




**DEPARTMENT OF MATHEMATICS**  
**DYAL SINGH COLLEGE, UNIVERSITY OF DELHI**  
**FACULTY DETAIL**



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Designation	Assistant Professor					
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Educational Qualifications						
Degree	Institution				Year	
Ph.D.	Jamia Millia Islamia				2009	
M.Sc.	University of Delhi				2004	
B.Sc. (Hons)	Aligarh Muslim University				2002	
Intermediate	U. P. Board				1999	
High School	U. P. Board				1997	
Career Profile						
Jan. 2023—Present --Assistant Professor----Dyal Singh College--University of Delhi, Delhi, India.						
Oct. 21--Jan. 2023--Assistant Professor----Shivaji College--University of Delhi, Delhi, India.						
Jan.2020--April.2020---Assistant Professor---AND College---University of Delhi, Delhi, India.						
Aug. 2014-- Aug. 2019---Assistant Professor----College of Science Zulfi----Majmaah University---Kingdom of Saudi Arabia.						
Sept. 2010-- Aug. 2014----Assistant Professor-----ARSD College---University of Delhi, Delhi, India.						
Aug. 2010-- Sept. 2010---Assistant Professor--Zakir Hussain College--University of Delhi, Delhi, India.						
July. 2010--Aug. 2010---Assistant Professor--Satyawati College--University of Delhi, Delhi, India.						
Jan. 2010-- July 2010----Lecturer----G.P.M.C.E., Delhi----Indraprastha University—Delhi--India.						
Sept. 2008-- Jan. 2010----Lecturer----NIEC, Delhi----Indraprastha University---Delhi--India.						
Administrative Assignments (From 1 <sup>st</sup> July 2017 onwards)						
NA						
Areas of Interest / Specialization						
Celestial Mechanics						
Subjects Taught						
Differential Equation, Calculus and Geometry, Vector Calculus, Computer Algebra System						
Research Guidance						
NA						

Publications Profile (From 1<sup>st</sup> July 2017 onwards)

Study the non-linear stability of non-collinear Libration point in the restricted three-body configuration when the shapes of the primaries are taken as heterogeneous and finite straight segment, Accepted in Solar system research, 2023.

Shapes and mass variation effects of the bodies in the generalized elliptic restricted 3-body problem, Accepted for publication in Astronomy reports, 2023.

Halo orbits under some perturbations in the cr3b problem, Symmetry, 15, 418, 2023.  
<https://doi.org/10.3390/sym15020481>.

Interaction of 3-body in the circular restricted problem with variable mass, Astronomy and computing, 42, 2023, <https://doi.org/10.1016/j.ascom.2023.100688>.

The Kerr-like primaries in the circular Hill problem with variable mass, Solar system research, 56(6), 433-444, 2022.

Behaviour of Variable Mass Infinitesimal Body in the CR3BP With Heterogeneous Primary and Finite Straight Segment Secondary, Romanian Astro. Journal, 32(2), 113-126, 2022.

Triaxial primaries in collinear circular perturbed 4-body configuration, Astronomy report, 66(11), 1074-1081, 2022.

Study the effect of Modified Newtonian Force on the restricted 3-body configuration in Non-Linear sense, Applications and Applied Mathematics: An International Journal, 17(2), 450-471, 2022.

Effects of mass variation in the collinear perturbed Moulton-Copenhagen configuration, International Journal of Analysis and Applications, 20, 44, 2022.

Collinear configuration in the circular restricted four-body problem with a variable mass, Annals of Mathematics and Computer Science, 8, 11-20, 2022.

Variable mass body motion in the perturbed Robes configuration, Astronomy reports, 66(7), 2022.

Perturbed Robes problem with charged bodies, Romanian Astronomical Journal, 32(2), 83-94, 2022.

Impact of Some Perturbations on the Generalized Elliptic Hill Problem, Mechanics in Solids, 57(5), 1104-1117, 2022, <https://doi.org/10.3103/S002565442205003X>.

Analysis of equilibrium points in quantized Hill system, Mathematics (MDPI), 10, 2186, 2022.

Numerical exploration of the variable mass test particle on the perturbed cr3b configuration, New Astronomy, 97, 101885, 2022.

Measuring Complexity and Chaos in Three - Species Food Chain system with the Beddington-DeAngelis Functional Response,  
Bulletin of the Allahabad Mathematical society, 37, part-1, 53-69, 2022.

Hill restricted four-body problem with variable mass,  
Gulf Journal of Mathematics, 12(2), 57-65, 2022.

Dynamical behavior of infinitesimal variable mass body in the frame of elliptical Hill problem,  
Romanian Astronomical Journal, 32(1), 15-33, 2022.

Motion of variable mass body in the seventh-degree Henon-Heiles system,  
Applications and Applied Mathematics : An International Journal, 17(2), 439-449, 2022

Behaviour of motion of infinitesimal variable mass oblate body in the generalized perturbed circular restricted three-body problem,  
Italian Journal of Pure and Applied Mathematics, 47, 221-239, 2022.

Dynamical properties of body with variable mass in a fifth-order Henon-Heiles system,  
Astronomy reports, 66(1), 64-74,} 2022.

The dynamical study of infinitesimal variable mass body in nonlinear sense of restricted three-body problem with heterogeneous primaries,  
Applications and Applied Mathematics : An International Journal, 16(2), 1274-1294, 2021.

Generalized cr3b problem with heterogeneous primary and secondary as finite straight segment  
Applications and Applied Mathematics : An International Journal, 16(2), 1120-1129, 2021.

Triaxial primaries in circular Hill problem,  
Astronomy reports, 65(11), 1178-1183, 2021.

Analysis of parking points within the frame of perturbed elliptic restricted problem of three bodies,  
Romanian Astronomical Journal, 31(3), 275-291, 2021.

Variable mass motion in the Henon-Heiles system,  
Modern Physics Letters A, 36(21), DOI: 10.1142/S0217732321501509, 2021.

Heterogeneous primary in the restricted three-body problem with modified Newtonian potential of secondary, Bulgarian Astronomical Journal, 35, 2021.

Perturbed Hill's problem with variable mass,  
Astronomical Notes, 2021, 1-9. <https://doi.org/10.1002/asna.202113870>.

Generalized Robe's problem having oblate heterogeneous primary containing viscous fluid inside the outer most layer and radiating spherical secondary with modified Newtonian potential,  
Science International, Lahore, 33(2), 147-151, 2021.

Dynamical behaviour of motion of small oblate body in the generalized elliptic restricted 3-body problem with variable mass,

Romanian Astronomical Journal, 31(1), 81-100, 2021.

Properties of motion of the infinitesimal variable mass body in the well-known circular restricted three-body problem with Newtonian and Yukawa potential, Appl. Math. Inf. Sci., 15(2), 189-197, 2021.

Vertical motion of the variable infinitesimal mass in the circular Sitnikov problem, Application and Applied Mathematics, 15(2), 1350-1361, 2020.

Various perturbations considered on the generalized circular restricted three-body problem, Science International, Lahore, 32(6), 771-776, 2020.

A planar five-body problem in a framework of heterogeneous and mass variation effects, Astronomical Journal, 160, 216, 2020.

On Robe's restricted problem with modified Newtonian potential, International Journal of Geometric Methods in Modern Physics, <https://doi.org/10.1142/S0219887821500055>, 2020.

Perturbed six-body configuration with variable mass, Romanian Astronomical Journal, 30 (2), 135—152, 2020.

Kind of Robe's restricted problem with heterogeneous irregular primary of N-layers when outer most layer has viscous fluid, New Astronomy, 83, <https://doi.org/10.1016/j.newast.2020.101496>, 2020.

Generalized elliptic restricted four-body problem with variable mass, Astronomy Letters, 46(4), 275-288, 2020.

Behaviour of small variable mass particle in electromagnetic Copenhagen problem, Sultan Qaboos University Journal for Science, 25(1), 61-77, 2020.

Gravitational potential formulae between two bodies with finite dimensions, Astronomical Notes, 2020. DOI : 10.1002/asna.202013726

Complexity Dynamics of Gumowski-Mira Map, Applications and Applied Mathematics : An International Journal, 15(1), 273-281, 2020.

Variable mass of a test particle in Copenhagen problem with Manev-type potential, Research and review journal for Physics, 9(1), 17-27, 2020.

Cyclic kite configuration in the restricted five-body problem with variable mass, Applications and Applied Mathematics : An International Journal, 14(2), 985-1002, 2019.

Heterogeneous primaries in CR4BP, International Journal of Advanced Astronomy, 7(2), 49-56, 2019, DOI : 10.14419/ijaa.v7i2.29648.

The motion properties of the infinitesimal body in the framework of bicircular Sun-perturbed Earth-Moon system,  
New Astronomy, 73, 101282, 2019.

Effect of oblateness and viscous force in the Robe's circular restricted three-body problem,  
New Astronomy, 73, 101280, 2019.

Perturbed Robe's CR3BP with Viscous Force,  
Astrophysics and Space Science, 364, 95, 2019.

Effect of charge in the circular restricted three-body problem with variable masses,  
Journal of Taibah University for Science, 13(1), 670-677, 2019.

The restricted five-body problem with cyclic kite configuration,  
Journal of Dynamical Systems and Geometric Theories, 17(1), 91-107, 2019,  
DOI : 10.1080/1726037X.2018.1551720.

Heterogeneous Oblate Primaries in Photo-gravitational CR5BP with Kite Configuration,  
Journal of Nepal Mathematical Society, 2(1), 1-14, 2019.

Behavior of an infinitesimal-variable-mass body in CR3BP; the primaries are finite straight segments,  
Punjab University Journal of Mathematics, 51(5), 107-120, 2019.

Non-linear stability of  $L_4$  in the R3BP when the smaller primary is a heterogeneous triaxial rigid body with N layers, Italian Journal Of Pure and Applied Mathematics, 41, 297-312, 2019.

The circular restricted four- body problem with triaxial primaries and variable infinitesimal mass,  
Applications and Applied Mathematics: An International Journal, 13(2), 818-838, 2018.

The circular restricted three-body problem when both the primaries are heterogeneous spheroid of three layers and infinitesimal body varies it's mass,  
J. Of Astrophysics and Astronomy, 39, 57, 2018.

Investigation of the effect of albedo and oblateness on the circular restricted four variable bodies problem, Applied Mathematics and Nonlinear Sciences, 2(2), 529-542, 2017.

Effect of Albedo on the motion of the infinitesimal body in circular restricted three-body problem with variable masses,  
Italian Journal Of Pure and Applied Mathematics, 38, 581-600, 2017.

Investigation of a family of simply periodic orbits around the moon of the Mars,  
Sci.Int.(Lahore), 29(5), 1161-1171, 2017.

Locations and stability of the libration points in the CR3BP with perturbations,  
Journal of Mathematical Analysis, www.ilirias.com/jma, 8 (5) 131-144, 2017.

The effect of perturbations on the circular restricted four-body problem with variable masses,  
Journal of Mathematics and Computer Science, 17 (3), 365-377, 2017.

The circular restricted four-body problem with variable masses,  
Nonlinear Sci. Lett. A, 8(3), 303-312, 2017.

Dynamics in the circular restricted three-body problem with perturbations,  
International Journal of Advanced Astronomy, 5(1), 19-25, 2017.

**Conference Organization/ Presentations (From 1<sup>st</sup> July 2017 onwards)**

*International Contemporary Environmental issues by Sustainable Approaches (ICMCESA-2022), AND College, University of Delhi, New Delhi, India, Feb (22-28), 2022.*

*Fourth Conference on Mathematical Sciences and Applications, King Saud University, Riyadh, Saudi Arabia, April (11-12), 2018.*

**Research Projects (Major Grants/Research Collaboration) (From 1<sup>st</sup> July 2017 onwards)**

*Interaction of bodies in the circular restricted 3-body problem with variable mass. Awarded by The Deputy Deanship for research and innovation, Ministry of Education in Saudi Arabia. 2022-2023*

*The Robe's problem with viscous force. Awarded by The Deanship of Scientific Research, Majmaah University, Kingdom of Saudi Arabia. 2018-2019.*

*Locations and stability of the libration points in the CR3BP with perturbations. Awarded by The Deanship of Scientific Research, Majmaah University, Kingdom of Saudi Arabia. 2017-2018*

**Awards and Distinctions (From 1<sup>st</sup> July 2017 onwards)**

**NA**

**Association With Professional Bodies**

**NA**

**Other Activities like MOOCs/ Patents etc. (From 1<sup>st</sup> July 2017 onwards)**

**NA**

Abdullah  
Signature of Faculty Member