Dr. Muhammad Ilyas

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Gomal University D. I. Khan.
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Motivation

An enthusiastic, adaptive and fast-learning person with a broad and acute interest in the field of High Energy Physics and cosmology, I particularly enjoy collaborating with scientists from different disciplines to develop new skills and solve new challenges.

Education

2014-2018 **PhD Physics**, *Centre for High Energy Physics*, University of the Punjab, Lahore, Punjab, Pakistan.
Thesis Title: "Some Cosmological Aspects of Celestial Objects in Modified Gravity."
`http://prr.hec.gov.pk/jspui/handle/123456789/10210`

2011-2014 **M.Phil. Physics** , *Department of Physics*, Govt. College University, Lahore, Punjab, Pakistan.
Thesis Title: "Light Cone Gauge Quantization of Strings, Dynamics of D-Branes and String Dualities."

2008-2011 **M.Sc. Physics** , *Department of Physics*, University of Peshawar, Kpk, Pakistan.
Thesis Title: "Solar Wind and its interaction with solar system bodies."

Practical Exposure

Sep. 2019 - Present **Assistant Professor**, *Institute of Physics*, Gomal University, Dera Ismail Khan, Kpk, Pakistan.

Nov. 2019 - Feb. 2021 **Assistant Warden**, *Hostel No.6*, Gomal University, Dera Ismail Khan, Kpk, Pakistan.

ACADEMIC AND RESEARCH INTERESTS

Mathematical Methods for Physics, Quantum Mechanics, Mathematical Cosmology, Electromagnetism, Special and General Relativity, Modified Gravitational theories, Quantum gravity, supersymmetry, string theory and string cosmology etc.

RESEARCH FUNDING ACTIVITIES

Start-Up Research Grant Program (SRGP) 21-2681/SRGP/R&D/HEC/2020; Titled: **Some Features of Strange Compact Stars.**

ADDITIONAL ACADEMIC RECORD

2011 **B.ed**, *Physics and Mathematics*, A.I.O.U Islamabad..

2005 **O.L.E**, *High Proficiency in Urdu*, BISE Peshawar..

2003 **Computer Course**, Frontier College of Information Technology Tangi Charsadda..

CONFERENCE AND SEMINARS

- Participate in 6th winter meeting on particle and fields, 14-18 April 2014, NCP Islamabad, Pakistan.
- Participate in 13 national symposiums, frontiers in Physics, 19-21 Dec 2012, University of Peshawar.
- Participate in International Scientific Spring, 11-15 March 2013, NCP Islamabad, Pakistan.

- 7th International Meeting on Particles and Fields (IMPF 7, 2015)—Participant.
- International Symposium on Physics Beyond Standard Model (2015)—Participant.
- 1st International Meeting on Science and Society (IMSS-1, 2017)—Organizer/Participant.

AWARDS AND DISTINCTION
- Winner of General Physics Quiz Competition held in GCU Lahore 2012.

TALKS DELIVERED
- **Anisotropic Compact Stars in Modified $f(R)$ Gravity and Their Structural Properties** at 3rd International Conference on Recent Trends in Physics, Forman Christian College (A Chartered University), Lahore; April 11, 2025.
- **From Schwarzschild's solution to Black Holes** at Center for Computational Materials Science in collaboration with the Department of Physics, University of Malakand; July 18, 2024.
- **Exploring Stellar Structures in $f(R,T)$ Modified Gravity** at 4th NCPAM, Department of Mathematics, University of Sargodha, Pakistan; April 29, 2024.
- **Existence of Stable Stellar structures in $f(R,T)$ Gravity** at Center for Theoretical Physics and College of Physics, Jilin University, Changchun, 130012, China; June 16, 2020.
- **Existence of some stellar structure in modified gravity** at Centre for High Energy Physics, University of the Punjab, Lahore; Feb 16, 2018.
- **Light Cone Gauge Quantization of Strings, Dynamics of D-Branes and String Dualities** at Department of Physics, Govt. College University, Lahore; Dec, 03, 2013.

P.hD. Theses Supervised

2024-27 **Theses Title:**, *Investigations of Astrophysical Phenomena within Alternate Theories of Gravity*, Ubaid Zaman, (**In Progress**).
Department of Physics, University of Malakand, Dir (Lower), Chakdara, 18800, Pakistan

2018-22 **Theses Title:**, *Cosmological aspects of the extended theories of gravity*, Waheed Ur Rahman, (**PhD Defense 17 Nov 2022**).
Department of Physics, Abdul Wali Khan University, Mardan

2018-22 **Theses Title:**, *An exploration of modified theories of gravity and their cosmological consequences*, Abdul rauf athar (**PhD Defense 1 Feb 2025**).
CHEP, University of the Punjab, Lahore

M.Phil. Theses Supervised

2023-25 **Theses Title:**, *Effects of Variable Cosmological Constant on Anisotropic Stellar Structures*, Salma Nawaz.
Institute of Physics, Gomal University, D. I. Khan

2023-25 **Theses Title:**, *A Comparative study of superstring theories and string cosmology*, Sidra Marwat.
Institute of Physics, Gomal University, D. I. Khan

2023-25 **Theses Title:**, *Static Wormhole Solutions in Relativistic Gravitational Models*, Muhammad Tahir.
Institute of Physics, Gomal University, D. I. Khan

2023-25 **Theses Title:**, *Gravitational Dynamics and Energy Conditions in Higher Order Gravity*, Ijaz Ullah.
Institute of Physics, Gomal University, D. I. Khan

2022-24 **Theses Title:**, *Modified $f(R,T)$ Gravity Theories and High Density Celestial Objects in Karmarkar-Tolman Spacetime*, Aysha Siddiqui .
Institute of Physics, Gomal University, D. I. Khan

2022-24 **Theses Title:**, *Exploring the Behavior of Compact Star in Karmarkar Tolman Spacetime Under the Higher order Gauss-Bonnet Gravity*, Natasha Saleem.
Institute of Physics, Gomal University, D. I. Khan

2022-24 **Theses Title:**, *Influence Of Modification Of Higher Order Gauss-Bonnet Gravity On Static Spherical wormhole Models*, Noreen Mukhtar .
Department of Mathematics, University of Narowal, Narowal

2022-24 **Theses Title:**, *Exploring the dynamics of Non-Commutative Wormhole in Higher order Gauss-Bonnet gravity*, Amisha Riaz.
Department of Mathematics, University of Narowal, Narowal

2022-24 **Theses Title:**, *Modified $f(R,T)$ Gravity Theories and High Density Celestial Objects in Finch-Skea Spacetime*, Iram Shahzadi.
Department of Physics, University of Narowal, Narowal

2022-24 **Theses Title:**, *Exploring The Behavior Of Comact Stars In Finch-skea Space Time Under High Order Gauss Bonnet Gravity*, Rabia Mubarak .
Department of Physics, University of Narowal, Narowal

2022-24 **Theses Title:**, *Exploring the Dynamics of Non-Commutative Wormholes in $f(G)$ Gravity*, Muhammad Tauqeer .
Institute of Physics, Gomal University, D. I. Khan

2022-24 **Theses Title:**, *The Role Of Curvature Scalar in Bouncing Cosmology within $f(R)$ Gravity*, Sabahat Mahnoor .
Institute of Physics, Gomal University, D. I. Khan

2022-24 **Theses Title:**, *Exploring the Viability of Bouncing Cosmology in $f(G)$ Gravity*, Syeda Eman Rubab .
Institute of Physics, Gomal University, D. I. Khan

2022-24 **Theses Title:**, *Anisotropic Charged Compact Objects In Krori-Barua Spacetime Under $f(R,G)$ Gravity*, Asma Anfal .
Institute of Physics, Gomal University, D. I. Khan

2020-22 **Theses Title:**, *Exploring the Stability Of Gravastars in Modified $f(G,T)$ Gravity*, Muhammad Tahir .
Institute of Physics, Gomal University, D. I. Khan

2020-22 **Theses Title:**, *New Rotating Ads/Ds Black Hole Solutions in Modified $f(R)$ Gravity*, Mujeeb Ur Rehman .
Institute of Physics, Gomal University, D. I. Khan

2021-23 **Theses Title:**, *The Role Of Higher Order Curvature Corrections In Shaping The Bouncing Behaviour In $F(R)$ Gravity*, Tooba Leghari.
CHEP, University of the Punjab, Lahore

2020-22 **Theses Title:**, *Relativistic Charged Sphere in Modified Gravity*, M. Shoaib Ali Jamshaid.
CHEP, University of the Punjab, Lahore

2020-22 **Theses Title:**, *Different Aspects Of Relativistic Charged Compact Stars In Modified Gravity*, Asma Bibi .
Institute of Physics, Gomal University, D. I. Khan

2020-22 **Theses Title:**, *Influence of modifications of gravity on static spherical wormhole models*, Nasreen Ghafoor .
Institute of Physics, Gomal University, D. I. Khan

2020-22 **Theses Title:**, *Bounds on Modified $f(R,G,T)$ Gravity Models from Energy Conditions*, Muhammad Wasif .
Institute of Physics, Gomal University, D. I. Khan

2019-21 **Theses Title:**, *The quantum field theoretic modifications to general relativity*, Muhammad Asghar.
CHEP, University of the Punjab, Lahore

2014-21 **Theses Title:**, *Modeling of Compact Relativistic charged spheres in Gauss-bonnet gravity*, Saeed Nawaz (117-DS-94).
Institute of Physics, Gomal University, D. I. Khan

B.S Theses Supervised

2021-25 **Theses Title:**, *Anisotropic compact stars in general relativity*, Arooba Abr e Rahmat.
Institute of Physics, Gomal University, D. I. Khan

2016-20	**Theses Title:**, *General Relativity and the Spacetime of a Cosmic String with Inner Structure*, Usman Ali (3716 BM) and M. Shoaib Ali Jamshaid (2916 BM).
	CHEP, University of the Punjab, Lahore
2017-21	**Theses Title:**, *Stability of charged compact stars*, Areesha Mariyam and Syeda Muhtashim Gul .
	Institute of Physics, Gomal University, D. I. Khan
2017-21	**Theses Title:**, *Relativistic anisotropic compact stars in karmarkar spacetime*, M. Arif and Syed Sadeem shah .
	Institute of Physics, Gomal University, D. I. Khan
2018-22	**Theses Title:**, *Introduction to General Relativity and Neutron Stars*, Wajiha Fatima and Sana Bibi.
	Institute of Physics, Gomal University, D. I. Khan
2018-22	**Theses Title:**, *Introduction to General Relativity and Cosmology*, Abida Iqbal and Hira Javed.
	Institute of Physics, Gomal University, D. I. Khan
2019-23	**Theses Title:**, *Compact Star In Krori Burua Spacetime*, Umar Daraz.
	Department of Physics, University of Narowal, Narowal

M.Sc. Theses Supervised

2019-21	**Theses Title:**, *General Relativity And Super Massive Black-Hole*, Misbah Rehman, M. Bilal, and M. Ali.
	Institute of Physics, Gomal University, D. I. Khan
2019-21	**Theses Title:**, *General Relativity And Inflationary Universe*, M. Adnan, M. Atif, M. Arsalan and Sher Rehman.
	Institute of Physics, Gomal University, D. I. Khan
2020-22	**Theses Title:**, *Mathematical Modeling Of Charged Compact Stars In General Relativity*, M. Idrees.
	Institute of Physics, Gomal University, D. I. Khan
2020-22	**Theses Title:**, *Introduction To Relativity And Some Of Its Applications*, Zainab Ali Haider & IQRA REHMAN.
	Institute of Physics, Gomal University, D. I. Khan
2020-22	**Theses Title:**, *Introduction To Relativity And Some Of Its Applications*, Rouqyya Shabbir.
	Institute of Physics, Gomal University, D. I. Khan
2020-22	**Theses Title:**, *Introduction To General Relativity And Its Application To Oscillatory Universe*, Muhammad Umar Majeed & Muhammad Usman Ghani.
	Institute of Physics, Gomal University, D. I. Khan
2020-22	**Theses Title:**, *Applications Of General Relativity In Astrophysics*, Abrar Ul Haq & Imrana Bibi.
	Institute of Physics, Gomal University, D. I. Khan
2020-22	**Theses Title:**, *A Description Of Relativity And Its Implication For The Big Bang Theory*, Manzar Abbas, Muhammad Zahid Hayat And Fraz Ahmad.
	Institute of Physics, Gomal University, D. I. Khan

Skills/Interests

Language: Fluency in English

IT:

Proficient in Microsoft Office as a tool for preparation of business reports, spread sheets, general correspondence, presentations, composing scanning printing, installation and troubleshooting Hardware, Software, windows and Internet.

Mathematica:

Uses the power of Mathematica to go beyond "textbook" solutions and bring the problems alive with animations, and other graphical tools. Covers essential problems in: mechanics, electrodynamics, quantum mechanics, special and general relativity, cosmology, elementary circuits, oscillating Systems.

Latex:

To write and create thesis, research articles etc. using LateX.

Interests: I have great interest in traveling around the world, particularly antiquity places. I enjoy reading science books

▬▬ Publications

2025 **M Ilyas**, Nehad Ali Shah, Fawad Khan, and Rashid Habib. Dynamics of compact objects in higher-order curvature gravity using Finch–Skea spacetime. *The European Physical Journal C*, 85(3):253, 2025.

2025 **M Ilyas**, Maha, Salma Nawaz, Falak Sher, and Fawad Khan. Impact of a variable cosmological constant on stellar matter configurations in Finch-Skea spacetime. *Astrophysics and Space Science*, 370(5):1–11, 2025.

2025 WU Rahman and **M Ilyas**. Exploring Compact Anisotropic Stars in $f(R)$ Gravity within Karmarkar-Tolman Space-time Framework. *International Journal of Geometric Methods in Modern Physics*, 2025.

2025 Fawad Khan, **M. Ilyas**, Muhammad Idrees, Inam Ullah, and Sikander Azam. Tunable Electronic, Optical, Thermoelectric and Photocatalytic Properties of Janus XBYO (X= S, Se, Te; Y= Al, Ga) Monolayers: A DFT-Based Prediction. *Materials Chemistry and Physics: Sustainability and Energy*, page 100023, 2025.

2025 Fawad Khan, Maiman Gul, **M. Ilyas**, Syed Zuhair Abbas Shah, Manel Essid, and Mohamed Abboud. Influence of biaxial strain on the structural, electronic, optical and thermoelectric properties of the AMoGeN2 (A= S, Se) monolayer: A first-principles investigation. *Materials Science and Engineering: B*, 317:118216, 2025.

2025 Naveed Iqbal, S Khan, Mohammad Alshammari, Wael W Mohammed, and **M Ilyas**. Nonmetricity-based hybrid self-gravitating compact stars with embedded class-one symmetry. *The European Physical Journal C*, 85(4):1–17, 2025.

2025 Naveed Iqbal, M Amir, Mohammad Alshammari, Wael W Mohammed, and **M Ilyas**. Influence of charge on the cracking and complexity of self-gravitating dissipative objects. *The European Physical Journal C*, 85(4):1–12, 2025.

2025 M Hanif, A Ali, A Ahmed, **M Ilyas**, and KH Shah. NULL CARTAN CURVE'S GENERALIZED INVOLUTE AND EVOLUTE CURVE COUPLE IN E_1^4. *Palestine Journal of Mathematics*, 14(1), 2025.

2024 **M Ilyas**, Sobia Khan, AR Athar, Fawad Khan, Rohna Iqbal, Haifa I Alrebdi, Kottakkaran Sooppy Nisar, and Abdel-Haleem Abdel-Aty. Non-Commutative Geometries and Wormhole Solutions in $f(G)$ Gravity. *International Journal of Geometric Methods in Modern Physics*, 2024.

2024 **M Ilyas**, Fawad Khan, Iftikhar Ahmad, and Syeda Eman Rubab. Probing bounce dynamics via Higher-Order Gauss-Bonnet modifications. *Physica Scripta*, 2024.

2024 **M Ilyas**, AR Athar, Fawad Khan, Nasreen Ghafoor, Haifa I Alrebdi, Kottakkaran Sooppy Nisar, and Abdel-Haleem Abdel-Aty. Some specific wormhole solutions in extended $f(R,G,T)$ gravity. *International Journal of Modern Physics D*, page 2450019, 2024.

2024 **M Ilyas**. Gravastars in $f(R,G,T)$ Gravity. *Canadian Journal of Physics*, 2024.

2024 Fawad Khan, **M. Ilyas**, Bakhtawar Khan, Riaz Ullah, Zafar Iqbal, Haleem Ud Din, Azhar Iqbal, et al. Unveiling the strain induced electronic optical and thermoelectric properties of monolayer SMoSiN2 and SeMoSiN2. *Applied Physics A*, 130(11):1–12, 2024.

2024 Fawad Khan, Shah Haidar Khan, Iftikhar Ahmad, Bin Amin, Nouman Saeed, and **M. Ilyas**. Quantum computational analysis of strain induced electronic and thermoelectric properties of H phase and T phase coupled TMDs van der Waal heterostructures. *Chemical Papers*, pages 1–12, 2024.

2024 Fawad Khan, Iftikhar Ahmad, Bin Amin, **M. Ilyas**, Fida Rehman, and Mehwish Ali. Density functional theory-based quantum-computational strain engineering of electronic and thermoelectric properties of AsXY (X= S, Se and Y= Cl, Br, I) monolayer. *Surface Review and Letters*, 2024.

2024 Fawad Khan, Iftikhar Ahmad, Bin Amin, **M. Ilyas**, Sidra Khalid, Misbah Anwar Fatima, et al. Density functional theory-based strain engineering of electronic optical and thermoelectric properties of $A_2OX (A = Ga$, in and $X = S, Se)$ monolayers. *Applied Physics A*, 130(6):1–11, 2024.

2023   Hao Xu, **M Ilyas**, and Yong-Chang Huang. Holographic Schwinger effect with a rotating probe D3-brane. *Advances in High Energy Physics*, 2023(6614276):11, 2023.

2023   **M Ilyas**, Fawad Khan, Iftikhar Ahmad, Rohna Iqbal, and Sobia Khan. Exploring the viability of static spherical wormholes in $f(G,T)$ gravity. *The European Physical Journal Plus*, 138(10):1–17, 2023.

2023   **M Ilyas** and Rohna Iqbal. Compact Relativistic Sphere with Charged Anisotropic Matter in $f(R,G)$ Gravity. *International Journal of Geometric Methods in Modern Physics*, 20(13):2350230, 2023.

2023   **M Ilyas** and Kazuharu Bamba. Traversable wormholes with static spherical symmetry and their stability in higher-curvature gravity. *Journal of Cosmology and Astroparticle Physics*, 2023(10):038, 2023.

2023   **M Ilyas**, AR Athar, Fawad Khan, and Asma Anfal. Effects of $f(R,G)$ gravity on anisotropic charged compact objects. *Physica Scripta*, 98(9):095011, 2023.

2023   **M Ilyas**, AR Athar, and Asma Bibi. Charged compact stars in extended $f(R,G,T)$ gravity. *New Astronomy*, 103:102053, 2023.

2023   **M Ilyas** and AR Athar. Oscillating quintom scenario with time-dependent periodic deceleration parameter. *Modern Physics Letters A*, 39:2350171, 2023.

2023   **M Ilyas**, Aftab Ahmad, Fawad Khan, and M Wasif. Energy conditions in extended $f(R,G,T)$ gravity. *Physica Scripta*, 98(1):015016, 2023.

2023   Shafaq Riaz, Maiman Gul, Fawad Khan, Iftikhar Ahmad, and **M Ilyas**. Effect of strain and stacking on electronic structure, optical and photocatalytic performance of monolayer $XO2(X = Ti, Ni$ and $Ge)$. *Applied Physics A*, 129(8):1–10, 2023.

2023   Fawad Khan, Iftikhar Ahmad, Bin Amin, Muhammad Idrees, Sheraz Ahmad, Tabassum Nasir, **M. Ilyas**, and Nabeela Shehzeen. Density functional theory-based quantum-computational analysis on the strain-assisted electronic and photocatalytic properties of BX-MSSe (X= P, As and M= Mo, W) heterostructures. *Applied Physics A*, 129(3):192, 2023.

2023   AR Athar, **M Ilyas**, and Bilal Masud. Anisotropic strange compact stars in Krori–Barua spacetime under $f(R,G)$ gravity. *International Journal of Geometric Methods in Modern Physics*, 20(01):2350003, 2023.

2022   **M Ilyas**, W. U. Rahman, S. Ullah, F. Khan, H. Ullah, and R. khan. Wormhole Solutions Through hyperbolic Model in $f(R,T)$ Gravity. *International Journal of Modern Physics D*, 2022.

2022   **M Ilyas**, A. R. Athar, Z. Yousaf, Bilal Masud, and Fawad Khan. The bouncing behavior in $f(R)$ gravity. *Indian Journal of Physics*, 2022.

2022   **M Ilyas** and A R Athar. Some specific wormhole solutions in $f(R,T)$ gravity. 97(4):045003, mar 2022.

2022   Saheefa Rasheed, Sheraz Ahmad, Bin Amin, Fawad Khan, Tabassum Nasir, **M Ilyas**, and Iftikhar Ahmad. Strain effect on the electronic and photocatalytic properties of $GaN - MSSe(M = Mo, W)$. *Journal of Solid State Chemistry*, 306:122798, 2022.

2022   WU Rahman, **M Ilyas**, Z Yousaf, S Ullah, F Khan, and R Khan. Compact relativistic geometries in $f(R,G)$ gravity. *International Journal of Geometric Methods in Modern Physics*, 19(08):2250126, 2022.

2022   A Khan, SSA Shah, K Shehzad, S Naseem, **M Ilyas**, J Iqbal, F Khan, H Ullah, S Ullah, et al. Carbon Nanotubes: Smart Materials for the Active Elimination of Electromagnetic Interference. *Iranian Journal of Science and Technology, Transactions A: Science*, pages 1–12, 2022.

2021   **M Ilyas** and WU Rahman. Bounce cosmology in $f(\mathcal{R})$ gravity. *The European Physical Journal C*, 81(2):1–9, 2021.

2021   **M Ilyas**, AR Athar, and Bilal Masud. Relativistic charged sphere in $f(G,T)$ gravity. *International Journal of Geometric Methods in Modern Physics*, 18(10):2150152, 2021.

2021   **M Ilyas**. Compact stars in $f(R,G,T)$ gravity. *International Journal of Modern Physics A*, 36(24):2150165, 2021.

2020   Z Yousaf, A Ikram, **M Ilyas**, and MZ Bhatti. Existence of dynamical wormholes in $f(R)$ gravity. *Canadian Journal of Physics*, 98(5):474–483, 2020.

2020   **M Ilyas**. Compact stars with variable cosmological constant in $f(\mathcal{R}, \mathcal{T})$ gravity. *Astrophysics and Space Science*, 365(11):1–11, 2020.

2019   **M Ilyas**, Z Yousaf, and MZ Bhatti. Bounds on higher derivative $f(R, \Box R, T)$ models from energy conditions. *Modern Physics Letters A*, page 1950082, 2019.

2019   **M Ilyas**. Energy Conditions in Non-local Gravity. *International Journal of Geometric Methods in Modern Physics*, 16(10):1950149, 2019.

2018   Z Yousaf, M Sharif, **M Ilyas**, and MZ Bhatti. Energy conditions in higher derivative $f(R, \Box R, T)$ gravity. *International Journal of Geometric Methods in Modern Physics*, page 1850146, 2018.

2018   Z Yousaf, MZ Bhatti, and **M Ilyas**. Existence of compact structures in $f(R, T)$ gravity. *The European Physical Journal C*, 78(4):307, 2018.

2018   **M Ilyas**. Charged compact stars in $f(\mathcal{G})$ gravity. *The European Physical Journal C*, 78(9):757, 2018.

2018   MZ Bhatti, Z Yousaf, and **M Ilyas**. Existence of wormhole solutions and energy conditions in $f(R, T)$ gravity. *Journal of Astrophysics and Astronomy*, 39(6):69, 2018.

2018   MZ Bhatti, M Sharif, Z Yousaf, and **M Ilyas**. Role of $f(G, T)$ gravity on the evolution of relativistic stars. *International Journal of Modern Physics D*, 27(04):1850044, 2018.

2017   Z Yousaf, **M Ilyas**, and MZ Bhatti. Static spherical wormhole models in $f(R, T)$ gravity. *The European Physical Journal Plus*, 132(6):268, 2017.

2017   Z Yousaf, **M Ilyas**, and MZ Bhatti. Influence of modification of gravity on spherical wormhole models. *Modern Physics Letters A*, 32(30):1750163, 2017.

2017   Z Yousaf, M Sharif, **M Ilyas**, and MZ Bhatti. Influence of $f(R)$ models on the existence of anisotropic self-gravitating systems. *The European Physical Journal C*, 77(10):691, 2017.

2017   **M Ilyas**, Z Yousaf, MZ Bhatti, and Bilal Masud. Existence of relativistic structures in $f(R, T)$ gravity. *Astrophysics and Space Science*, 362(12):237, 2017.

2017   MZ Bhatti, Z Yousaf, and **M Ilyas**. Evolution of compact stars and dark dynamical variables. *The European Physical Journal C*, 77(10):690, 2017.

2017   Kazuharu Bamba, **M Ilyas**, MZ Bhatti, and Z Yousaf. Energy conditions in modified $f(G)$ gravity. *General Relativity and Gravitation*, 49(8):112, 2017.

▬▬ References

○ **Dr. Kazuharu Bamba** (Professor, Faculty of Symbiotic Systems Science, Fukushima University, Fukushima, 960-1296, Japan)
Email: bamba@sss.fukushima-u.ac.jp

○ **Dr. Bilal Masud** (Professor & Director, Centre for High Energy Physics, University of the Punjab, Lahore, Pakistan.)
Email: bilalmasud.chep@pu.edu.pk

○ **Dr. Zeeshan Yousaf** (Associate Professor, Department of Mathematics, University of the Punjab, Lahore, Pakistan.)
Email: zeeshan.math@pu.edu.pk

○ **Dr. Muhammad Zaeem-ul-Haq Bhatti** (Associate Professor, Department of Mathematics, University of the Punjab, Lahore, Pakistan.)
Email: mzaeem.math@pu.edu.pk