

Dr. MUHAMMAD ZAFARULLAH BABER

Contact Information

Phone: (+92)341-7118929
E-mail: zafarullah8883@gmail.com
ORCID: 0009-0001-4271-6272
Chak 222/9r Tehsil Fort Abbas,
District Bahawalnagar.



Research Interest

I have an interest in applied mathematics with a special focus on problems arising in engineering and physical sciences. My research covers the areas of Prey-Predator interactions, Epidemiology, Hopf Bifurcation, Numerical Stability, Turing Pattern, Stability Regions, Mathematical analysis, Nonlinear problems of heat, wave and steady states, Soliton solutions, stochastic analysis of nonlinear PDEs and Existence of solutions etc.

Postdoc

Shanghai University, China.

2025-2027

Education

The University of Lahore, Lahore, Punjab, Pakistan.
Doctor of Philosophy in Mathematics

2021-2024

Ph.D. Dissertation Title

A Comparative Study of Nonlinear Stochastic Partial Differential Equations for Elevating the Environment and Society

Technical Skills

MS Word, LaTeX, MATLAB, Mathematica, Maple.

Experience

Teaching as an Assistant Professor

24-04-2025 – till Date

University of Lahore, Sargodha Campus,
Punjab, Pakistan.

Teaching as a Visiting Lecturer

16-02-2021 – 11-April-2025

University of Narowal, Narowal,
Punjab, Pakistan.

The new Punjab Cadet High School,

Sep 2017 – Feb 2021

Lahore, Punjab, Pakistan.

Publication

No.	Authors	Title	Journal Name	Vol. No.# & Publication Date	QS Rank & I.F
1	Muhammad Zafarullah Baber, Shafee, A., Ceesay, B., & Ahmed, N.	Dynamical analysis of lump, breather, M-shaped and other wave profiles propagating in a nonlinear PDE describing the nonlinear low-pass electrical transmission lines	<i>Scientific Reports</i>	Vol. & 28-03-2026	W(Q1) & 3.9
2	Yasin, M. W., Shafee, A., Muhammad Zafarullah Baber*, & Ceesay, B.	Bifurcation and Stability of a Spatiotemporal Prey–Predator Model: A Computational Perspective.	<i>Computational and Mathematical Methods</i>	Vol. 2026(1) & 15-03-2026	W(Q3) & 1.2

3	Ahmed, N., Macías-Díaz, J. E., Umer, S., Muhammad Zafarullah Baber Raza, A., & Medina-Guevara, M. G.	Closed-Form Exact Solitary-Wave Solutions for the Time-Fractional Rosenau-KdV-RLW Equation	<i>Mathematical Methods in the Applied Sciences.</i>	Vol. & 19-02-2026	W(Q1) & 1.8
4	Ali, R. S., Macías-Díaz, J. E., Talib, N., Saif, H., Muhammad Zafarullah Baber , Ahmed, N., & Gallegos, A.	An Advanced Study of Hermite–Hadamard and Trapezoid-Type Inequalities via Generalized Convexity and Fractional Double Integral Operators.	<i>European Journal of Pure and Applied Mathematics</i>	Vol. 19(1) & 16-02-2026	X(Q3) & 1.2
5	Nawaz, S., Shahzad, T., Rezazadeh, H., Hosseinzadeh, M. A., Ahmed, M. O., & Muhammad Zafarullah Baber ,	Impact of noise on the optical soliton solutions for the stochastic cascaded system with Kerr law nonlinearity.	<i>Optical and Quantum Electronics</i>	Vol. 58(3) & 14-02-2026	--- & 4.0
6	Ceesay, B., Muhammad Zafarullah Baber , Sulaiman, T. A., Bayram, M., Mohammed, W. W., Emadifar, H., & Ahmed, K. K.	Exact soliton and interaction solutions of the Estevez-Mansfield-Clarkson equation	<i>Results in Engineering</i>	Vol. 20-01-2026	X(Q1) & 7.9
7	Nawaz, S., Ahmad, M. O., Ahmed, N., Njie, T., & Muhammad Zafarullah Baber*	Investigation of closed form solitons for the stochastic Chavy-Waddy-Kolokolnikov equation in bacterial aggregation.	<i>Scientific Reports</i>	Vol. 16 & 15-01-2026	W(Q1) & 3.9
8	Muhammad Zafarullah Baber , Yasin, M. W., Ahmed, N., Arif, K., & Ceesay, B.	Optical wave propagation in magneto-optic waveguides with generalized anti-cubic model.	<i>Science Progress</i>	Vol. 109(1) & 14-01-2026	W(Q1) & 2.9
9	Ahmed, N., Macías, S., Macías-Díaz, J. E., Ghazanfar, S., Zunaira, A., Muhammad Zafarullah Baber & Gallegos, A.	Solitonic Dynamics in the Westervelt Equation for Ultrasound Imaging Through the Exponential Expansion Method	<i>Mathematical Methods in the Applied Sciences.</i>	Vol. & 11-01-2026	W(Q1) & 1.8
10	Javed, N., Ahmed, N., Muhammad Zafarullah Baber , Sulaiman, T. A., Radwan, T., Khalifa, A. S., & Ahmed, K. K.	Exact Solitary Wave Solutions in Nonlinear Carbon Nanotube Composite Beams on Viscoelastic Foundations Under M-Truncated Derivative.	<i>Journal of Mathematics</i>	Vol. 2026(1) & 03-01-2026	W(Q3) & 1.3
11	Qasim, M., Shafee, A., Yao, F., & Muhammad Zafarullah Baber*	Dynamics of soliton solutions for the (3+ 1)-dimensional CTFZK equation in plasma physics using an advanced neural networking approach	<i>Zeitschrift für angewandte Mathematik und Physik</i>	Vol. 77(1) & 26-12-2025	W(Q1) & 1.6
12	M. Qasim, F. Yao, Muhammad Zafarullah Baber , N. Ahmed, J.E. Macias-Diaz & S. Macias	M-Lump, Lump-Breather, and Periodic Lump-Type Solutions for the 3D Sixth-Order KPSKR Equation Via the Improved Bilinear Neural Network Method, https://doi.org/10.30546/1683-6154.24.4.2025.647	<i>Applied and computational mathematics</i>	Vol. 26(4) & 28-11-2025	W(Q1) & 4.3
13	Shahzad, T., Macías, S., Macías-Díaz, J. E., Muhammad Zafarullah Baber , Ahmad, M. O., Ahmed, N., & Yasin, M. W.	Soliton-Like Solutions and Determination of Unique Physical Problems for the Nonclassical Sobolev-Type Equation in Fluid Dynamics.	<i>Mathematical Methods in the Applied Sciences</i>	<i>Special Issue</i> & 03-12-2025	W(Q1) & 1.8

14	Ahmed, N., Alsulami, M., Muhammad Zafarullah Baber , Umer, S., Akgul, A., & Raza, A.	Investigation of closed form solitary wave solutions for the coupled non-linear reaction-diffusion model.	<i>Thermal Science</i>	29(6 Part A) & 01-12-2025	W(Q4) & 1.1
15	Ahmed, N., Umer, S., Baleanu, D., Muhammad Zafarullah Baber , Akgul, A., Raza, A., & Taha, H. H.	Analytical soliton solutions of the fractional perturbed Gerdjikov-Ivanov equation using the jacobi elliptic function expansion method	<i>Thermal Science</i>	29(6 Part A) & 01-12-2025	W(Q4) & 1.1
16	Javed, N., Ahmed, N., Ceesay, B., & Muhammad Zafarullah Baber .	Abundant Families of Explicit Solitary Wave Structure for the Time-Fractional Nonlinear Electrical Transmission Line Model With Its Modulation Instability.	<i>Advances in Mathematical Physics</i>	Vol. 2025(1) & 08-11-2025	W(Q3) & 1.1
17	Yasin, M. W., Akhtar, M., Alazab, M., Inc, Muhammad Zafarullah Baber , Iqbal, M. S., & Rezapour, S	Spatiotemporal dynamics of a reaction-diffusion nutrient-algae model	<i>Modeling Earth Systems and Environment</i>	Vol 12(1) & 11-11-2025	X(Q1) & 2.7
18	Mohammed, N. A., Shahid, N., Shaikh, T. S., Ahmed, N., Ghafoor, F., Muhammad Zafarullah Baber , ... & Koh, W. S.	New Bright Soliton and Kink Wave Solutions for a Nonlinear Evolution Equation.	<i>European Journal of Pure and Applied Mathematics</i>	Vol. 18(4) & 05-11-2025	X(Q3) & 1.2
19	Ahmed, N., Zunaira, Ceesay, B., Muhammad Zafarullah Baber & Ghazanfar, S.	Nonlinear wave dynamics and soliton solutions of the Rosenau equation with conformable fractional derivatives.	<i>Journal of Algorithms & Computational Technology</i>	Vol. 9 & 14-11-2025	X(Q3) & 1.2
20	Mohammed, W. W., Yasin, M. W., Waqas, M., Khalifa, A. S., Muhammad Zafarullah Baber , Radwan, T., & Ahmed, K. K.	Stochastic predator–prey interactions with disease dynamics: fixed point and numerical investigations	<i>Boundary Value Problems</i>	Vol. 2025(1) & 19-11-2025	W(Q2) & 1.7
21	Arshad, A., Yasin, M. W., Saeed, I., Ahmed, N., Bittaye, E., & Muhammad Zafarullah Baber .	Optical closed form soliton structures for the Kuralay-II equation in nonlinear optical complex media.	<i>Scientific Reports</i>	Vol. 15(1) & 30-10-2025	W(Q1) & 3.9
22	Farooq, U., Chaudhry, F., Muhammad Zafarullah Baber , Abbas, W., Sulaiman, T. A., & Bayram, M.	Exploring the fault-tolerant metric dimension (FTMD) of the M-polynomial for zigzag edge coronoids fused with starphene	<i>Modern Physics Letters B</i>	Vol. 39(36) & 30-10-2025	W(Q3) & 2.2
23	Hassaballa, A. A., Muhammad Zafarullah Baber , Butt, A., Yasin, M. W., Safdar, R., & Bittaye, E.	Dynamical description and analytical study of traveling wave solutions for generalized Benjamin-Ono equation.	<i>Scientific Reports</i>	Vol. 15(1) & 30-09-2025	W(Q1) & 3.9
24	Birkea, F. M., Yasin, M. W., Ahmed, N., Muhammad Zafarullah Baber , Safdar, R., & Bittaye, E.	Investigating a one-dimensional Lengyel–Epstein system under the influence of multiplicative time noise.	<i>Discover Applied Sciences</i>	Vol. 7(10) & 09-10-2025	X(--)
25	Qasim, M., Yao, F., Ismael, H. F., Muhammad Zafarullah Baber ., & Sulaiman, T. A.	Dynamics of N-soliton waves, lump-breathers, and M-lump collision with improved bilinear neural network method.	<i>the European Physical Journal Plus</i>	Vol. 140(9) & 02-09-2025	W(Q1) & 2.8

26	Ahmed, N., Ghazanfar, S., Muhammad Zafarullah Baber. , Khan, I., Oqilat, O., & Kohh, W. S.	Compatibility of solitons within the frame work of Estevez-Mansfield-Clarkson equation.	<i>Differential Equations in Applied Mathematics</i>	Vol. 15 & 09-09-2025	W(Q2) & --
27	Ali, M., Riaz, M. B., Ahmed, N., Muhammad Zafarullah Baber. , & Akgül, A.	Dynamical wave structures for time-fractional (3+ 1)-dimensional p-type model via two improved techniques.	<i>Differential Equations in Applied Mathematics</i>	Vol. 16 & 29-09-2025	W(Q2) & --
28	Ceesay, B., Macías, S., Muhammad Zafarullah Baber. , Ahmed, N., Román-Loera, A., & Macías-Díaz, J. E.	Soliton-like solutions for a nonlinear doubly dispersive equation in an elastic Murnaghan's rod via Hirota's bilinear method.	<i>Open Physics</i>	Vol. 23(1) & 10-09-2025	W(Q3) & 1.8
29	Nawaz, S., Ahmed, M. O., Muhammad Zafarullah Baber. , Bittaye, E., & Yasin, M. W.	Explicit solitary wave structure for the stochastic resonance nonlinear Schrödinger equation under Brownian motion with dynamical analysis	<i>Scientific Reports</i>	Vol. 15(1) & 29-08-2025	W(Q1) & 3.9
30	Muslim, H., Ahmed, N., Macías, S., Ahmed, M. O., Muhammad Zafarullah Baber. , Ceesay, B., & Macías-Díaz, J. E.	On the analytical solution of the nonlinear strain wave equation through the bilinear neural network method.	<i>Evolutionary Intelligence,</i>	Vol. 18(5) & 28-08-2025	X (Q2) & 2.6
31	Ahmed, N., Yasin, M. W., Iqbal, M. S., Ceesay, B., & Muhammad Zafarullah Baber. ,	Optimal and Computational Analysis Under the Noisy Environment in Biological Processes: The Stochastic Schnakenberg Model	<i>Journal of Nonlinear Mathematical Physics</i>	Vol. 32(1) & 25-08-2025	W(Q3) & 1.6
32	Ahmed, N., Ghazanfar, S., Muhammad Zafarullah Baber. , & Ceesay, B.	Analytical solutions and implications for hydrodynamics and nonlinear optics	<i>AIP Advances</i>	Vol. 15(8) & 06-08-2025	W(Q3) & 1.4
33	Muhammad Zafarullah Baber. , Bittaye, E., Ahmad, H., Ceesay, B., & Ahmed, N.	Dynamical behavior of synchronized symmetric waves in the two-mode Chaffee-Infante model via Hirota bilinear transformation.	<i>Results in Engineering</i>	Vol. 27 & 30-07-2025	X(Q1) & 7.9
34	Ceesay, B., Ahmed, N., Muhammad Zafarullah Baber. , Iqbal, Z., & Akgül, A.	Constructing various wave symmetries on the blood flow and arterial wall motion model using the Hirota bilinear method	<i>Results in Engineering</i>	Vol. 27 & 30-07-2025	X(Q1) & 7.9
35	Muhammad Zafarullah Baber. , Shahzad, T., Mohammed, W. W., Ahmed, N., Ceesay, B., & Yasin, M. W.	Impact of Brownian motion on the optical soliton solutions for the three component nonlinear Schrödinger equation	<i>Scientific Reports</i>	Vol. 15(1) & 16-07-2025	W(Q1) & 3.8
36	Qasim, M., Yao, F., & Muhammad Zafarullah Baber* .	Exploring breather, M-lump, lump interaction, and rogue wave phenomena for the constant coefficients (2+ 1)-dimensional Graphene sheets equation via neural networking	<i>Nonlinear Dynamics</i>	Vol. & 17-07-2025	W(Q1) & 5.9
37	Yasin, M. W., Ahmed, N., Ali Akgul, Muhammad Zafarullah Baber, & Yao Fengping	Bifurcation analysis and turing instability of the ecological model having Beddington–Deangelis-type functional response	<i>Modeling Earth Systems and Environment</i>	Vol. 11(5) & 19-07-2025	X(Q1) & 2.7

38	Taskeen, A., Ahmed, M. O., Muhammad Zafarullah Baber , Ceessay, B., & Ahmed, N.	Bifurcation, Chaotic, Sensitivity Analysis, and Optical Soliton Profiles for the Spin Hirota–Maxwell–Bloch Equation in an Erbium-Doped Fiber	<i>Advances in Mathematical Physics</i>	Vol. 2025(1) & 12-07-2025	W(Q3) & 1.1
39	Ahmed, N., Macías-Díaz, J. E., Ali, M., Shahid, N., Muhammad Zafarullah Baber & Macías, S.	Nonlinear traveling-wave solutions of a fractional Schrödinger system through a Kumar–Malik-like approach	<i>Boletín de la Sociedad Matemática Mexicana</i>	Vol. 31(2) & 15-07-2025	W(Q2) & 0.8
40	Ceessay, B., Muhammad Zafarullah Baber , Ahmed, N., Shahid, N., Macías, S., & Macías-Díaz, J. E.	Abundant wave symmetries in the (3+ 1)-dimensional Chafee–Infante equation through the Hirota bilinear transformation technique	<i>Open Physics</i>	Vol. 23(1) & 18-07-2025	W(Q3) & 1.8
41	Muhammad Qasim, Yao Fengping, Muhammad Zafarullah Baber , Y. Usman.	Qualitative analysis and solitonic profiles of extended (3+1)-dimensional Kairat-X equation	<i>Engineering Computations</i>	Vol. & 26-06-2025	W(Q2) & 1.9
42	Ceessay, B., Ahmed, N., Muhammad Zafarullah Baber , Ali Akgul & Muhammad Jawaz	Interactions of soliton solutions for the generalized viscous capillarity compressible fluid model	<i>Mathematical and Computer Modelling of Dynamical Systems</i>	Vol.31(1) & 23-06-2025	W(Q3) & 1.8
43	Shaikh, T. S., Muhammad Zafarullah Baber , Ahmed, N., Akgul, A., Shahid, N., Abdeljawad, T., ... & Al-Mdallal, Q.	Waves propagation and sensitivity visualization for the fractional order Heimburg model in Biomembranes and nerves.	<i>Fractals</i>	Vol & 28-05-2025	W(Q1) & 3.3
44	Muhammad Zafarullah Baber ., Ahmed, N., Macías-Díaz, J. E., Iqbal, M. S., & Macías, S.	Solitary waves in an ecological model for plant-water dynamics in semi-arid settings under the effects of multiplicative noise.	<i>International Journal of Applied and Computational Mathematics</i>	Vol. 11(3) & 30-05-2025	--(Q3) & 2.4
45	Ceessay, B., Yasin, M. W., Ahmed, N., Muhammad Zafarullah Baber & Bittaye, E.	Revealing homoclinic breather waves, periodic lump waves and other waves forms of an integrable reduced spin Hirota–Maxwell–Bloch system	<i>Scientific Reports</i>	Vol. 15(1) & 06-06-2025	W(Q1) & 3.8
46	Yasin, M. W., Muhammad Zafarullah Baber , Butt, A., Saeed, I., Sulaiman, T. A., Yusuf, A., ... & Salahshour, S.	Visualization of the impact of noise of the closed-form solitary wave solutions for the stochastic Zhiber–Shabat model.	<i>Modern Physics Letters A</i>	Vol. 40(23) & 24-05-2025	W(Q2) & 1.594
47	Ceessay, B., Muhammad Zafarullah Baber , Ahmed, N., Macías, S., Macías-Díaz, J. E., & Medina-Guevara, M. G.	Solitonic wave solutions of a Hamiltonian nonlinear atom chain model through the Hirota bilinear transformation method.	<i>Open Physics</i>	Vol. 23(1) & 09-05-2025	W(Q3) & 1.8
48	Muhammad Waqas Yasin, Nauman Ahmed, Ali Akgül, Muhammad Zafarullah Baber , Dumitru Baleanu, Ovidiu Tintareanu-Mircea	Spatio-temporal patterns and Turing–Hopf bifurcation in a spatially extended prey–predator model with ratio-dependent interactions	<i>Modeling Earth Systems and Environment</i>	Vol. 11(3) & 01-06-2025	X(Q1) & 2.7
49	Muhammad Jawaz, Muhammad Shahzad, Nauman Ahmed, Muhammad Zafarullah Baber , Muhammad Iqbal, Ali Akgül	Analytical dynamics to the interactions of a diffusive mussel–algae model	<i>Partial Differential Equations in Applied Mathematics</i>	Vol. 14 & 01-06-2025	W(Q2) & --

50	Muhammad Zafarullah Baber, Nauman Ahmed, Muhammad Waqas Yasin, Muhammad Sajid Iqbal, Ali Akgül, Murad Khan Hassani, Muhammad Jawaz	Reliable numerical scheme for coupled nonlinear Schrödinger equation under the influence of the multiplicative time noise	<i>Scientific Reports</i>	Vol. 15(1) & 28-03-2025	W(Q1) & 3.8
51	Baboucarr Ceessay, Muhammad Zafarullah Baber, Nauman Ahmed, Muhammad Jawaz, Jorge E Macías-Díaz, Armando Gallegos	Harvesting Mixed, Homoclinic Breather, M-Shaped, and Other Wave Profiles of the Heisenberg Ferromagnet-Type Akbota Equation	<i>European Journal of Pure and Applied Mathematics</i>	Vol. 18(2) & 01-05-2025	X (Q3) & 1.00
52	Muhammad Qasim, Yao Fengping, Muhammad Zafarullah Baber*	Explicit wave solutions profile of (3+ 1)-dimensional Bateman–Burgers equation via bilinear neural network method	<i>The European Physical Journal Plus</i>	Vol. 140 (3) & 01-03-2025	W(Q1) & 2.8
53	Nauman Ahmed, Jorge E Macías-Díaz, Makhdoom Ali, Muhammad Jawaz, Muhammad Zafarullah Baber, María G Medina-Guevara	Dynamical wave structures for some diffusion–reaction equations with quadratic and quartic nonlinearities	<i>Open Physics</i>	Vol. 23(1) & 14-02-2025	W(Q3) & 1.8
54	Shahzad, M., Anjum, R., Ahmed, N., Muhammad Zafarullah Baber *, & Shahid, N.	On the closed form exact solitary wave solutions for the time-fractional order nonlinear unsteady convection diffusion system with unique-existence analysis	<i>International Journal of Geometric Methods in Modern Physics.</i>	Vol 11-02-2025	W(Q2) & 2.1
55	Ceessay, B., Muhammad Zafarullah Baber, Ahmed, N., Yasin, M. W., & Mohammed, W. W.	Breather, lump and other wave profiles for the nonlinear Rosenau equation arising in physical systems.	<i>Scientific Reports</i>	Vol. 15(1) 24-01-2025	W(Q1) & 3.8
56	Ahmed, N., Macías-Díaz, J. E., Umer, S., Muhammad Zafarullah Baber, Jawaz, M., & Vargas-Rodríguez, H.	On some solitary wave solutions of the Estevez–Mansfield–Clarkson equation with conformable fractional derivatives in time.	<i>Open Physics,</i>	Vol. 22(1) 31-12-2024	W(Q3) & 1.8
57	M. Qasim, F. Yao, Muhammad Zafarullah Baber and U. Younas	Investigating the higher dimensional Kadomtsev–Petviashvili–Sawada–Kotera–Ramani equation: Exploring the modulation instability, Jacobi elliptic and soliton solutions	<i>Physica Scripta</i>	Vol. 100(2) 10-01-2025	W(Q2) & 2.6
58	Cui, Q., Xu, C., Xu, Y., Ou, W., Pang, Y., Liu, Z., Muhammad Zafarullah Baber ... & Ghosh, U.	Bifurcation and Controller Design of 5D BAM Neural Networks With Time Delay	<i>International Journal of Numerical Modelling</i>	Vol. 37(6) 11-11-2024	W(Q2) & 1.6
59	Abbas, W., Chaudhry, F., Farooq, U., Muhammad Zafarullah Baber, & Sulaiman, T. A.	Exploring the metric dimensions of graphene: Unveiling the intricacies of its atomic structure.	<i>Modern Physics Letters B</i>	Vol. 22-12-2024	W(Q3) & 1.948

60	Jawaz, M., Macías-Díaz, J. E., Aqeel, S. A., Ahmed, N., Muhammad Zafarullah Baber & Medina-Guevara, M. G.	On some explicit solitary wave patterns for a generalized nonlinear reaction–diffusion equation with conformable temporal fractional derivative.	<i>Partial Differential Equations in Applied Mathematics</i>	Vol. 13 21-12-2024	W(Q2) & --
61	Muhammad Zafarullah Baber , Yasin, M. W., Ahmed, N., Ali, S. M., & Ali, M.	Dynamical analysis and optical soliton wave profiles to GRIN multimode optical fiber under the effect of noise.	<i>Nonlinear Dynamics</i>	Vol. 112(22) 02-08-2024	W (Q1) & 5.2
62	Yasin, M. W., Shahzad, T., Shoukat, S., Iqbal, M. S., Ahmed, N., & Muhammad Zafarullah Baber .	Mathematical Investigations of Diffusive Prey-Predator Dynamical System.	<i>International Journal of Geometric Methods in Modern Physics.</i>	Vol. 18-22-2024	W(Q3) & 2.1
63	Muhammad Zafarullah Baber , Shahzad, T., Munir, M., Ahmed, N., & Yasin, M. W.	Bifurcation, Chaotic Behavior and Effects of Noise on the Solitons for the Stochastic Jaulent-Miodek Hierarchy Model.	<i>International Journal of Theoretical Physics</i>	Vol. 63(11) 11-11-2024	W (Q3) & 1.3
64	El-Baghdady, G. I., Iqbal, M. S., Baber, M. Z., Ahmed, N., Izadi, M., & Adel, W.	Efficient Collocation Algorithm for High-Order Boundary Value Problems via Novel Exponential-Type Chebyshev Polynomials.	<i>Contemporary Mathematics</i>	Vol. 5(4) 22-10-2024	X & 0.6
65	Muhammad Zafarullah Baber , Malik, S., Yasin, M. W., Ahmed, N., Rezazadeh, H., Ali, S. M., ... & Hosseinzadeh, M. A.	Breathers, Lump, M-shapes and Other Optical Soliton Interactions for the GRIN Multimode Optical Fiber.	<i>International Journal of Theoretical Physics</i>	Vol. 63(10) 27-09-2024	X (Q3) & 1.3
66	Akgül, A., Ahmed, N., Shahzad, M., Muhammad Zafarullah Baber , Iqbal, M. S., & Chan, C. K	Regularity and wave study of an advection-diffusion-reaction equation.	<i>Scientific Reports</i>	Vol. 14(1) & 06-09-2024	W(Q1) & 3.8
67	Muhammad Zafarullah Baber , Ahmed, N., Iqbal, M. S., & Yasin, M. W.	Exact solitary wave solutions and their comparisons under the effect of noise: an allelopathic phytoplankton competition model.	<i>The European Physical Journal Plus</i>	Vol. 139(10) & 08-10-2024	W(Q1) & 2.8
68	Yasin, M. W., Muhammad Zafarullah Baber , Munir, M., Hassaballa, A. A., Inc, M., Iqbal, M. S., & Rezapour, S.	Modulation instability and optical wave profiles for the conformable Schrödinger–Poisson dynamical system.	<i>Optical and Quantum Electronics,</i>	Vol. 56(8) 05-07-2024	W(Q2) & 3.3
69	Muhammad Zafarullah Baber , Yasin, M. W., Xu, C., Ahmed, N., & Iqbal, M. S.	Numerical and Analytical Study for the Stochastic Spatial Dependent Prey-Predator Dynamical System	<i>Journal of Computational and Nonlinear Dynamics</i>	Vol. 19(10) 18-07-2024	X(Q2) & 2.085

70	Yasin, M. W., Ahmed, N., Saeed, J., Muhammad Zafarullah Baber , Ali, S. M., Akgül, A., ... & Ali, M.	Numerical study of diffusive fish farm system under time noise	<i>Scientific Reports</i>	Vol. 14(1) 26-06-2024	W(Q1) & 3.8
71	Muhammad Zafarullah Baber , Rezazadeh, H., Iqbal, M. S., Ahmed, N., Yasin, M. W., & Hosseinzadeh, M. A.	Investigation of soliton solutions for the NWHS model with temperature distribution in an infinitely long and thin rod	<i>Modern Physics Letters B</i>	Vol. 39(2) 18-05-2024	X(Q3) & 1.948
72	Nan, T., Muhammad Zafarullah Baber , Ahmed, N., Iqbal, M. S., Demirbilek, U., & Rezazadeh, H.	Effects of Brownian motion on solitary wave structures for 1-D stochastic Poisson Nernst Plank system in electrobiochemical	<i>International Journal of Geometric Methods in Modern Physics.</i>	Vol. 21(13) 15-06-2024	X (Q2) & 1.873
73	Muhammad Zafarullah Baber , Ahmed, N., Xu, C., Iqbal, M. S., & Sulaiman, T. A.	A computational scheme and its comparison with optical soliton solutions for the stochastic Chen–Lee–Liu equation with sensitivity analysis.	<i>Modern Physics Letters B</i>	Vol. 39(1) 10-04-2024	X(Q3) & 1.948
74	Iqbal, M. S., Inc, M., Yasin, M. W., Ahmed, N., Tawfiq, F. M., Bilal, M., Muhammad Zafarullah Baber & Rezapour, S.	Soliton solutions of nonlinear stochastic Fitz-Hugh Nagumo equation	<i>Optical and Quantum Electronics,</i>	Vol. 56(6) 09-05-2024	W(Q2) & 2.794
75	Muhammad Zafarullah Baber , Ahmed, N., Yasin, M. W., Iqbal, M. S., Akgül, A., Cordero, A., & Torregrosa, J. R.	Comparisons of Numerical and Solitary Wave Solutions for the Stochastic Reaction–Diffusion Biofilm Model including Quorum Sensing	<i>Mathematics,</i>	Vol. 12(9) & 24-04-2024	W(Q1) & 2.4
76	Muhammad Zafarullah Baber , W., W. Mohemmed., Ahmed, N., & Iqbal, M. S.,	Exact solitary wave propagations for the stochastic Burgers' equation under the influence of white noise and its comparison with computational scheme	<i>Scientific Reports</i>	Vol. 14(1) & 09-05-2024	W(Q1) & 4.6
77	Ozsahin, D. U., Ceessay, B., Muhammad Zafarullah Baber , Ahmed, N., Raza, A., Rafiq, M., & Ismail, E. A.	Multiwaves, breathers, lump and other solutions for the Heimburg model in biomembranes and nerves	<i>Scientific Reports</i>	Vol. 14(1) & 03-05-2024	W(Q1) & 4.6
78	Shahzad, M., Ahmed, N., Iqbal, M. S., Inc, M., Muhammad Zafarullah Baber , & Anjum, R.	Classical Regularity and Wave Structures of Fractional Order Selkov-Schnakenberg System	<i>International Journal of Theoretical Physics</i>	Vol. 63(4) & 20-04-2024	X(Q3) & 1.308

79	Ceesay, B., Ahmed, N., Muhammad Zafarullah Baber , & Akgül, A.	Breather, lump, M-shape and other interaction for the Poisson–Nernst–Planck equation in biological membranes.	<i>Optical and Quantum Electronics</i> ,	Vol. 56(5) & 05-04-2024	W(Q2) & 2.794
80	Muhammad Zafarullah Baber , Abbas, G., Saeed, I., Sulaiman, T. A., Ahmed, N., Ahmad, H., & Ozsahin, D. U.	Optical solitons for 2D-NLSE in multimode fiber with Kerr nonlinearity and its modulation instability	<i>Modern Physics Letters B</i>	Vol. 38(34) 05-04-2024	X(Q2) & 1.948
81	Changjin Xu, Wei Ou, Qingyi Cui, Muhammad Zafarullah Baber , Chinnamuniyandi Maharajan, and Uttam Ghosh	Theoretical exploration and controller design of bifurcation in a plankton population dynamical system accompanying delay	<i>Discrete and Continuous Dynamical Systems - Series S</i>	Vol. 18(5) 22-03-2024	X(Q2) & 1.8
82	Shahzad, T., Muhammad Zafarullah Baber , Qasim, M., Sulaiman, T. A., Yasin, M. W., & Ahmed, N.	Explicit solitary wave profiles and stability analysis of biomembranes and nerves.	<i>Modern Physics Letters B</i>	Vol. 38(31) 19-03-2024	X(Q2) & 1.948
83	Muhammad Zafarullah Baber , Ahmed, N., Yasin, M. W., Ali, S. M., Ali, M., Akgül, A., & Hassani, M. K.	Abundant soliton solution for the time-fractional stochastic Gray-Scot model under the influence of noise and M-truncated derivative.	SN Applied Sciences	Vol. 6(3) & 11-03-2024	X(Q2) & 2.6
84	Shahzad, T., Ahmed, M. O., Muhammad Zafarullah Baber , Ahmed, N., Akgül, A., Abdeljawad, T., & Amacha, I.	Explicit solitary wave structures for the fractional-order Sobolev-type equations and their stability analysis.	Alexandria Engineering Journal,	Vol.92 & 01-03-2024	W(Q1) & 6.626
85	Muhammad Zafarullah Baber , Seadawy, A. R., Iqbal, M. S., & Rizvi, S. T.	Optimization and exact solutions for biofilm model of bacterial communities	Alexandria Engineering Journal,	Vol.90 & 30-01-2024	W(Q1) & 6.626
86	Shahzad, T., Ahmed, M. O., Muhammad Zafarullah Baber , Ahmed, N., Akgül, A., & Din, S. M. E.	Novel waves structures for the nonclassical Sobolev-type equation in unipolar semiconductor with its stability analysis.	<i>Scientific Reports</i>	Vol. 13(1) & 17-12-2023	W(Q1) & 4.6
87	Ahmed, N., Muhammad Zafarullah Baber , Iqbal, M. S., Akgül, A., Rafiq, M., Raza, A., & Chowdhury, M. S. R.	Investigation of soliton structures for dispersion, dissipation, and reaction time-fractional KdV–burgers–Fisher equation with the noise effect.	International Journal of Modelling and Simulation	Vol. & 28-02-2024	X(Q2) & 3.29

88	Shahid, N., Muhammad Zafarullah Baber , Shaikh, T. S., Ahmed, N., Akgül, A., & De la Sen, M.	Dynamical study of groundwater systems using the new auxiliary equation method	Results in Physics	Vol. 58 & 08-02-2024	W(Q2) & 5.3
89	Ou, W., Xu, C., Cui, Q., Pang, Y., Liu, Z., Shen, J., Muhammad Zafarullah Baber & Ahmad, S. (2024).	Hopf bifurcation exploration and control technique in a predator-prey system incorporating delay.	AIMS Mathematics	Vol. 9(1) & 13-12-2023	X(Q1) & 2.739
90	Muhammad Shahzad, N. Ahmed, Muhammad S. Iqbal, M. Inc, Muhammad Zafarullah Baber , R. Anjum & N. Shahid	Application of Fixed Point Theory and Solitary Wave Solutions for the Time-Fractional Nonlinear Unsteady Convection-Diffusion System	International Journal of Theoretical Physics	Vol (62) & 07-12-23	X(Q3) & 1.308
91	Tahir Shahzad, Muhammad Zafarullah Baber , Tukur A. Sulaiman, Muhammad O. Ahmad & Muhammad W. Yasin	Optical wave profiles for the higher order cubic-quartic Bragg-gratings with anti-cubic nonlinear form	Optical and Quantum Electronics	Vol (56) & 02-12-23	W(Q2) & 2.794
92	Tahir Shahzad, Muhammad O. Ahmed, Muhammad S. Iqbal, Muhammad Zafarullah Baber , Muhammad W. & Mustafa Inc	Explicit solitary wave solutions for the nonlinear equations in semiconductor and magnetic field with their stability analysis	Optical and Quantum Electronics	Vol (62) & 02-12-23	W(Q2) & 2.794
93	Tahir Shahzad, Muhammad Zafarullah Baber , Tukur A. Sulaiman, Muhammad O. Ahmad & N. Ahmed	Extraction of optical solitons for nonlinear Biswas–Milovic equation in magneto-optic waveguide	Optical and Quantum Electronics	Vol (62) & 02-12-23	W(Q2) & 2.794
94	Nauman Ahmed, Muhammad Zafarullah Baber , Muhammad S. Iqbal, A. Ali Akgül & Sayed M. El Din	Analytical study of reaction diffusion Lengyel-Epstein system by generalized Riccati equation mapping method	Scientific Reports	Vol (13) & 16-11-23	W(Q1) & 4.6
95	Muhammad Zafarullah Baber , Aly R. Seadawy, M. Qasim, Muhammad S. Iqbal, and Syed T. R. Rizvi	On the spatiotemporal structures of ratio-dependent prey–predator model of ecological system	International Journal of Geometric Methods in Modern Physics	Vol (13) & 16-11-23	X(Q3) & 1.8
96	Inc, M., Iqbal, M. S., Muhammad Zafarullah Baber , Qasim, M., Iqbal, Z., Tarar, M. A., & Ali, A. H.	Exploring the solitary wave solutions of Einstein's vacuum field equation in the context of ambitious experiments and space missions.	Alexandria Engineering Journal,(2023)	Vol (82) 9-11-2023,	W(Q1)& 6.626

97	Ceesay, B., Muhammad Zafarullah Baber , Ahmed, N., Akgül, A., Cordero, A., & Torregrosa, J. R.	Modelling Symmetric Ion-Acoustic Wave Structures for the BBMPB Equation in Fluid Ions Using Hirota's Bilinear Technique.	Symmetry (2023)	Vol-15 (9) 01-08-2023	W(Q2) & 2.7
98	Shahzad, T., Muhammad Zafarullah Baber , Ahmad, M. O., Ahmed, N., Akgül, A., Ali, S. M., ... & El Din, S. M	On the analytical study of predator-prey model with Holling-II by using the new modified extended direct algebraic technique and its stability analysis	Results Physics, (2023)	Vol. 52(1) & 10-07-2023	W(Q2)& 5.3
99	Shaikh, T. S., Muhammad Zafarullah Baber , Ahmed, N., Iqbal, M. S., Akgl, A., & El Din,	Acoustic wave structures for the confirmable time-fractional Westervelt equation in ultrasound imaging	Results in Physics, (2023)	Vol. 49(1) & 06-06-2023	W(Q2)& 4.565
100	Islam, W., Muhammad Zafarullah Baber , Ahmed, N., Akgl, A., Rafiq, M., Raza, A., & Weera, W.	Investigation the soliton solutions of musseland algae model leading to concentration	Alexandria Engineering Journal, (2023)	Vol. 70(1) & 02-03-2023	W(Q1)& 6.626
101	Iqbal, M. S., Muhammad Zafarullah Baber , Inc, M., Younis, M., Ahmed, N., & Qasim, M.	On multiple solitons of glycolysis reaction diffusion system for the chemical concentration	International Journal of Modern Physics B, (2023)	25-March-2023	X(Q3) & 1.404
102	Shaikh, T. S., Muhammad Zafarullah Baber , Ahmed, N., Iqbal, M. S., Akgl, A., & El Din, S. M.	Investigation of solitary wave structures for the stochastic Nizhnik-Novikov- Veselov (SNNV) system	Results in Physics, (2023)	Vol. 48(1) 25-March-2023	W(Q2) & 4.565
103	Yao, S. W., Shahzad, T., Ahmed, M. O., Inc, M., Iqbal, M. S., & Muhammad Zafarullah Baber ,	Abundant solitary wave solutions of the higher dimensional generalized Camas-Holm KP model in shallow water waves	Results In Physics, (2023)	Vol. 46(1) 05-March-2023	W(Q2) & 4.565
104	Shaikh, T. S., Muhammad Zafarullah Baber , Ahmed, N., Shahid, N., Akgl, A., & De la Sen, M.	On the Soliton Solutions for the Stochastic Konno-Oono System in Magnetic Field with the Presence of Noise	Mathematics, (2023)	Vol. 6(11) 17-March-2023	W(Q1) & 2.84
105	Shahzad, T., Ahmad, M. O., Muhammad Zafarullah Baber , Ahmed, N., Ali, S. M., Akgl, A., & Eldin, S. M.	Extraction of soliton for the confirmable time-fractional non-linear Sobolev-type equations in semiconductor by ϕ -modal expansion method	Results in Physics, (2023)	Vol. 46(1) 24-Feb-2023	W(Q2) & 4.565
106	Yao, S. W., Muhammad Zafarullah Baber , Inc, M., Iqbal, M. S., Jawaz, M., & Akhtar, M. Z.	Investigation of nonlinear problems governed by stochastic ϕ -4 type equations in nuclear and particle physics	Results in Physics, (2023)	Vol. 46(1) 16-Feb-2023	W(Q2) & 4.565
107	Ahmed, N., Yasin, M. W., Iqbal, M. S., Akgl, A., Rafiq, M., Raza, A., & Muhammad Zafarullah Baber .	Numerical investigations of stochastic Newell-Whitehead-Segel equation in $(2+ 1)$ dimensions	<i>International Journal of Modern Physics B</i>	Vol. 37(21) 23-Feb-2023	X(Q3) & 1.404

108	Muhammad Zafarullah Baber , Ahmed, N., Yasin, M. W., Iqbal, M. S., Akgl, A., Riaz, M. B., & Raza, A.	Comparative analysis of numerical with optical soliton solutions of stochastic Gross-Pitaevskii equation in dispersive media	<i>Results in Physics</i>	Vol. 44(19) 17-Dec-2022	W(Q2) & 4.565
109	Yao, S. W., Shahzad, T., Ahmed, M. O., Muhammad Zafarullah Baber , Iqbal, M. S., & Inc, M.	Extraction of soliton solutions for the time-space fractional order nonclassical Sobolev-type equation with unique physical problems	<i>Results in Physics,</i>	Vol. 45(1) 22-Feb-2023	W(Q2) & 4.565
110	Muhammad Zafarullah Baber , Seadway, A. R., Ahmed, N., Iqbal, M. S., & Yasin, M. W.	Selection of solitons coinciding the numerical solutions for uniquely solvable physical problems: A comparative study for the nonlinear stochastic Gross-Pitaevskii equation in dispersive media	<i>International Journal of Modern Physics B</i>	Vol. 37(20) 21-Dec-2022	X(Q3) & 1.404
111	Zhao, Y. H., Iqbal, M. S., Muhammad Zafarullah Baber , Inc, M., Ahmed, M. O., & Khurshid, H.	On traveling wave solutions of an autocatalytic reaction diffusion Selkov- Schnakenberg System	<i>Results in Physics</i>	Vol. 44(1) 30-Nov-2022	W(Q2) & 4.565
112	Muhammad Zafarullah Baber , Seadway, A. R., Iqbal, M. S., Ahmed, N., Yasin, M. W., & Ahmed, M. O.	Comparative analysis of numerical and newly constructed soliton solutions of stochastic Fisher-type equations in a sufficiently long habitat	<i>International Journal of Modern Physics B</i>	Vol. 37(16) 29-Nov-2022	X(Q3) & 1.404
113	Younas, U., & Muhammad Zafarullah Baber , Yasin, M. W., Sulaiman, T. A., & Ren, J.	The generalized higher-order nonlinear Schrodinger equation: Optical solitons and other solutions in fiber optics	<i>International Journal of Modern Physics B</i>	Vol. 37(18) 3-Dec-2022	X(Q3) & 1.404
114	Iqbal, M. S., Seadawy, A. R., & Muhammad Zafarullah Baber , Ahmed, N., & Yasin, M. W.	Extraction of solitons for time incapable illimitable paraxial wave equation in Kerr-media	<i>International Journal of Modern Physics B</i>	Vol. 37(13) 12-Nov-2022	X(Q3) & 1.404
115	Iqbal, M. S., Seadawy, A. R., & Muhammad Zafarullah Baber & Qasim, M.	Application of modified exponential rational function method to Jaulent-Miodek system leading to exact classical solutions	<i>Journal of Chaos, Solitons & Fractals,</i>	Vol. 164(1) 10-Sep-2022	W(Q1) & 9.922
116	Iqbal, M. S., Seadawy, A. R., & Muhammad Zafarullah Baber ,	Demonstration of unique problems from Soliton solutions to nonlinear Selkov-Schnakenberg System	<i>Journal of Chaos, Solitons & Fractals</i>	Vol. 162(1) 11-Aug-2022	W(Q1) & 9.922
117	Iqbal, M. S., Seadawy, A. R., Muhammad Zafarullah Baber , Yasin, M. W., & Ahmed, N.	Solution of stochastic Allen-Cahn equation in the framework of soliton theoretical approach	<i>International Journal of Modern Physics B</i>	Vol. 36(6) 26-Nov-2022	X(Q3) & 1.404

118	Nisar, K. S., Alsallami, S. A. M., Inc, M., Iqbal, M. S., Muhammad Zafarullah Baber , & Tarar, M. A.	On the exact solutions of nonlinear extended Fisher-Kolmogorov equation by using the He's variational approach	<i>Journal of AIMS Mathematics</i>	Vol. 7(8) 24-May-2022	W(Q1) & 2.65
119	Seadawy, A. R., Younis, M., Iqbal, M. S., Muhammad Zafarullah Baber , Rizvi, S. T., & Raheem, A.	Soliton behavior of algae growth dynamics leading to the variation in nutrients concentration	<i>Journal of King Saud University-Science</i>	Vol. 34(5) 06-July-2022	W(Q1) & 4.011
120	Younas, U., Ren, J., Muhammad Zafarullah Baber , Yasin, M. W., & Shahzad, T.	Ion-acoustic wave structures in the fluid ions modeled by higher dimensional generalized Korteweg-de Vries-Zakharov-Kuznetsov Equation	<i>Journal Of Ocean Engineering and Science</i>	Vol 8(6) 30-May-2022	W(Q1) & 4.873
121	Seadawy, A. R., Younis, M., Muhammad Zafarullah Baber , Iqbal, M. S., & Rizvi, S. T.	Nonlinear acoustic wave structures to the Zabolotskaya-Khokholov dynamical Model	<i>Journal Of Geometry and Physics,</i>	Vol. 175(1) 22-Feb-2022	X(Q2) & 1.249
122	Younis, M., Seadawy, A. R., Sikandar, I. Muhammad Zafarullah Baber , Ahmed, N., Rizvi, S. T. R., & Althobaiti, S.	Nonlinear dynamical study to time fractional Dullian-Gottwald-Holm model of shallow water waves	<i>International Journal of Modern Physics B</i>	Vol. 36(1) 09-Dec-2021	X(Q3) & 1.219
123	Yasin, M. W., Iqbal, M. S., Seadawy, A. R., Muhammad Zafarullah Baber , Younis, M., & Rizvi, S. T.	Numerical scheme and analytical solutions to the stochastic nonlinear advection diffusion dynamical model	<i>International Journal of Nonlinear Sciences And Numerical Simulation</i>	07-Dec-2021	X(Q2) & 2.007
124	Rehman, H. U., Seadawy, A. R., Younis, M., Rizvi, S. T. R., Anwar, I., Muhammad Zafarullah Baber , & Althobaiti, A.	Weakly nonlinear electron-acoustic waves in the fluid ions propagated via a (3+1)-dimensional generalized Kortewegde-Vries-Zakharov Kuznetsov equation in plasma physics	<i>Results In Physics</i>	Vol. 33(1) 22-Dec-2021	W(Q2) & 4.476
125	Younis, M., Seadawy, A. R., Muhammad Zafarullah Baber , Yasin, M. W., Rizvi, S. T., & Iqbal, M.S.	Abundant solitary wave structures of the higher dimensional Sakovich dynamical Model	<i>Mathematical Methods in the Applied Sciences</i>	Special Issue 12-Dec-2021	W(Q1) & 2.4
126	Seadawy, A. R., Younis, M., Muhammad Zafarullah Baber , Rizvi, S. T., & Iqbal, M. S.	Diverse acoustic wave propagation to confirmable time space fractional KP equation arising in dusty plasma	<i>Communication In Theoretical Physics</i>	Vol. 73(1) 27-Sep-2021	X(Q3) & 1.987

127	Younis, M., Seadawy, A. R, Muhammad Zafarullah Baber , Husain, S., Iqbal, M. S., Rizvi, S. T. R., & Baleanu, D.	Analytical optical soliton solutions of the Schrodinger-Poisson dynamical system	<i>Results in Physics</i>	Vol. 27(1) 21-June-2021	W(Q2) & 4.476
-----	--	--	---------------------------	----------------------------	------------------

National Conference Presentation

Presented work at

- **RAMMMA Conference 2024**,
Lahore School of Economics, Lahore

Held on 1st –2nd March, 2024

- **RAMMMA Conference 2023**,
Lahore School of Economics, Lahore.

Held on 4th –5th March, 2023.

Community Services

Organized four seminars under the albiruni society of mathematics, Participate as organizers in First International conference of Mathematics (2019) at University of Lahore, Lahore.

Reference

1. Dr. Nauman Ahmed
Associate Professor
The University of Lahore, Lahore.
Emails: nauman.ahmed@math.uol.edu.pk
Handy: +92(332)8671520
2. Dr. tech. M. Sajid Iqbal,
Associate Professor of
Mathematics, NUST MCS
Islamabad.
Email: m.s.iqbal@alumni.tugraz.at
Handy: +92(331)8171885