Dr. Sobia Sadiq

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EDUCATION

Feb. 2019 **Ph.D. in General Relativity**
- Thesis: Study of Physical Characteristics of Stellar Configurations
- Supervisor: Prof. Dr. Muhammad Sharif, Dean, Faculty of Science, University of the Punjab, Lahore
- 4.00 CGPA (Course Work)
- 4.00 CGPA (Comprehensive)
- University of the Punjab, Lahore

Aug. 2015 **M.Phil. in Applied Mathematics**
- Thesis: Conformally Flat Anisotropic Polytropes
- Supervisor: Prof. Dr. Muhammad Sharif, Dean, Faculty of Science, University of the Punjab, Lahore
- 3.80 CGPA
- University of the Punjab, Lahore

Jul. 2013 **BS Mathematics**
- 3.91 CGPA
- University of the Punjab, Lahore

AWARDS, SCHOLARSHIPS AND HONORS

- 3rd position in Intermediate with merit certificates and prizes awarded by BISE Sargodha and government of the Punjab, Pakistan.
- Merit Scholarship awarded by Punjab University during BS and M.Phil.
- 3rd position in BS Mathematics.
- HEC Indigenous Ph.D. Fellowship for 5000 Scholars, Phase-II, Batch-III.

ADMINISTRATIVE EXPERIENCE

- Organizer, One Day Conference on Gravitation and Cosmology, Department of Mathematics, University of the Punjab, Lahore (2016).
- Organizer, PU 1st International Conference on Gravitation and Cosmology, Department of Mathematics, University of the Punjab, Lahore (2019).

TEACHING EXPERIENCE

- **Visiting Assistant Professor** at Department of Mathematics, University of Education, Jauharabad Campus from November 04, 2019 to March 04, 2020.
- **Assistant Professor (TTS)** at Department of Mathematics, University of Education, Bank Road Campus, Lahore from December 01, 2021 to to-date.

TRAININGS

- 2nd high achievers development program, Punjab Institute of Management and Professional Development, March 01-06, 2010.
- Four-week Online National Faculty Development Program, National Academy of Higher Education, Higher Education Commission, July 29, 2020.

ACADAMIC and RESEARCH INTERESTS

- Cosmology
- Electromagnetic Field Theory
- Geometry, Special and General Relativity
- Relativistic Astrophysics
- Mathematical Techniques

COMPUTER EXPERIENCE

- MS Office
- Mathematica
- Maple
- LaTex

TALKS DELIVERED

1. **Effects of Charge on Anisotropic Conformally Flat Polytropes** at Department of Mathematics, University of the Punjab, Lahore, May 13, 2015.
2. **Dynamics of self-gravitating systems** at Department of Mathematics, University of the Punjab, Lahore, December 21, 2016.
3. **Electromagnetic Effects on Cracking of Anisotropic Polytropes** at Department of Mathematics, University of the Punjab, Lahore, November 15, 2017.

4. **Study of Conformally Flat Polytropes with Tilted Congruence** at Department of Mathematics, University of the Punjab, Lahore, January 24, 2018.
5. **Study of Anisotropic Compact Stars** at The Fifteenth Marcel Grossmann Meeting, University of Rome, 'La Sapienza', Rome, Italy, July 2, 2018.
6. **Gravitational Decoupled Stellar Configuration** at Sixth Italian-Pakistani Workshop on Relativistic Astrophysics, NUST, Islamabad, January 24, 2019.
7. **Stability of Charged Anisotropic Polytropes** at PU 1st International Conference on Gravitation and Cosmology, University of the Punjab, Lahore, January 28, 2019.
8. **Anisotropic Solutions for Stellar Configurations** at 22nd International Conference on Gravitation and Cosmology, Valencia, Spain, July 07-12, 2019.

WORKSHOPS, CONFERENCES and SEMINARS

2014

1. **Weekly Departmental Seminar Series,** Department of Mathematics, University of the Punjab, Lahore, since 2014.
2. **1st National Conference on Mathematical Sciences**, University of Malakand, Malakand, September 02-04, 2014.

2015

1. **International Conference on Relativistic Astrophysics,** Department of Mathematics, University of the Punjab, Lahore, February 10-14, 2015.
2. **14th Regional Conference on Mathematical Physics,** Quaid-e-Azam University, Islamabad, November 09-14, 2015.

2016

1. **Workshop on Relativistic Astrophysics and Cosmology**, COMSATS Institute of Information Technology, Lahore, November 24-25, 2016.
2. **One Day Conference on Gravitation and Cosmology**, Department of Mathematics, University of Punjab, Lahore, November 26, 2016.

2017

1. **Symposium on Recent Developments in Theoretical Physics,** Abdus Salam School of Mathematical Sciences, Lahore, November 22, 2017.

2018

1. **The Fifteenth Marcel Grossmann Meeting,** University of Rome, 'La Sapienza', Rome, Italy, July 01-07, 2018.

2019

1. **Sixth Italian-Pakistani Workshop on Relativistic Astrophysics**, NUST, Islamabad, January 24-26, 2019.
2. **PU 1ˢᵗ International Conference on Gravitation and Cosmology,** University of the Punjab, Lahore, January 27-31, 2019
3. **22ⁿᵈ International Conference on Gravitation and Cosmology,** Valencia, Spain, July 07-12, 2019.

2021

1. **4ᵗʰ PU International Conference on Gravitation and Cosmology**, University of the Punjab, Lahore, November 22-25, 2021.

LIST of PUBLICATIONS (INDEXED by ISI-JCR)

1. Sharif, M. and **Sadiq, S.**: *Effects of Charge on Conformally Flat Polytropes*, Can. J. Phys. **93,** 1420 (2015) (NRC Research Press).
2. Sharif, M. and **Sadiq, S.**: *Conformally Flat Polytropes for Anisotropic Cylindrical Geometry,* Can. J. Phys. **93,** 1583 (2015) (NRC Research Press).
3. Sharif, M. and **Sadiq, S.**: *Dynamics of Tilted Cylindrical Geometry, Astrophys. Space Sci*. Phys. **361**, 278 (2016) (Springer).
4. Sharif, M. and **Sadiq, S.**: *Electromagnetic Effects on Cracking of Anisotropic Polytropes,* Eur. Phys. J. C **76,** 568 (2016) (Springer).
5. Sharif, M. and **Sadiq, S.**: *Cracking in Charged Anisotropic Cylinder,* Mod. Phys. Lett. A **32,** 1750091 (2017) (Word Scientific).
6. Sharif, M. and **Sadiq, S.**: *Exact Anisotropic Polytropic Cylindrical Solutions,* Astrophys. Space Sci. **363**, 54 (2018) (Springer).
7. Sharif, M. and **Sadiq, S.**: *Study of Conformally Flat Polytropes with Tilted Congruence,* Int. J. Mod. Phys. D **27,** 1850063 (2018) (Word Scientific).
8. Sharif, M. and **Sadiq, S.**: *Gravitational Decoupled Charged Anisotropic Spherical Solutions*, Eur. Phys. J. C **78,** 410 (2018) (Springer).
9. Sharif, M. and **Sadiq, S.**: *Gravitational Decoupled Anisotropic Solutions for Cylindrical Geometry*, Eur. Phys. J. Plus **133,** 245 (2018) (Springer).
10. Sharif, M. and **Sadiq, S.**: *Stable Anisotropic Dissipative Quark Stars with Tilted Observer*, Mod. Phys. Lett. A **33,** 1850102 (2018) (Word Scientific).
11. Sharif, M. and **Sadiq, S.**: *Tidal Effects in Some Regular Black Holes*, J. Exp. Theor. Phys. **126,** 194 (2018) (Springer).
12. Sharif, M. and **Sadiq, S.**: *Cracking in Anisotropic Polytropic Models*, Mod. Phys. Lett. A **33,** 1850139 (2018) (Word Scientific).

13. Sharif, M. and **Sadiq, S.**: *Effects of Tilted Congruence on Spherical Compact Stars*, Chin. J. Phys. **56**, 2984 (2018) (Elsevier).
14. Sharif, M. and **Sadiq, S.**: *Study of Tilted Anisotropic Polytropes*, Int. J. Mod. Phys. D **28,** 1950051 (2019) (Word Scientific).
15. Sharif, M. and **Sadiq, S.**: *Study of Cylindrical Polytropes with Cosmological Constant*, J. Exp. Theor. Phys. **128**, 423 (2019) (Springer).
16. Sharif, M. and **Sadiq, S.**: *2+1-dimensional Gravitational Decoupled Anisotropic Solutions*, Chin. J. Phys. **60,** 279 (2019) (Elsevier).
17. Sharif, M. and **Sadiq, S.**: *Study* of *Gravitational Decoupled Anisotropic Solution*, Int. J. Mod. Phys. D **28**, 2040004 (2019) (Word Scientific).
18. Saleem, R., Zubair, M., Kramat, F., Aslam, M.I. and **Sadiq, S.**: *Anisotropic Stellar Solutions in Torsion-Trace Gravity under Karmarkar Condition,* Int. J. Geom. Methods Mod. Phys. **05**, 2250067 (2022) (Word Scientific).
19. **Sadiq, S.** and Saleem, R.: *Charged Anisotropic Gravitational Decoupled Strange Stars via Complexity Factor,* Chin. J. Phys. **79**, 348 (2022) (Elsevier).
20. Javed, F., **Sadiq, S.**, Mustafa, G. and Hussain, I.: *A comparative study of new generic wormhole models with stability analysis via thin-shell,* Phys. Scr. **97**, 125010 (2022) (IOP).
21. Ama-Tul-Mughani, Q., Saleem, R., us Salam, W. and **Sadiq, S.**: *Criticality and Phase Transition of Kerr-anti-de Sitter Black Hole with Quintessence and Cloud of Strings,* Accepted for publication in Astropart. Phys.**148**, 102820 (2023) .

THESIS SUPERVISION

1. *Stability of Compact Objects,* Sahar Farooq, 2022.
2. *Anisotropic Solution by Gravitational Decoupling,* Nosheen Naseer, 2022.
3. *Anisotropic Extension of Isotropic Solution,* Mahrukh Shahnawaz, 2022.

REFERENCES

1. Prof. Dr. Muhammad Sharif
   Head of Department of Mathematics and Statistics
   University of Lahore, Lahore
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   ⌨ msharif.math@pu.edu.pk
2. Dr. Aziz Ullah Awan
   Associate Professor
   Department of Mathematics
   University of the Punjab, Lahore
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