ALLAH DITTA

PhD
Visiting Lecturer
Department of Mathematics
The Islamia University of Bahawalpur
Punjab, Pakistan
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Education

Ph. D. (Mathematics) 2021 — The Islamia University of Bahawalpur, Pakistan
Title: Relativistic Matter Accretion Onto a Class of Black Holes
CGPA: 3.50/4.00

M. Phil. (Mathematics) 2015 — The Islamia University of Bahawalpur, Pakistan
Title: Heat and mass transfer in a pipe flow of a Jhanson Segalman fluid in the presence of chemical reaction under the convective boundary conditions
CGPA: 3.45/4.00

Master (Mathematics) 2008 — The Islamia University of Bahawalpur, Pakistan
CGPA: 3.35/4.00

Bachelor in Science 2006 — Bahauddin Zakariya University Multan, Pakistan
1st Division

Experience

- I am currently working as a subject specialist of Mathematics and Physics since 15

August 2017 in the School Institution, Lodhran, Pakistan.

- I am serving an individual tutoring of several mathematical courses to students in grade levels 12.
- I have taught various courses of mathematics at the University level to bachelor and M.Sc. classes.
- I have served as a resource person of Allama Iqbal Open University, Islamabad to teach the several online MA courses.

Achievements

- Certified by the Election Commission of Pakistan for participating as well as performing various duties as an Assistant Presiding officer and Presiding officer in the General Election of Pakistan 2013 and 2018, respectively.
- Certified by the Directorate of staff development Punjab, Pakistan for participating 04 days inclusive training of School Institution held in May 6-9, 2017.
- Received HEC Prime Minister Laptop during Ph.D. work in 2018.

Courses Taught

- Calculus
- Basic Maths
- ODE,s and PDE,s
- Mechanics
- Vector Tensor Analysis
- Complex Analysis
- Integral Equation & Boundary Value Problems
- Theory of Relativity
- Advanced General Relativity

- Advanced Analytic Dynamics

Memberships/Responsibilities

- Reviewer of Mathematical Reviews, New Astronomy.
- Working as In charge admission cell for new enrollment in School Institution.
- Responsibility as a member of Discipline committee in School Institution.

Computer Skills

- Mathematical Tools: Latex, Maple, Mathematica
- Office Automation: Microsoft Office

National/International Conferences

- Attended as a participant of 18th International Pure Mathematics Conference 2017 organized by the Islamia University of Bahawalpur, Preston University and Pakistan Mathematical Society, Islamabad from August 05-07, 2017.
- Attended a 2nd Algebra Conference of Mathematics held on November 10-11, 2018 at The Islamia University of Bahawalpur.
- Presented a paper entitled "Matter accretion onto a bran- world black hole via Hamiltonian approach" in the 1st PU International Conference on Gravitation and Cosmology organized by The Group of Gravitation and Cosmology held on January 27-31, 2019 at Department of Mathematics, University of the Punjab, Lahore-Pakistan.
- Presented a paper entitled " Matter accretion onto a bran- world black hole via Hamiltonian approach" in the "2nd International Conference on Recent Advances in Applied Mathematics held on February 20-22, 2019 at Comsats University Islamabad, Lahore campus.
- Attended " International Conference on Impact of Mathematics in Modern Era" held on April 08, 2021 at the Baghdad-ul-Jaded campus, The Islamia University of Bahawalpur.
- Presented a paper entitled "Matter accretion onto a bran- world black hole via

Hamiltonian approach" in the 4th PU International Conference on Gravitation and Cosmology organized by The Group of Gravitation and Cosmology held on November 22-25, 2021 at Department of Mathematics, University of the Punjab, Lahore-Pakistan.

Research Interests

My main area of interest is General Theory of Relativity (GR) and Black Hole theory. I want to investigate the impacts of dark matter and dark energy on the accelerating evolutionary Universe by using the various models of these gravitational theories. I wish to discuss the different constraints of such theories models by analyzing the radial velocity, energy density and mass accretion rate of the black holes (BHs). I wish to investigate various physical properties of BHs like accretion onto a BH, circular orbits of BH, Michel type accretion onto a BH, motion of spinning particles, Electromagnetic emissivity of the thin accretion disks around BHs, thermodynamics and phase transitions of BH, Joule Thomson effect of Ads/ds BH, thermal fluctuation, qausinormal modes and shadow of BH. I also want to continue my work by inspecting the various physical implications of astrophysical as well as cosmological events through studying their variety of problems, like dynamical evolutionary structures, self-gravitating dense models, gravitational collapsing objects, extended gravitational decoupled star models, models of compact stars, stability and instability of wormhole structures, modeling of Gravastars through BH solutions, etc. Moreover, I am willing to work in different areas of mathematics to resolve research problems.

Research Activities

A) Articles (Published /Accepted/ Submitted)

I have been published the following research papers in the well reputed International journals…

1. G. Murtaza, **Allah Ditta,** T. Naseer et al., **(2024)** On the evaluation of accretion process near a quantum-improved charged black hole, Journal of High Energy Astrophysics, https://doi.org/10.1016/j.jheap.2024.10.004 **(I.F. 10.2).**

2. **Allah Ditta** , Ghulam Mustafa, Ghulam Abbas, Farruh Atamurotov, and Kimet Jusufi **(2023)** Constraining study of circular orbits and accretion disk around nonlinear electrodynamics black hole, JCAP_08_002 **(I.F. 7.28).**

3. Ghulam Mustafa, Faisal Javed, **Allah Ditta** ,S.K.Maurya,Yong Liu and Farruh Atamurotov **(2023)** Matter accretion onto charged black holes in symmergent gravity, Physics of the Dark Universe 101376_42 **(I.F. 5.28).**

4. Ghulam Mustafa, **Allah Ditta,** Faisal Javed,,S.K.Maurya,Himanshu Chaudhary and Farruh Atamurotov **(2024)** A study on matter accretion onto charged black hole solution in metric affine gravity, Chin. J. Phys. 89:628-648 **(I.F. 5.28).**

5. G. Murtaza, **Allah Ditta,** A. Ghafar et al., **(2024)** Accretion mechanisim for regular black holes with asymptotically Minkowski Cores and improved Schwarzschild black holes, Chinese Journal of Physics, https://doi.org/10.1016/j.cjph.2024.07.042 **(I.F. 10.2).**

6. **Allah Ditta** and Ghulam Abbas, (2020) Circular orbits and accretion process near a regular phantom black hole, Gen. Relativ. Gravit. 52:77 **(I.F. 2.513)**
7. Ghulam Abbas and **Allah Ditta,** (2019) Matter accretion onto Einstein-power-Maxwell black hole, Gen. Relativ. Gravit. 51:43 **(I.F. 2.030).**
8. Ghulam Abbas **Allah Ditta** Jawad, A. and Umair, S. (2019) Matter accretion onto a brane-world black hole via Hamiltonian approach, Gen. Relativ. Gravit . 51:136-155 **(I.F. 2.030).**
9. Ghulam Abbas **Allah Ditta, (2020)** Matter Accretion onto a Conformal gravity black hole, Eur. Phys. J. C. 80:1212 **(I.F. 4.590)**
10. Ghulam Abbas and **Allah Ditta,** (2018) Accretion onto a charged Kiselev black hole, Mod. Phys. Lett. A 33:1850070 **(I.F. 1.367)**
11. **Allah Ditta** and Ghulam Abbas, (2020) Relativistic accretion mechanism for

some black holes, Chin. J. Phys. 65:325-333 **(I.F.** 3.237**).**

12. **Allah Ditta** and Ghulam Abbas, (2020) Astrophysical accretion near Hayward regular black holes, New Astronomy. 81:101437 **(I.F.** 1.325**).**
13. Ghulam Abbas **Allah Ditta,** (**2021**) Michel accretion onto a non-commutative black hole, New Astronomy. 84:101508 **(I.F.** 1.325**).**
14. Ghulam Abbas Azam, M. **Allah Ditta, (2021)** Accretion onto a Born-Infeld black hole, Chin. J. Phys.69:143-152 **(I.F. 3.036).**
15. Ghulam Abbas, Abdul Jawad, **Allah Ditta, (2023)** Physical Analysis of matter accretion and evaporation of holographic massive gravity black hole, Annals of Phys.453:169309 **(I.F. 3.237).**
16. **Allah Ditta** and Ghulam Mustafa, (2024) Matter accretion onto Acoustic Schwarzschild Black Hole (Communicated to Journal).
17. **Allah Ditta** , Ghulam Mustafa, and Farruh Atamurotov, (2024) Motion of spinning particles around Weyl geometric black hole Via circular orbits (Communicated to Journal).
18. **Allah Ditta** , Ghulam Mustafa, and Farruh Atamurotov, (2024) Motion of spinning particles around Weyl geometric black hole Via Hamiltonian (Communicated to Journal).
19. **Allah Ditta** , Ghulam Mustafa, and Farruh Atamurotov, (2024) Motion of spinning particles around Hairy black hole (Communicated to Journal).
20. **Allah Ditta** , Ghulam Mustafa, and Farruh Atamurotov, (2024) Motion of spinning particles around Hairy black hole Via Michel approach (Communicated to Journal).
21. **Allah Ditta** , Ghulam Mustafa, and Farruh Atamurotov, (2024) Motion of spinning particles around Hairy black hole Via Hamiltonian approach (Communicated to Journal).
22. **Allah Ditta** , Ghulam Mustafa, and Farruh Atamurotov, (2024) Motion of spinning particles around Hairy black hole (Communicated to Journal).
23. **Allah Ditta** , Ghulam Mustafa, and Farruh Atamurotov, (2024) Accretion mechanism for Regular black holes (Communicated to Journal).

24. **Allah Ditta** , Ghulam Mustafa, and Farruh Atamurotov, (2024) Accretion mechanism for improved Schwarzschild black hole (Communicated to Journal).

25. **Allah Ditta** , Ghulam Mustafa, and Farruh Atamurotov, (2024) On the physical evaluation of accretion for non-commutative black hole (Ready for submitted).

26. **Allah Ditta** , Ghulam Mustafa, and Farruh Atamurotov, (2024) On the physical evaluation of accretion for charged non-commutative black hole (Ready for submitted).

27. **Allah Ditta** , Ghulam Mustafa, and Farruh Atamurotov, (2024) New results of accretion for Schwarzschild like black hole in Starobinsky-Bel-Robinson gravity. (Ready for submitted).

B)Total Impact Factor of Research Articles

- **70**

Supervisor

Dr. Ghulam Abbas, Associate Professor, Department of Mathematics, The Islamia University of Bahawalpur (abbasg91@yahoo.com) Contact No. +923027862183

References

1. Dr. Ghulam Abbas, Associate Professor, Department of Mathematics, The Islamia University of Bahawalpur (abbasg91@yahoo.com) Contact No. +923027862183
2. Farruh Atamurotov, Professor, New Uzbekistan University, Mvarounnahr street 1,

Tashet 100000, Uzbekistan (atamurotv@yahoo.com) Contact No.+998977769190

3. Dr. Ghulam Mustafa, Associate Professor, Department of Physics, Zhejiang Normal University (gmustafa3828@gmail.com) Contact No.+923336903828