OF PUBLICATIONS
Complete list of research papers can be seen at the following Google Scholar link
https://scholar.google.com/citations?user=aIcw_f8AAAAJ&hl=en

1. Muhammad Sharif and **Arfa Waseem.**: *Study of Isotropic Compact Stars in f(R,T,R$_{\mu\nu}$T$^{\mu\nu}$) Gravity,* Eur. Phys. J. Plus **131** (2016) 190 (Springer) [**CoAuthor, I.F. 1.521**].

2. Muhammad Sharif and **Arfa Waseem.**:*Physical Behavior of Anisotropic Compact Stars in f(R,T,R$_{\mu\nu}$T$^{\mu\nu}$) Gravity,* Can. J. Phys. **94** (2016)1024 (NRC Research Press)[**CoAuthor, I.F. 0.877**].

3. Muhammad Sharif and **Arfa Waseem.**: *Spherical Dust Solution in f(R,T,R$_{\mu\nu}$T$^{\mu\nu}$) Gravity,* Eur. Phys. J. Plus **133** (2018) 136 (Springer)[**CoAuthor, I.F. 2.24**].

4. Muhammad Sharif and **Arfa Waseem.**: *On the Stability of Einstein Universe in f(R,T,R$_{\mu\nu}$T$^{\mu\nu}$) Gravity,* Mod. Phys. Lett. A **33** (2018) 1850216 (World Scientific)[**CoAuthor, I.F. 1.308**].

5. Muhammad Sharif and **Arfa Waseem**.: *Stability of Einstein Universe Against Inhomogeneous Perturbations in f(R,T,R$_{\mu\nu}$T$^{\mu\nu}$) Gravity,* Eur. Phys. J. Plus **133** (2018) 160 (Springer) [**CoAuthor, I.F. 2.24**].

6. Muhammad Sharif and **Arfa Waseem**.: *Effects of Charge on Dynamical Instability of Spherical Collapse in f(R,T) Gravity,* Gen. Relativ. Gravit. **50** (2018) 78 (Springer)[**CoAuthor, I.F. 1.721**].

7. Muhammad Sharif and **Arfa Waseem**.: *Role of σR^2+ϒR$_{\mu\nu}$T$^{\mu\nu}$ Model on Anisotropic Polytropes,* Int. J. Mod. Phys. D **27** (2018) 1950007 (World Scientific)[**CoAuthor, I.F. 2.171**].

8. Muhammad Sharif and **Arfa Waseem**.: *Anisotropic Quark Stars in f(R,T) Gravity,* Eur. Phys. J. C **78** (2018) 868 (Springer)[**CoAuthor, I.F. 5.25**].

9. Muhammad Sharif and **Arfa Waseem**.: *Stellar Evolution of Compact Stars in Curvature-Matter Coupling Gravity,* Prog. Theor. Exp. Phys. **2019** (2019) 053E02 (Oxford University Press)[**CoAuthor, I.F. 2.091**].

10. Muhammad Sharif and **Arfa Waseem**.:*Charged Compact Objects in f(R,T) Gravity,* Int. J. Mod. Phys. D **28** (2019) 1950033 (World Scientific)[**CoAuthor, I.F. 2.004**].

11. Muhammad Sharif and **Arfa Waseem**.: *Anisotropic Spherical Solutions by Gravitational Decoupling in f(R) Gravity,* Ann. Phys. **405** (2019) 14 (Elsevier)[**CoAuthor, I.F. 2.083**].

12. Muhammad Sharif and **Arfa Waseem**.: *Effects of Charge on Gravitational Decoupled Anisotropic Solutions in f(R) Gravity,* Chin. J. Phys. **60** (2019) 426 (Elsevier)[**CoAuthor, I.F. 2.544**].

13. Muhammad Sharif and **Arfa Waseem**.: *Charged Gravastars with Conformal Motion in f(R,T) Gravity,* Astrophys. Space Sci. **364** (2019) 189 (Springer)[**CoAuthor, I.F. 1.43**].

14. Muhammad Sharif and **Arfa Waseem**.: *Inhomogeneous Perturbations and Stability Analysis of the Einstein Static Universe in f(R,T) Gravity,* Astrophys. Space Sci. **364** (2019) 221 (Springer) [**CoAuthor, I.F. 1.43**].

15. **Arfa Waseem** and Muhammad Sharif.: *Study of Some Compact Objects in R+2βT Gravity,* Int. J. Mod. Phys. D **28** (2019) 2040005(World Scientific) [**First Author, I.F. 2.004**]

16. Muhammad Sharif and **Arfa Waseem**.: *Role of Curvature-Matter Coupling on Anisotropic Strange Stars*, Chin. J. Phys. **63** (2020) 92 (Elsevier)[**CoAuthor, I.F. 2.638**].

17. Muhammad Sharif and **Arfa Waseem**.: Impact of Kuchowicz metric function on gravastars in *f(R, T)* theory, Eur. Phys. J. Plus **135** (2020) 930 (Springer)[**CoAuthor, I.F. 3.228**].

18. Qanitah Ama-Tul-Mughani, **Arfa Waseem**, Wardat-us-Salam and Abdul Jawad.: Greybody factor and thermal fluctuations of rotating regular black hole bounded by PFDM, Chin. J. Phys. **77** (2022) 2213 (Elsevier)[**CoAuthor, I.F. 3.957**].

19. Qanitah Ama-Tul-Mughani, **Arfa Waseem** and Wardat-us-Salam.: Phase transition and quantum corrections of quintessential Kerr–Newman black hole with cloud of strings, Chin. J. Phys. **79** (2022) 306 (Elsevier)[**CoAuthor, I.F. 3.957**].

20. Muhammad Sharif and **Arfa Waseem**.: Stability of Einstein universe in matter-curvature coupling gravity, The Fifteenth Marcel Grossmann Meeting: On Recent Developments in Theoretical and Experimental General Relativity, Astrophysics, and Relativistic Field Theories (In 3 Volumes) (2022) 465[**CoAuthor**].

21. Aisha Siddiqa, Ghulam Abbas, **Arfa Waseem**, Ayesha Aleem and Hafiza Rizwana Kausar.: Impact of minimal matter-geometry coupling on anisotropic quark stars, Int. J. Geom. Meth. Mod. Phys. **20** (2023) 2350068 (World Scientific)[**CoAuthor, I.F. 1.8**].

22. Faisal Javed, **Arfa Waseem** and Bander Almutairi.: Quantum corrected charged thin-shell wormholes surrounded by quintessence, Eur. Phys. J. C **83** (2023) 811 (Springer)[**CoAuthor, I.F. 4.991**].

23. **Arfa Waseem**, Faisal Javed, Muhammad Zesshan Gul, Ghulam Mustafa and Abdelghani Errehymy.: Impact of quintessence and cloud of strings on self-consistent d-dimensional charged thin-shell wormholes, Eur. Phys. J. C **83** (2023) 1088 (Springer) [**First Author, I.F. 4.991**].

24. Sobia Sadiq, **Arfa Waseem**, Faisal Javed, Abdelghani Errehymy and Abdel-Haleem Abdel-Aty.: Gravitationally Decoupled Charged Anisotropic Solutions in Rastall Gravity, Front. Astron. Space Sci. **10** (2024) 1320081 (frontiers)[**CoAuthor, I.F. 2.6**].

25. Faisal Javed, **Arfa Waseem**, Ghulam Mustafa and Ertan Gudekli.: Thin-shell wormholes with AdS black holes surrounded by Chaplygin dark fluid, Int. J. Geomet. Meth. Mod. Phys. **21** (2024) 2450061 (World Scientific)[**CoAuthor, I.F. 1.8**].

26. Faisal Javed, **Arfa Waseem**, Ji Lin, Sobia Sadiq, Ghulam Mustafa and Mansoor H. Alshehri.: Insights into dynamical evolution and stability of thin-shell configurations through acoustic black holes, Eur. Phys. J. C **83** (2024) 1088 (Springer)[**CoAuthor, I.F. 4.5**].

27. **Arfa Waseem**.: Tolman IV perfect fluid sphere in Rastall gravity, Int. J. Geomet. Meth. Mod. Phys. **21** (2024) 2450112 (World Scientific) [**First Author, Corresponding Author, I.F. 1.8**].

28. Faisal Javed, **Arfa Waseem**, Ghulam Mustafa, Fairouz Tchier, Farruh Atamurotov, Bobomurat Ahmedov and Ahmadjon Abdujabbarov.: Constraining study of charged gravastars solutions in symmetric teleparallel gravity, Chin. J. Phys. **90** (2024) 410 (Elsevier) [**CoAuthor, I.F. 5**].

29. **Arfa Waseem**.: Isotropic compact stars admitting Heintzmann solution in Rastall gravity, Int. J. Geomet. Meth. Mod. Phys. **21** (2024) 2450194 (World Scientific) [**First Author, Corresponding Author, I.F. 1.8**].

30. Ghulam Fatima, Faisal Javed, **Arfa Waseem**, Ghulam Mustafa and Fairouz Tchier.: Study of acoustic thin-shell wormholes with different types of matter distributions, Int. J. Geomet. Meth. Mod. Phys. **21** (2024) 2450198 (World Scientific)[**CoAuthor, I.F. 1.873**].

31. Ghulam Fatima, Faisal Javed, **Arfa Waseem**, Ghulam Mustafa and Bander Almutairi.: Role of holographic dark energies in preserving stability of thin-shell wormholes in charged torus black holes, Chin. J. Phys. **90** (2024) 864 (Elsevier)[**Corresponding Author, I.F. 5**].

32. Ghulam Mustafa, Faisal Javed, S.K. Maurya, **Arfa Waseem** and Ghulam Fatima.: Imprints of dark energy models on structural properties of charged gravastars in extended teleparallel gravity, Phys. Dark Universe **46** (2024) 101574 (Elsevier)[**CoAuthor, I.F. 5.5**].

33. Faisal Javed, **Arfa Waseem**, Ghulam Fatima and Bander Almutairi.: Stability of thin-shell wormholes via polymer black hole in loop quantum gravity, Phys. Dark Universe **46** (2024) 101605 (Elsevier) [**Corresponding Author, I.F. 5.5**].

34. **Arfa Waseem**, Tooba Chudhary, Sunaiha Naeem, Bander Almutairi and Faisal Javed.: Insights on the stability of compact stars under Durgapal-Lake metric potentials in the framework of non-conservative theory of gravity, Phys. Dark Universe **46** (2024)101609 (Elsevier)[**First Author, I.F. 5**].

35. **Arfa Waseem**, Faisal Javed, Ghulam Mustafa, Farruh Atamurotov and Bander Almutairi.: Impact of cold dark matter and variable equations of state on the stability of thin-shell wormholes, Phys. Dark Universe **46** (2024) 101613 (Elsevier)[**First Author, I.F. 5**].

36. **Arfa Waseem** and Sunaiha Naeem.: Role of Durgapal-Fuloria model on isotropic spheres in Rastall gravity, Gen. Relativ. Gravit. **56** (2024) 100 (Springer) [**First Author, Corresponding Author, I.F. 2.1**].

37. Asifa Ashraf, Faisal Javed, Wen-Xiu Ma and **Arfa Waseem**.: Effect of perfect fluid dark matter on Bardeen thin-shell wormholes, Eur. Phys. J. Plus **139** (2024) 857 (Springer) [**Corresponding Author, I.F. 2.8**].

38. Faisal Javed, Sulaman Shaukat, **Arfa Waseem**, Ghulam Mustafa, and Bander Almutairi.: Klein–Gordon equation and geodesic behavior in quantum-corrected charged black holes with quintessence, Phys. Dark Universe **46** (2024) 101689 (Elsevier)[**Corresponding Author, I.F. 5**].

39. Faisal Javed, **Arfa Waseem**, Ghulam Fatima and Bander Almutairi.: Study of wormhole stability in the framework of black hole surrounded by the pseudo-isothermal dark matter halo, Eur. Phys. J. C **84** (2024) 1154 (Springer)[**Corresponding Author, I.F. 4.2**].

40. **Arfa Waseem** and Sunaiha Naeem.: Study of isotropic stellar models via Durgapal-Lake solutions in Rastall system, Phys. Scri. **99** (2024) 125023 (IOP Science) [**First Author, Corresponding Author, I.F. 2.6**].

41. Faisal Javed, **Arfa Waseem**, Ghulam Mustafa, Ghulam Fatima and Shalan Alkarni.: Particle motion and thermal fluctuations of charged AdS black holes surrounded by exotic fluid with modified Chaplygin equation of state, Phys. Dark Universe **47** (2025) 101723 (Elsevier) [**Corresponding Author, I.F. 5**].

42. Faisal Javed, **Arfa Waseem**, Phongpichit Channuie, Ghulam Mustafa, Taseer Muhammad and Ertan Güdekli.: Particle Dynamics and Joule-Thomson Expansion of Phantom Anti-de Sitter Black Hole Stability and Thermal Fluctuations in Massive Gravity, Phys. Dark Universe **47** (2025) 101766 (Elsevier)[**CoAuthor, I.F. 5**].

43. Ghulam Fatima, Faisal Javed, **Arfa Waseem** and Bander Almutairi.: Heat engine efficiency, particle dynamics and thermodynamic properties of Hayward–Letelier-AdS Black Hole, Phys. Dark Universe **47** (2025) 101820 (Elsevier)[**Corresponding Author, I.F. 5**].

44. Faisal Javed, **Arfa Waseem,** Sobia Sadiq and G. Mustafa, A comprehensive analysis of stable configurations of nonrotating BTZ-ModMax thin-shell wormholes, Eur. Phys. J. C **85** (2025) 93 (Springer)[**Corresponding Author, I.F. 4.2**].

45. Sunaiha Naeem, **Arfa Waseem**, Bander Almutairi and Faisal Javed, Gravastar models in Braneworld scenario: the influence of Durgapal-V metric potential, Phys. Dark Universe **48** (2025) 101849 (Elsevier)[**CoAuthor, I.F. 5**].

46. Faisal Javed, **Arfa Waseem,** M. Zeeshan Gul and Bander Almutairi, Wormholes stability from a class of $(2 + 1)$-dimensional regular black holes, Ann. Phys. **476** (2025) 169956 (Elsevier) [**Corresponding Author, I.F. 3**].

47. Ghulam Fatima, Tao Zhu, Faisal Javed, **Arfa Waseem** and G. Mustafa.: A comprehensive study of particle dynamics, thermal fluctuations with Barrow entropy, and graybody factors of quantum-improved charged black holes, Eur. Phys. J. C **85** (2025) 208 (Springer)[**CoAuthor, I.F. 4.2**].

48. **Arfa Waseem** and Sunaiha Naeem.: Anisotropic Stellar Models with Quintessence Dark Energy in Rastall Gravity, Int. J. Geomet. Meth. Mod. Phys. **22** (2025) 2540018 (World Scientific) [**First Author, Corresponding Author, I.F. 2.1**].

ACHEIVEMENTS/AWARDS

- ❖ HEC Indigenous Ph.D. Fellowship for 5000 Scholars, Phase-II, Batch-III.
- ❖ DPCC scholarship during M.Phil.
- ❖ Study tour of UK, Germany and Turkey for 1 month fully funded by Govt. of Pakistan.
- ❖ Merit scholarship in M.Sc.
- ❖ Merit certificate from University of the Punjab with prize of seventy five thousand (B.Sc).
- ❖ 2nd position in B.Sc (Mathematics, Physics).
- ❖ PEEF Merit scholarship in B.Sc.
- ❖ Merit scholarship in intermediate.

MS Supervised

1. Miss Sunaiha Naeem

   Title: Study of Isotropic Compact Objects in Rastall Gravity with Durgapal-Fuloria and Lake Solutions

Dr. Arfa Waseem

2. Miss Tooba Chudhary

   Title: Unraveling the Influence of Metric Functions: Exploring Physical Aspects of Anisotropic Compact Stars in Rastall Theory

3. Miss Maimoona Abbas **(Enrolled)**
4. Miss Salma Yaqoob   **(Enrolled)**
5. Miss Arooj Fatima   **(Enrolled)**
6. Miss Saira Fatima   **(Enrolled)**

LANGUAGES

- ➢ English (fluent)
- ➢ Urdu (fluent)

REFERENCES

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