ALLAH DITTA

Date of birth: 12/09/1984 | **Nationality:** Pakistani | **Phone number:**

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ABOUT ME

I am a highly motivated and accomplished individual with Ph.D. in Applied Mathematics which was completed on 12 June 2024, with research specialization in the field of General Relativity, Astrophysics, and the study of black holes and compact stars. My passion for unraveling the mysteries of the cosmos has driven my academic pursuits and research endeavors. Throughout my doctoral research, I have demonstrated a keen understanding of complex mathematical concepts and their applications to theoretical physics. My dissertation focused on the intricate interplay between General Relativity and astrophysical phenomena, with a particular emphasis on the dynamics of black holes and compact stars. I have a solid foundation in both analytical and numerical techniques, allowing me to explore the intricate details of spacetime curvature and its implications for the behavior of exotic celestial objects. My work has contributed to advancing our understanding of the fundamental principles governing these cosmic entities. I also won the Chinese YangYang Research Award in 2022 and the Academic Star Award of the Year in 2023. Beyond my academic achievements, I possess strong interpersonal and communication skills, essential for collaboration in a dynamic research environment. I am adept at presenting complex ideas to both specialized and non-specialized audiences, fostering a culture of knowledge exchange and collaboration. My commitment to academic excellence is evident through my publication record in reputable journals and my participation in conferences where I have engaged with peers and experts in the field. As I seek to further deepen my contributions to the field of theoretical physics, I am eager to pursue a position within the Center of Mathematics, Physics, Gravity, Cosmology, or Astrophysics. I am confident that my unique combination of mathematical prowess, research understanding, and enthusiasm for astrophysical exploration positions me as an ideal candidate for this opportunity. I look forward to the prospect of contributing to cutting-edge research and continuing to push the boundaries of our understanding of the universe.

WORK EXPERIENCE

15/08/2016-30/10/2021
LECTURE CONCORDIA COLLEGE SAHIWAL-PAKISTAN

I had the privilege of teaching a diverse range of bachelor-level subjects: **Linear Algebra**, **Numerical Analysis**, **Calculus**, **General Mathematics**, **General Relativi**ty, and **Ordinary Differential Equation**. I took a break from my job due to the completion of my PhD mathematics.

08/09/2010 – 13/08/2016 Sahiwal, Punjab, Pakistan
MATHEMATICS/SCIENCE DEMONSTRATOR (EST SCIENCE) GOVERNMENT OF THE PUNJAB SCHOOL EDUCATION DEPARTMENT.

I worked as a mathematics and physics teacher in the Government High School 86/6-R Sahiwal under the Education Department of Punjab-Pakistan. My main duties were teaching mathematics and physics-related subjects, along with managing other tasks like the maintenance and supervision of records. I also served as a mathematics master trainer.

EDUCATION AND TRAINING

03/09/2021 – 12/06/2024 China
PHD. (APPLIED MATHEMATICS) Shanghai University Shanghai, China.

Final grade CGPA=3.81 |

Thesis: Mathematical structural analysis and optical properties of astrophysical compact objects.

2018 - 2020
M.PHIL/MS. (MATHEMATICS) COMSATS university Islamabad, Lahore campus.

Final grade CGPA=3.57/4.00 |

Thesis: Stellar Structures in modified gravity based on Karmarkar Condition.

2014 – 2016
M.SC. (MATHEMATICS) Bahauddin Zakariya University, Multan.

Final grade CGPA=3.95/4.0

2006 – 2008
MBA. (FINANCE) Bahauddin Zakariya University, Multan.

Final gradeCGPA=2.96/4.00

LANGUAGE SKILLS

Mother tongue(s):   **URDU**

Other language(s):   **ENGLISH, PUNJABI, CHINESE**

DIGITAL SKILLS

MATHEMATICA | LATEX| MAPLE | MATLAB

HONOURS AND AWARDS

26/11/2022
Yang Yang Research Award – Department of mathematics, Shanghai University, Shanghai China

Best researcher award

08/12/2023
Academic Star of the Year Award – Shanghai University, Shanghai China

This award is awarded by Shanghai University, Shanghai China, on research and overall performance.

22/06/2024
Outstanding International Graduate – Shanghai University, Shanghai China

This award is awarded by Shanghai University, Shanghai China, on research and overall performance.

15/05/2024
Honorary Credential – Shanghai University, Shanghai China.

Honored with the certificate on warm participation in the 11th International Cultural Day celebrations.

CONFERENCES AND SEMINARS

2017 Govt. College University Lahore-Pakistan
International Conference on Mathematics.

2022 Shanghai University, Shanghai-China
Conference on differential Equations

13/05/2024 - 18/05/2024 Tashkent, Uzbekistan
International Conference on Theoretical Physics and Astrophysics.

PUBLICATIONS

1. **Testing metric-affine gravity using particle dynamics and photon motion**, Physics of the Dark Universe 41, 101248 (2023).
   Allah Ditta, Xia Tiecheng, Saadia Mumtaz, Farruh Atamurotov, G. Mustafa, Ahmadjon Abdujabbarov.

2. **Thermal Stability and Effects of Thermal Fluctuations on the Static and Spherically Symmetric Hairy Black Hole by Gravitational Decoupling**, Physics of Dark Universe 42,101345 (2023).
Allah Ditta, Faisal Javed, Sunil Kumar Maurya, G. Mustafa, Farruh Atamurotov.

3. **Thermal properties of Simpson–Visser Minkowski core regular black holes solution in Verlinde's emergent gravity**, Physics of the Dark Universe, 43,101418(2024).
Allah Ditta , Xia Tiecheng , Riasat Ali, Ghulam Mustafa, G. Mustafa , Asif Mahmood.

4. **Particle motion, shadows and thermodynamics of regular black hole in pure gravity**, Physics of Dark Universe 46,101573 (2024).
Allah Ditta, Abdelmalek Bouzenada, G. Mustafa, Yousef Mohammed Alanazi, Farzan Mushtaq.

5. **Anisotropic charged stellar models with modified Van der Waals EoS in f(Q) gravity**, The European Physical Journal C 83, 254 (2023).
A. Ditta, X Tiecheng, A Errehymy, G Mustafa, SK Maurya.

6. **Thermal stability with emission energy and Joule-Thomson expansion of regular BTZ- like black hole**, The European Physical Journal C 82, 756 (2023).
Allah Ditta, Xia Tiecheng, G. Mustafa, Muhammad Yasir, Farruh Atamurotov.

7. **A study of traversable wormhole solutions in extended teleparallel theory of gravity with matter coupling**, The European Physical Journal C 81880 (2021).
Allah Ditta, Ibrar Hussain, G. Mustafa, M. Daoud.

8. **The effect of modified hybrid and logarithmic teleparallel gravity on the interior solutions of compact stars**, The European Physical Journal C 83, 1020(2023).
Allah Ditta, Xia Tiecheng, G. Mustafa, Abdelghani Errehymy.

9. **Thermal analysis of gravitational decoupling Black hole solution**, Journal of High Energy Astrophysics 42, 146-155 (2024).
Allah Ditta, Saadia Mumtaz, G. Mustafa, S.K. Maurya, Farruh Atamurotov, Asif Mahmood.

10. **Particle dynamics and fundamental frequencies of black hole coupled with a nonlinear electrodynamics field**, Journal of High Energy Astrophysics 43, 51–60 (2024).
Allah Ditta, F. Javed, G. Mustafa, F. Atamurotov, S. Salimov.

11. **Particle dynamics and weak gravitational lensing around nonlinear electrodynamics black hole**, Chinese Journal of Physics 83, 664-679(2023).
Allah Ditta, Xia Tiecheng, Farruh Atamurotov, G. Mustafa, M.M. Aripov.

12. **Anisotropic compact stars features using Tolman Kuchowiz and Embedding Space time in Rastall Teleparallel gravity**, Chinese Journal of Physics 79, 57-68 (2022).
Allah Ditta, Tiecheng Xia.

13. **Modeling of anisotropic spheres in extended teleparallel theory with matter coupling**, Chinese Journal of Physics 69, 240–252 (2021).
Allah Ditta, Asifa Ashraf, Zhiyue Zhang, G. Mustafa.

14. **Thermal analysis of charged Symmergent black hole with logarithmic correction**, Chinese Journal of Physics 88, (2024) 287-300.
Allah Ditta, Faisal Javed, G. Mustafa, S.K. Maurya, Değer Sofuoğlu, Farruh Atamurotov.

15. **Comparative Analysis of Dark Energy Compact Stars in f(T, T) and f(T) Gravity Theories via Conformally Flat Condition**, Classical and Quantum Gravity 41, 155004 (2024).
Allah Ditta, G. Mustafa, S, Maury, D. Sofuoğlu, A. Mahmood.

16. **Particle dynamics, black hole shadow and weak gravitational lensing in the f (Q) theory of gravity**, Commun. Theor. Phys. 75 (2023) 125404 (14pp).
Allah Ditta, Xia Tiecheng, Farruh Atamurotov, Ibrar Hussain, G Mustafa.

17. **Thermal analysis of Rindler Schwarzschild Black Hole via corrected entropy**, Communications in Theoretical Physics 76, 095405 (2024).
Allah Ditta, Xia Tiecheng, Riasat Ali, Ali Ovgun.

18. **Thermodynamic stability of the regular charged torus-like black hole**, Annals of Physics 452, 169326(2023).
Allah Ditta, Xia Tiecheng, Riasat Ali, Farruh Atamurotov, Asif Mahmood, Sohail Mumtaz.

19. **Thermal stability and tunneling radiation in Van der Waals black hole**, Nuclear Physics B 994, 116287(2023).
Allah Ditta, Xia Tiecheng, Riasat Ali, G. Mustafa.

20. **Features of anisotropic compact stars in Rastall Teleparallel gravity via Linear Equation of State**, Physics Scripta 99 025012 (2024).
Allah Ditta, Tiecheng Xia.

21. **Imprints of cloud of strings and quintessence field on compact stellar configurations**, Physics Scripta 99, 065009 (2024).
Allah Ditta, Munaza Asia, Ghulam Mustafa, Değer Sofuoğlu, Asif Mahmood.

22. **Physical implications of teleparallel gravity on stellar configurations with modified Vander Waals equation of state**, The European Physical Journal Plus 173, 933(2022).
Allah Ditta, Abdelghani Errehymy, Xia Tiecheng, G. Mustafa, H. I. Alrebdi.

23. **Anisotropic stellar structures in the f(T) theory of gravity with quintessence via embedding approach**, Chinese Physics C 45, 045102 (2021).

Allah Ditta, Mushtaq Ahmad, Ibrar Hussain, G. Mustafa.

24. **Particle motion and lensing with plasma of acoustic Schwarzschild blackhole,** International Journal of Modern Physics A 38, 2350041 (2023).
Allah Ditta, Tiecheng Xia, Muhammad Yasir.

25. **Anisotropic viable solutions of stellar structures in modified teleparallel gravity,** International Journal of Geometric Methods in Modern Physics 19, 2250130(2022).
Allah Ditta, Tiecheng Xia

26. **Thermal stability of black hole in bumblebee gravity with cosmological constant,** International Journal of Modern Physics A, 21, 2350093 (2023).
Allah Ditta, Tie-Cheng Xia, Riasat Ali, Asif Mahmood.

27. **Cloud of strings and quintessence compact stars with anisotropic fluid in symmetricTeleparallel gravity,** International Journal of Geometric Methods in Modern Physics 21, 2450076-432 (2024).
Allah Ditta, Xia Tiecheng, Irfan Mahmood, Munaza Asia, Asif Mahmood.

28. **Anisotropic stellar modeling with clouds of string and quintessence field in Rastallgravity,** International Journal of Modern Physics A, 38, 2350153 (2023).
Allah Ditta, Xia Tiecheng, Irfan Mahmood, Munaza Asia, Asif Mahmood.

29. **Quintessence anisotropic stellar models in quadratic and Born-Infeld modifiedTeleparallel Rastall gravity,** Chinese Physics B, 33 030204(2024).
Allah Ditta, Tie-Cheng Xia, Irfan Mahmood, Asif Mahmood.

30. **Thermodynamic analysis of Magnetically charged Euler–Heisenberg black holes with scalar hair via Renyi-entropy using logarithmic correction,** High Energy Density Physics 52, 101120 (2024).
Allah Ditta, X. Tiecheng, R. Ali, A. Övgün, A. Mahmood.

31. **Structural features of anisotropic spheres with quintessence in pure Lovelock gravity,** Pramana Journal of Physics (2024) 98:45.
Allah Ditta, Xia Tiecheng, S K Mauriya, G Mustafa.

32. **Study on anisotropic star in extended teleparallel gravity with minimal mattercoupling,** Chinese Journal of Physics 77, 1742–1754 (2022).
G. Mustafa, Abdelghani Errehymy, S. K. Maurya, M.K. Jasim, Allah Ditta.

33. **Class I stars in the background of f(T, τ) cosmological model,** Chinese Journal of Physics 77, 1827–1842 (2022).
M. Zubair, Allah Ditta, Saira Waheed, Francisco Tello-Ortiz.

34. **Bardeen strange stellar structures,** International Journal of Modern Physics A 37, 2250085 (2022).
G. Mustafa, M. Farasat Shamir, Allah Ditta, Ibrar Hussain.

35. **Phantom traversable wormholes in modified teleparallel gravity,** Chinese Journal ofPhysics 77, 1253–1268 (2022).
Ibrar Hussain, G. Mustafa, Kashif Ammar, Allah Ditta.

36. **Charged strange stars with dust and phantom regimes in Rastall gravity,** Chinese Journal of Physics 77, 2781–2794 (2022).
G. Mustafa, Abdelghani Errehymy, Allah Ditta, M. Daoud.

37. **Physical viability of anisotropic strange spheres in non-linear teleparallel gravity,** NewAstronomy 92, 101735 (2022).
Muhammad Zubair, Allah Ditta, Saira Waheed.

38. **Physical aspects of anisotropic compact stars in gravity with off diagonal tetrad,** Chinese Physics C 45, 085102(2021).
Muhammad Zubair, Allah Ditta, Ghulam Abbas, Rabia Saleem.

39. **Anisotropic stellar Finch-Skea structures satisfying Karmarkar condition in a Teleparallel framework involving off-diagonal tetrad,** European Physical Journal Plus, (2021)136:508.
Muhammad Zubair, Allah Ditta, Saira Waheed.

40. **Embedded interior solutions of Vela X - 1 model in f (τ, T) gravity,** International Journalof Geometric Methods in Modern Physics 18, 2150119 (2021).
Asifa Ashraf, Allah Ditta, Quanyong Zhu, Zhiyue Zhang.

41. **Anisotropic Compact Star models in f (T) Gravity with Tolman-Kuchowiz Spacetime,** International Journal of Geometric Methods in Modern Physics 18, 2150060 (2021).
Muhammad Zubair, Allah Ditta, Ertan Güdekli, Hina Azmat.

42. **A study of anisotropic spheres in modified gravity via embedding approach,** Annals of Physics 422, 168322 (2020).
Asifa Ashraf, Zhiyue Zhang, Allah Ditta, G. Mustafa.

43. **Thermodynamical analysis of acoustic Schwarzschild black hole,** New Astronomy 105, 102106 (2023).
Muhammad Yasir, Xia Tiecheng, Allah Ditta, Riasat Ali, Farruh Atamurotov.

44. **Analysis of thermal geometries on slowly rotating black holes in 4D Gauss–Bonnetgravity,** Astronomy and Computing 44, 100733(2023).
M. Yasir, X. Tiecheng, A. Ditta.

45. **Thermal geometries and the Joule-Thomson expansion of modified charged and slowly rotating black holes,** Frontiers in Physics (2023).

M Yasir, T Lining, X Tiecheng, A. Ditta.

46. Structural properties of anisotropic stars in modified teleparallel gravity: a brief study via an embedding approach, The European Physical Journal C 83, 313 (2023).
Asifa Ashraf, Abdelghani Errehymy, Allah Ditta, Zhiyue Zhang, Xia Tiecheng , Mohammed Daoud.

47. Anisotropic electrically charged stars in f(Q) symmetric teleparallel gravity, The European Physical Journal Plus, 137, 1311 (2022).
A Errehymy, A Ditta, G Mustafa, SK Maurya, AH Abdel-Aty.

48. Weak gravitational lensing and fundamental frequencies of Einstein–Euler–Heisenberg black hole, New Astronomy 108, 102185 (2024).
F. Mushtaq , X. Tiecheng, A. Ditta, F. Atamurotov, A. Abduvokhidov, A. Asalkhon.

49. Anisotropic strange stars with off-diagonal tetrad in f(T,T) gravity, International Journal of Geometric Methods in Modern Physics 19, 2250190 (2022).
F Javed, M Jan, A Ditta, S Qaisar.

50. Study on physical properties and maximum mass limit of Finch-Skea anisotropic model under Karmarkar condition in f (Q) -gravity, Chinese Journal of Physics 88, (2024) 938-954.
G. Mustafa, Allah Ditta, Saadia Mumtaz, S.K. Maurya, Değer Sofuoğlu.

51. Applications of Thermal Geometries of Black Hole in Metric-Affine Gravity, International Journal of Theoretical Physics 63, 26 (2024).
Muhammad Yasir, Tie-Cheng Xia, Allah Ditta, Shahid Qaisar.

52. Joule-Thomson expansion of Bardeen black hole with a cloud of strings, International Journal of Modern Physics A (2024) 2450046 (21 pages).
G. Mustafa, Allah Ditta, Faisal Javed, Farruh Atamurotov, Ibrar Hussain, Bobomurat Ahmedov.

53. Dark Energy Compact Stars in Extended Teleparallel Gravity, Preprint: arXiv:2401.06193.
Allah Ditta, Xia Tiecheng, G. Mustafa, Değer Sofuoğlu, Asif Mahmood.

54. Reconstruction of Symmetric Teleparallel Gravity with Energy Conditions, International Journal of Geometric Methods in Modern Physics 21, (2024) 2450204.
Irfan Mahmood, Hira Sohail, Allah Ditta, S. H. Shekh, Anil Kumar Yadav.

55. Darboux Wronskian solutions of Ito typed coupled KdV equation with exact solitonic solutions and conserved densities, Preprint: arXiv:2201.05904.
Irfan Mahmood, Hira Sohail, Allah Ditta.

56. Quasi-periodic oscillations and particle motion around charged black hole surrounded by a cloud of strings and quintessence field in Rastall gravity, Physics Scripta 99, 065011 (2024).
A. Ashraf, Allah Ditta, Deger Sofuoglu, Wen-Xiu Ma, F. Javed, Farruh Atamurotov, Asif Mahmood.

57. Probing black hole in Starobinsky-Bel-Robinson gravity with thermodynamical analysis, effective force and gravitational weak lensing, Chinese Journal of Physics 90, 494-508 (2024).
G. Mustafa, Allah Ditta, Faisal Javed, Farruh Atamurotov, Ibrar Hussain, Bobomurat Ahmedov.

58. Analyzing the Einstein cubic gravity black hole for weak gravitational lensing, quasi-periodic oscillations, effective force, and emission energy, International Journal of Modern Physics A 39, 2450064 (2024).
Farzan Mushtaq, Xia Tiecheng, Allah Ditta, Asif Mahmood.

59. Stellar modeling with quintessence field via embedding approach in Ratsall Teleparallel gravity, International Journal of Geometric Methods in Modern Physics (2024) 2450229.
Irfan Mahmood, Hira Sohail, Allah Ditta, and Asif Mahmood.

60. Study of self-bound compact stars in f(T) gravity and observational constraints on the model parameters, European Physical Journal C 84, 603 (2024).
S. K. Maurya, H. Chaudhary, A. Ditta, G. Mustafa, S. Ray.

61. Noncommutative wormhole in de Rham-Gabadadze-Tolley like massive gravity, Nuclear Physics B 1006, 116621(2024).
Piyali Bhar, Allah Ditta, Abdelghani Errehymy.

62. Optical Properties of Euler-Heisenberg black hole surrounded by perfect fluid dark matter, Physics of the Dark Universe 46, 101583 (2024).
G. Dilara Acan Yildiz, Allah Ditta, Asifa Ashraf, Ertan G˙udekli, Yousef Mohammed Alanazi, Anvar Reyimberganov.

63. Rastall teleparallel gravity: gravitational decoupling with MGD approach, The European Physical Journal Plus 139, 695 (2024).
Hira Sohail, Allah Ditta, Irfan Mahmood, S.K.Maurya, Yousef Mohammed Alanazi.

64. Physical characteristics of anisotropic solutions in $f(Q,T)$ gravity under the vanishing complexity, embedding class one, conformally flat and conformally killing conditions**,** Nuclear Physics B 007 (2024) 116689.
Allah Ditta, Xia Tiecheng, S.K. Maurya , G. Mustafa, Asif Mahmood, Saibal Ray.

65. Deflection angle and quasi-periodic oscillations of extended gravitational decoupled black hole solution, Communications in Theoretical Physics- Accepted.
Farzan Mushtaq, Xia Tiecheng, Allah Ditta, G. Mustafa, S.K. Maurya.

66. Investigating the weak gravitational lensing in Starobinsky-Bel-Robinson gravity black hole, International Journal of Geometric Methods in Modern Physics - Accepted.

Farzan Mushtaq, Xia Tiecheng, Allah Ditta, Yousef Mohammed Alanazi.

67. Testing the non-commutative charged Schwarzschild black hole surrounded by Perfect fluid dark matter for thermodynamics features and weak gravitational lensing, Physics of Dark Universe-Accepted.

Yihu Feng, Allah Ditta, G. Mustafa, S.K Maurya, Asif Mahmood, Saibal Ray, Farruh Atamurotov.

68. Non-commutative Schwarzschild black hole surrounded by Perfect fluid dark matter: plasma lensing and thermodynamics analysis, Nuclear Physics B.

Yihu Feng, Allah Ditta, G. Mustafa, S.K Maurya, Asif Mahmood, Farruh Atamurotov.

RECOMMENDATIONS

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Department of Mathematical and Physical Sciences,
College of Arts and Sciences, University of Nizwa,
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