DESHBANDHU COLLEGE
(UNIVERSITY OF DELHI)
KALKAJI, NEW DELHI - 110019

Title	Dr.	First Name	Rajiv	Last Name	Aggarwal	Photograph

Designation	Professor (Principal)
Address	159, SFS Flats, Mukherjee Nagar, New Delhi-110009.
Phone No. Office	011-41605662
Residence	9312259630
Mobile	
Email	rajiv_agg1973@yahoo.com, rajivaggarwal@db.du.ac.in
Web-Page	https://sites.google.com/db.du.ac.in/rajiv-aggarwal/home?authuser=0

Educational Qualifications

Degree	Institution	Year
Ph.D.	Jamia Millia Islamia University, Delhi.	2007
M.Phil.		
PG	M. Sc. Mathematics, Kirori Mal College, University of Delhi	1995
UG	B. Sc. (Hons.) Mathematics, Kirori Mal College, University of Delhi	1993

Areas of Interest/Specialization

Space Dynamics, Celestial Mechanics, Restricted Three Body Problem, Restricted Four Body Problem, Resonances, Perturbation Theory, Non-linear Dynamical system, Biomathematics.

Research Guidance

1. Supervision of Awarded Doctoral Thesis

- Sushi Yadav, Department of Mathematics, University of Delhi, India. Title: Resonance Problems in a Geo-Synchronous Satellite Including Earth's Equatorial Ellipticity. (Awarded, 2015)
- Bhavneet Kaur, Department of Mathematics, University of Delhi, India. Title: Stability of Equilibrium Solutions in the Robe's Restricted Problem of 2+2 Bodies (Awarded, 2016)
- Mamta Jain, Shri Venkateshwara University, Gajraula, U.P., India. Title: Restricted Three Body Problem with Dissipative Forces. (Awarded, 2016)

2. Supervision of Doctoral Thesis, under progress

- Monika Arora, Department of Mathematics, University of Delhi, India.(Thesis Submitted)
- Charanpreet Kaur, Depaertment of Mathematics, University of Delhi, India.(Thesis Submitted)
- Prachi Sachan, Department of Mathematics, University of Delhi, India.(Pursuing)
- Dinesh Kumar, , Department of Mathematics, University of Delhi, India.(Pursuing)

- Tanvi, Department of Mathematics, University of Delhi, India.(Pursuing)

3. Supervision of awarded M.Phil. Dissertations

- Dinesh Kumar, University of Delhi, India. Title: Restricted Three Body Problem When one of the Primaries is a Finite Line Segment. (Awarded, 2016)

4. Supervision of M.Phil. Dissertations, Under Progress

- Ashutosh Rajput, Department of Mathematics, University of Delhi, India.(Pursuing)

Referee of Scientific Journals

1. Astrophysics and Space Science, Springer, Netherlands.
2. Nonlinear Dynamics, Springer, Netherlands.
3. Chaos Solitons and Fractals, Elsevier, United Kingdoms (UK) .
4. Iranian Journal of Technology, Springer, Netherlands.
5. International Journal of Astronomy and astrophysics, U.S.A.
6. Journal of Dynamical Systems and Geometric Theories, Taylor and Franscis.
7. Communications in Nonlinear Science and Numerical Simulation (CNSNS), Elsevier, Netherlands .
8. International Journal of Modeling, Simulation and Scientific Computing (IJMSC), Singapore.

Member of Editorial Board

1. Applications and Applied Mathematics: An International Journal (AAM), Texas, U.S.A.

Books Authored

Year-2020

1. Md Sanam Suraj, Md Chand Asique, **Rajiv Aggarwal**, Umakant Prasad, M R Hassan, Amit Mittal; On The Perturbed Restricted Four-Body Problem, Lap Lambert Academic Publishing, Verlag Publishers, Mauritius , ISBN: 978-620-0-46693-8.
2. Sushil Yadav, **Rajiv Aggarwal**, Vinay Kumar; A Study of Resonance Problems in a Geo-Synchronous Satellite, Lap Lambert Academic Publishing, Verlag Publishers, Mauritius, ISBN: 978-620-0-30172-7.

Year-2017

1. Mamta Jain, **Rajiv Aggarwal**, Bhavneet Kaur; Restricted three body problem with dissipative forces, Lap Lambert Academic Publishing, Verlag Publishers, Mauritius, ISBN-13: 978-6202003339.
2. Bhavneet Kaur, **Rajiv Aggarwal**, Mamta Jain; Robe's Restricted Problem of 2+2 Bodies, Lap Lambert Academic Publishing, Verlag Publishers, Mauritius, ISBN-10: 6202007745.

Conferences and Seminars

Session Chair

1. Chaired a session in the "International Conference on Celestial Mechanics and Dynamical Astronomy" held at Maulana Azad Urdu University, Hyderabad from Dec 15-17, 2015.
2. Chaired a session in the Commission for Scientific and Technical Terminology (Ministry of HRD, India sponsored seminar on "Recent Trends in Technical Terminology in Science" held at Sri Aurobindo College, University of Delhi from Feb. 16-17, 2016.
3. Key note speaker and chaired a session in the "BIOMAT 2020- 20 th International Symposium on Mathematical and Computational Biology" held at Federal University of Rio de Janerio, Brazil from Nov 02-06, 2020 (Online Mode).

Paper Presentation

1. Participated and presented a paper entitled “Assessing the Effects of Holling Type-II Treatment Rate on HIV-TB Co-Infection” in 19 th BIOMAT International Symposium on Mathematical and Computational Biology, Bolyai Institute, University of Szeged / Hungarian Academy of Sciences, Hungary during October 21 - 25, 2019.
2. Participated and presented a paper entitled “On the basins of convergence of the libration point in the axisymmetric restricted five-body problem: Convex case” in the XXXth General Assembly of the International Astronomical Union during 20-31 August, 2018, Vienna, Austria.
3. Participated in the International Conference “CELMEC-VII”, The Seventh International Meeting on Celestial Mechanics held at Balletti Park Hotel in San Martino al Cimino (Viterbo, Italy) during September 03-09, 2017 and presented a paper entitled "Restricted Four-Body Problem with Variable Mass".
4. Participated in the "International Conference on Celestial Mechanics and Dynamical Astronomy" held at Maulana Azad Urdu University, Hyderabad from Dec 15-17, 2015 and presented a paper entitled "Stability of Libration Points in the Restricted Four-Body Problem with Variable Mass".
5. 9. Presented a paper entitled "Stability of Libration Point L4 in the Restricted Three Body Problem" in 3-week UGC Sponsored Refresher Course in Mathematics and Operation Research held at CPDHE, University of Delhi duringDecember 13, 2010 to January 4, 2011.
6. Presented a paper entitled "Infinite Sets and Cardinal Numbers" in a UGC Sponsored Refresher Course in Mathematics (Math-14) entitled held at CPDHE, University of Delhi during May 13 to June 02, 1998.
7. Presented a paper entitled "Symbolic Math using Mathcad" at UGC Sponsored Orientation Course in Information Technology held at CPDHE, University of Delhi during April 05 to May 03, 2004.

Membership of Other Professional Societies

1. Individual member, International Astronomical Union (IAU).
2. Life member, Astronomical Society of India.
3. Life member of Indian Mathematical Society, India.
4. Life member of Ramanujan Mathematical Society, India.
5. Life member of Indian Science Congress Association, India.
6. Life member of American Mathematical Society (AMS).
7. Life member of International Association of Engineers (IAENG).
8. Life member and Hon. Director of Center for Fundamental Research in Celestial Mechanics and Space Dynamics, Delhi.
9. Life member of János Bolyai Mathematical Society, Hungary.

List of publications in Journals:

Year-2021

1. Indrakant Kumar Singh, Pratibha Kumari, Pooja Mittal, Amit Kumar, Bharti Singal, Gulam Mustafa Hasan, **Rajiv Aggarwal**, Mohammad Amjad Kamal, Archana Singh, Md. Imtaiyaz Hassan (2021): Emerging Therapeutic Approaches to COVID-19, *Current Pharmaceutical Design*.

2. Md Sanam Suraj, **Rajiv Aggarwal**, Md Chand Asique, Amit Mittal, Mamta Jain, Vinod Kumar Paliwal (2021): Effect of three-body interaction on the topology of basins of convergnce linked to the libration points in the R3BP, *Planetary and Space Science*, 105281.

3. Md Sanam Suraj, **Rajiv Aggarwal**, Vipin Kumar Aggarwal, Md Chand Asique (2021): Combined effect of small perturbations in the Coriolis and centrifugal forces and three-body interaction on the existence of stationary points in the R3BP, *New Astronomy*, 89, 101630.

4. Tanvi, **Rajiv Aggarwal**, Yashi (2021): A fractional order HIV-TB co-infection model in the presence of exogenous reinfection and recurrent TB, *Nonlinear Dynamics*.

5. Md Sanam Suraj, **Rajiv Aggarwal**, Md Chand Asique, Amit Mittal: On the Basins of convergence in the magnetic-binary problem with angular velocity, *Computational and Mathematical Methods*, https://doi.org/10.1002/cmm4.1161.

6. Tanvi, **Rajiv Aggarwal**, Ashutosh Rajput, Mohammad Sajid (2021): Modeling Optimal Interventions to Curtail the ClusterBased Covid- 19 Pandemicin India: Efficacy of Prevention Measures, *Applied and Computational Mathematics an International Journal,* **20(1),** 70-94.

7. Vinay Kumar, **Rajiv Aggarwal**, Pankaj Sharma, Bhavneet Kaur (2021): Fractal basins of attraction in a binary quasar model, *New Astronomy*, **84,** 101553.

8. Md Sanam Suraj, **Rajiv Aggarwal**, Vipin Kumar ggarwal, Md Chand Asique, Amit Mittal (2021): On the Sitnikov-like N-Body problem with quasi-homogeneous potential, *Comp and Math Methods,* e1180.

Year-2020

1. Tanvi, **Rajiv Aggarwal** (2020): Estimatiing the Impact of Antiretroviral Therapy on HIV-TB Co-Infectionn: Optimal Strategy Prediction, *International Journal of Biomathematics,* **14(1)** 2150004.
2. Tanvi, **Rajiv Aggarwal**, Ashutosh Rajput (2020): Estimation of Transmission Dynamics of COVID-19 in India: The Influential Saturated Incidence Rate, *Applications and Applied Mathematics: An International Journal (AAM),* **15(2)**, 1046-1071.
3. Euaggelos, E. Zotos, Wein Chen, Md Sanam Suraj, **Rajiv Aggarwal**, Md Chand Asique, Charanpreet Kaur (2020): Revealing the Escape Dynamics in a Hamiltonian System with Five Exits, *JNMA,* (Accepted).
4. Md Sanam Suraj, **Rajiv Aggarwal**, Md Chand Asique, Amit Mittal (2020): On the modified circular restricted three-body problem with variable mass, *New Astronomy*, 101510.
5. Md Sanam Suraj, **Rajiv Aggarwal**, Amit Mittal, Md Chand Asique (2020): The perturbed restricted three-body problem with angular velocity: Analysis of basins of convergence linked to the libration points, *International Journal of Non-Linear Mechanics*, **123,** 103494.
6. Md Sanam Suraj, **Rajiv Aggarwal**, Amit Mittal, Md Chand Asique (2020): The effect of radiation pressure on the basins of convergence in the restricted four-body problem, *Chaos Solitons and Fractals*, **141**, 110347.
7. Vinay Kumar, Pankaj Sharma, **Rajiv Aggarwal**, Sushil Yadav, Bhavneet Kaur (2020): The unpredictability of the basins of attraction in photogravitational Chermnykh's

problem, *Astrophysics and Space Science*, **365(6)**, 101.

8. Md Sanam Suraj, **Rajiv Aggarwal**, Amit Mittal, O.P. Meena, Md Chand Asique (2020): On the spatial collinear restricted four-body problem with non-spherical primaries, *Chaos Solitons and Fractals*, **133**, 109609.
9. Md Sanam Suraj, **Rajiv Aggarwal**, Amit Mittal, O.P. Meena, Md Chand Asique (2020): The study of the fractal basins of convergence linked with equilibrium points in the perturbed (N + 1) body ring problem, *Astronomical Notes,* **341 (8)**, 741-761 .
10. Tanvi, **Rajiv Aggarwal** (2020): Stability analysis of a delayed HIV-TB co-infection model in resource limitation settings, *Chaos Solitons and Fractals*, **140**, 110138.
11. Dinesh Kumar, **Rajiv Aggarwal**, Bhavneet Kaur (2020): An insight on the restricted problem of 2 + 2 bodies with straight segment, *Astronomische Nachrichten*.
12. Tanvi, **Rajiv Aggarwal**, Tamas Kovacs (2020): Assessing the Effects of Holling Type-II Treatment Rate on HIV-TB Co-infection, *Acta Biotheoretica*, **68**.
13. Euaggelos, E. Zotos, Md Sanam Suraj, **Rajiv Aggarwal**, Charanpreet Kaur (2020): Basins of Convergence in the Collinear Restricted Four-body Problem with a Repulsive Manev Potential, *Applications and Applied Mathematics: An International Journal*, **15**(1), 38-57.
14. Md Sanam Suraj, Amit Mittal, **Rajiv Aggarwal**, Charanpreet Kaur (2020): Analysis of Copenhagen problem with a repulsive quasi-homogeneous Manev-type potential within the frame of variable mass, *Astronomische Nachrichten* , **341**(4), 410-423.
15. Amit Mittal, Md Sanam Suraj, **Rajiv Aggarwal** (2020): The analysis of periodic orbits generated by Lagrangian solutions of the restricted three-body problem with non-spherical primaries, *New Astronomy*, **74**, 101287.
16. Md Sanam Suraj, **Rajiv Aggarwal**, Amit Mittal, OP Meena, Md Chand Asique (2020): On the spatial collinear restricted four-body problem with non-spherical primaries, *Chaos, Solitons and Fractals*, **133**, 109609.
17. Tanvi, **Rajiv Aggarwal** (2020): Dynamics of HIV-TB co-infection with detection as optimal intervention strategy, *International Journal of Non-Linear Mechanics*, **120**, 103388.
18. Euaggelos, E. Zotos, Md Sanam Suraj, Amit Mittal, **Rajiv Aggarwal** (2020): Determining the properties of the basins of convergence in the generalized Henon-Heiles system, *International Journal of Bifurcation and Chaos*, **30**(1), 2050007.
19. Euaggelos, E. Zotos., Md Sanam Suraj, **Rajiv Aggarwal,** Amit Mittal (2020): Determining the basins of convergence in the Sitnikov three-body problem with a repulsive quasi-homogeneous Manev-type potential, *Nonlinear Studies*, **26**(4), 1027-1044.

Year-2019

1. Euaggelos, E. Zotos, Md Sanam Suraj,Amit Mittal, **Rajiv Aggarwal** (2019): On the convergence dynamics of the Sitnikov problem with non-spherical primaries, *International Journal of Applied and Computational Mathematics*, **5**, 43.
2. Euaggelos, E. Zotos., Md Sanam Suraj, **Rajiv Aggarwal**, Amit Mittal (2019): Orbit classification in the Copenhagen problem with oblate primaries, *Astronomical Notes,* **340**(8), 760-770.
3. Md Sanam Suraj, Amit Mittal, **Rajiv Aggarwal** (2019): Revealing the existence and stability of equilibrium points in the circular autonomous restricted four-body problem with variable mass, *New Astronomy*, **68**, 1-9.
4. Md Sanam Suraj, Elbaz I.Abouelmagd , **Rajiv Aggarwal**, Amit Mittal (2019): The analysis of Restricted five–body problem within frame of variable mass, *New Astronomy*, **70**, 12-21.
5. Md Sanam Suraj, Euaggelos E. Zotos, **Rajiv Aggarwal**, Amit Mittal (2019): Unveiling the basins of convergence in the pseudo-Newtonian planar circular restricted four- body problem, *New Astronomy*, **66**, 52-67.
6. Md Sanam Suraj, Md Chand Asique, Amit Mittal, **Rajiv Aggarwal** (2019): Divulging the effect of small perturbations in the Coriolis and centrifugal forces in the photogravitational version of autonomous restricted four-body problem with oblate primary, *Astronomical Notes*, **340**(5), 413-429.
7. Md Sanam Suraj, Md Chand Asique, **Rajiv Aggarwal** (2019): On the restricted four-body

problem when primaries are triaxial rigid bodies, *Astronomical and Astrophysical Transactions*, **31** (1), 2019.

8. Md Sanam Suraj, Prachi Sachan, Euaggelos, E. Zotos, Amit Mittal, **Rajiv Aggarwal** (2019): On the Newton-Raphson basins of convergence associated with the libration points in the axisymmetric restricted five-body problem: the concave configuration, *International Journal of Non-Linear Mechanics*, **112**, 25-47.
9. Md Sanam Suraj, Prachi Sachan, Euaggelos, E. Zotos, Amit Mittal, **Rajiv Aggarwal** (2019): On the fractal basins of convergence of the libration points in the axisymmetric five- body problem: the convex configuration. *International Journals of Non-Linear Mechanics*, **109**, 80-106.
10. Md Sanam Suraj, Prachi Sachan, **Rajiv Aggarwal**, Amit Mittal (2019): The effect of small perturbations in the Coriolis and centrifugal forces in the axisymmetric restricted five-body problem, *Astrophysics and Space. Sci.*, **364**, 44.
11. Md Sanam Suraj, **Rajiv Aggarwal**, Amit Mittal, Md Chand Asique, Prachi Sachan, (2019): On the perturbed photogravitational restricted five-body problem: the analysis of fractal basins of convergence, *Astrophysics and Space. Sci.*, **364,** 87.
12. E. Zotos, K.E. Papadakis, Md Sanam Suraj, Amit Mittal, **Rajiv Aggarwal** (2019): Networks of periodic orbits in the circular restricted three-body problem with first order post-Newtonian terms, Meccanica, **54**, 2339–2365.

Year-2018

1. Amit Mittal, Monika Arora, Md Sanam Suraj, **Rajiv Aggarwal** (2018): The basins of convergence in the planar restricted four-body problem with variable mass, *Applications and Applied Mathematics: An International Journal (AAM)*, **12**(2), 1230-1247.
2. Amit Mittal, **Rajiv Aggarwal**, Md Sanam Suraj, Monika Arora (2018): On the photo-gravitational restricted four-body problem with variable mass, *Astrophysics and Space Science*, **363**, 109.
3. Euaggelos E. Zotos, Satyendra Kumar Satya, **Rajiv Aggarwal**, Md Sanam Suraj (2018): Basins of Convergence in the Circular Sitnikov Four-Body Problem with Nonspherical Primaries, *International Journal of Bifurcation and Chaos*, **28**(5), 1830016.
4. Euaggelos E. Zotos. Md Sanam Suraj, Amit Mittal, **Rajiv Aggarwal** (2018): Comparing the Geometry of the Basins of Attraction, the Speed and the Efficiency of Several Numerical Methods, *International Journal of Applied and Computational Mathematics*, **4,** 105.
5. Euaggelos E. Zotos. Md Sanam Suraj, **Rajiv Aggarwal**, Satyendra Kumar Satya (2018): Investigating the Basins of Convergence in the Circular Sitnikov Three-Body Problem with Non-spherical Primaries, *Few-Body Systems*, **59,** 69.
6. Md Sanam Suraj,Amit Mittal, Charanpreet Kaur, **Rajiv Aggarwal**, (2018): On the existence of libration points in the spatial collinear restricted four-body problem within frame of repulsive Manev potential and variable mass, Chaos, Solitons and Fractals, **117**, 94-104.
7. Md Sanam Suraj, Euaggelos E. Zotos, Charanpreet Kaur, **Rajiv Aggarwal**, Amit Mittal (2018): Fractal basins of convergence of libration points in the planarCopenhagen problem with a repulsive quasi-homogeneous Manev-type potential, *International Journal of Non-Linear Mechanics*, **103**, 113-127.
8. Md Sanam Suraj, Monika Arora, Amit Mittal, **Rajiv Aggarwal** (2018): Exploring the fractal basins of convergence in the restricted four-body problem with oblateness, *International Journal of Non-Linear Mechanics*, **102**, 62-71.
9. Md. Sanam Suraj, **Rajiv Aggarwal**, Kumari Shalini, Md Chand Asique (2018): Out-of-Plane Equilibrium Points and Regions of Motion in Photogravitational R3BP when the Primaries are Heterogeneous Spheroid with Three Layers, *New Astronomy*, **63**, 15-26.
10. **Rajiv Aggarwal**, Amit Mittal, Md. Sanam Suraj, Virender Singh Bisht (2018): The effect of small perturbations in the Coriolis and centrifugal forces on the existence of libration points in the restricted four-body problem with variable mass. *Astronomische Nachrichten*, **339**(6), 492-515.

11. **Rajiv Aggarwal**, Bhavneet Kaur, Sushil Yadav (2018): Robe's Restricted Problem of 2 + 2 Bodies with a Roche Ellipsoid - Triaxial System, *The Journal of the Astronautical Sciences*, **65**, 63-81.

Year-2017

1. Dinesh Kumar, Mamta Jain, **Rajiv Aggarwal,** Satyendra Kumar Satya (2017): Stability of L4,5 in the R3BP Under the Combined Effects of Stokes Drag and Finite Straight Segment, *International Journal of Mathematics Trends and Technology*, **45**(3), 200-206.
2. Md. Sanam Suraj, **Rajiv Aggarwal**, Monika Arora (2017): On the Restricted four-body problem with the effect of small perturbations in the Coriolis and centrifugal forces, *Astrophysics and Space Science*, **362**, 159.
3. Vinay Kumar, Beena R Gupta, **Rajiv Aggarwal** (2017): Numerical Simulation of the Phase Space of Jupiter-Europa System Including the Effect of Oblateness, *Applications and Applied Mathematics: An International Journal (AAM)*, 12(1), 479-495.

Year-2016

1. Amit Mittal, **Rajiv Aggarwal,** Md. Sanam Suraj, Virender Singh Bisht (2016): Stability of libration points in the restricted four-body problem with variable mass, *Astrophysics and Space Science*, **361**(10), 417-424.
2. Bhavneet Kaur, **Rajiv Aggarwal**, Sushil Yadav (2016): Perturbed Robe's restricted problem of 2+2 bodieswhen the primaries form a Roche ellipsoidtriaxial system, *Journal of Dynamical Systems and Geometric Theories*, 14(2), 99-117.
3. Bhavneet Kaur, **Rajiv Aggarwal,** Sushil Yadav (2016): Perturbed Robe's restricted problem of 2+2 bodies when the primaries form a Roche ellipsoid – Triaxial System. *International Journal of Technology*, **6**(2), 150 – 160.
4. Dinesh Kumar, **Rajiv Aggarwal**, Mamta Jain (2016): Combined effects of Finite Straight segment and Oblateness on the Libration Points in the Restricted – Three Body Problem. International Journal of Technology, **6**(2), 185 – 190.
5. Preeti Jain, **Rajiv Aggarwal**, Amit Mittal, Abdullah (2016): Periodic Orbits in the Photogravitational Restricted Problem When the Primaries Are Triaxial Rigid Bodies, *International Journal of Astronomy and astrophysics*, **6**(1), 111-121.
6. Shalini Thakur, Md. Sanam Suraj, **Rajiv Aggarwal** (2016): The Nonlinear Stability of L4 in the R3BP when the Smaller Primary is a Heterogeneous Spheroid, *The Journal of the Astronautical Sciences*, **64**, 18-49.
7. Sushil Yadav, **Rajiv Aggarwal,** Bhavneet Kaur (2016): Resonance in the perturbations of a synchronous satellite due to angular rate of the earth-moon system around the sun and the earth's rotation rate, *International Journal of Advanced Astronomy*, **4** (2), 68-75.
8. Vinay Kumar, Beena R Gupta, **Rajiv Aggarwal** (2016): Numerical Investigation of a Star's Trajectory in Binary Quasar System. *Advanced Studies in Contemporary Mathematics*, **26**(3), 385 – 399.

Year-2015

1. Kavita Chauhan, S. N. Rai, **Rajiv Aggarwal** (2015): Effect of Perturbations in Coriolis and Centrifugal Forces on the Non-Linear Stability of L 4 in the Photogravitational Restricted Three Body Problem, *International Journal of Astronomy and astrophysics*, 5(4), 275-290. ISSN 2161-4725.
2. Mamta Jain, **Rajiv Aggarwal** (2015): "Existence and Stability of Non-Collinear Librations Points in the Restricted Problem with Poynting Robertson Light Drag Effect", International JournalofMathematics Trends andTechnology , 19(1), 20-33. ISSN 2231-5373.
3. Mamta Jain, **Rajiv Aggarwal** (2015): "Restricted three body problem with Stokes Drag effect, International Journal of Astronomy and astrophysics, 5(2), 95-105. ISSN 2161-4725.
4. Mamta Jain, **Rajiv Aggarwal** (2015): A study of non-collinear libration points in restricted three body problem with stokes drag effect when smaller primary is an oblate spheroid, Astrophysics and Space Science, **358**, 51.

5. **Rajiv Aggarwal**, Sushil Yadav, Bhavneet Kaur (2015): A Study of Resonance in a Geocentric Satellite Including its Latitude and Second Order Tesseral Harmonic Due to Earth's Equatorial Ellipticity, International Journal of Engineering and Management Research, 5 (3), 649-661.ISSN: 2250-0758.

Year-2014

1. Bhavneet Kaur, R**ajiv Aggarwal** (2014): Robe's restricted problem of 2+2 bodies when the bigger primary is a roche ellipsoid and the smaller primary is an oblate body. *Astrophysics and Space Science*, **349** (1), 57–69.
2. **Rajiv Aggarwal**, Bhavneet Kaur (2014): Robe's restricted problem of 2+2 bodies with one of the primaries an oblate body. *Astrophysics and Space Science*, **352** (2) 467–479.
3. Sushil Yadav, **Rajiv Aggarwal** (2014): Perturbations of a geo-centric synchronous satellite with resonance. Astrophysics and Space Science, Springer, **353** (2), 417-424.ISSN 1572-946X.

Year-2013

1. Bhavneet Kaur, **Rajiv Aggarwal** (2013): Robe's restricted problem of 2+2 bodies when the bigger primary is a Roche ellipsoid, Acta Astronautica, **89**, 31 – 37.
2. **Rajiv Aggarwal,** Sushil Yadav (2013): Resonance in a geo-centric synchronous satellite under the gravitational forces of the Sun, the Moon and the Earth including it's equatorial ellipticity, *Astrophysics and Space Science*, **349** (2), 727-743.
3. Sushil Yadav, **Rajiv Aggarwal** (2013): Resonance in the earth-moon system around the sun including earth's equatorial ellipticity, *Astrophysics and Space Science*, **348** (2), 367-375.
4. Sushil Yadav, **Rajiv Aggarwal** (2013): Resonance in a geo-centric satellite due to Earth's equatorial ellipticity, *Astrophysics and Space Science*, **347** (2), 249-259.

Year-2012

1. Bhavneet Kaur, **Rajiv Aggarwal** (2012): Robe's problem: its extension to 2+2 bodies, *Astrophysics and Space Science*, **339**(2), 283–294.

Year-2009

1. **Rajiv Aggarwal**, K.B. Bhatnagar (2009): Non Linear Stability of L4 in the Circular Restricted Three Body Problem for Radiated Axes Symmetric Rigid Primaries, *GPM Journal of Technology and Management*, **2**, 53-60.

Year-2006

1. **Rajiv Aggarwal**, Taqvi Z. A., Ahmad Iqbal (2006): Non Linear Stability of L4 in the Restricted Three Body Problem for Radiated Axes Symmetric Primaries with Resonances, *Bulletin of Astronomical Society of India*, **35**, 1-29.
2. **Rajiv Aggarwal**, Z.A. Taqvi, Iqbal Ahmad (2006): The non-linear stability of the triangular libration point L4, in the restricted three body problem when the both the primaries are triaxial and source of radiation with resonances, *Invertis Journal of Science and Technology*, India, 1.

Publications (in Proceedings)

Year-2020

1. Tanvi, **Rajiv Aggarwal**; Optimal Control Analysis of HIV-TB Co-infection Model. In: Mondaini R. (eds) Trends in Biomathematics: Modeling Cells, Flows, Epidemics, and the Environment. BIOMAT 2019. Springer, 259-273, ISBN: 978-3-030-46305-2 (2020).

Year-2015

1. Bhavneet Kaur, **Rajiv Aggarwal;** Robe's Restricted Problem of 2+2 Bodies with Perturbations in the Coriolis and Centrifugal Forces in a Roche Ellipsoid-Oblate System, Proceedings of the 11th International Conference on Applied and Theoretical Mechanics (MECHANICS '15), Kuala Lumpur, Malaysia, April 23-25, 2015, Recent Advances in Applied and Theoretical Mechanics, WSEAS Press, U.S.A., 40-51. ISBN: 978-1-61804-304-7, ISSN: 2227-4588 (2015).

Year-2014

1. Bhavneet Kaur, **Rajiv Aggarwal;** Effect of Perturbations in the Coriolis and Centrifugal Forces on the Location and Stability of the Equilibrium Solutions in Robe's Restricted Problem of 2+2 Bodies, Proceedings of the 19th International Conference on Applied Mathematics, (AMATH '14), Istanbul, Turkey December 15-17, 2014, Mathematical Applications in Modern Science, WSEAS Press, U.S.A., 79-90. ISBN: 978-1-61804-258-3, ISSN: 2227-4588 (2014).

Year-2010

1. Amit Mittal, **Rajiv Aggarwal**, K.B.Bhatnagar; Periodic Orbits Around L_4 in The Photogravitational Restricted Problem With Oblate Primaries. *Proceedings of the 2nd WSEAS international conference on Nanotechnology*, WSEAS Press, U.S.A.,195-200. ISBN: 978-960-474-163-2, ISSN: 1790-5117 (2010).

Workshops

1. Attended workshop on "Modern Trends in Celestial Mechanics and Astronomy" held at University of Delhi from March 17-19, 2010.
2. Attended workshop on " ICT workshop for Capacity Building of Delhi University Faculty" held at Sri Aurobindo College, University of Delhi from July 26-31, 2010.
3. Attended workshop as expert on "Updation of Mathematics Glossary - Project of Commission for Scientific and Technical Terminology (Ministry of HRD, India held at Government College, Haripur, Manali, H.P. from May 21-24, 2013.
4. Attended RMS-UGTE workshop on "Finite Group and Applications" held at Deshbandhu College, University of Delhi from Feb. 7-9, 2014.
5. Attended workshop as expert on "Updation of Mathematics Glossary - Project ofCommission for Scientific and Technical Terminology (Ministry of HRD, India held at RCERT, Sitapura, Jaipur, Rajasthan from Sep. 8-12, 2015.
6. Attended workshop as expert on "Updation of Mathematics Glossary " Project of Commission

for Scientific and Technical Terminology (Ministry of HRD, India held at Department of Mathematics, Balkrishan Institute of Technology, Ranpur, Kota, Rajasthan from Dec. 29, 2015 - Jan. 2, 2016.

7. Attended workshop as expert on "Updation of Mathematics Glossary - Project of Commission for Scientific and Technical Terminology (Ministry of HRD, India held at Department of Mathematics, Bhupal Nobels P.G. College, B.N. Institutions, Udaipur, Rajasthan from March 18-22, 2016.

8. Attended workshop as expert on "Updation of Mathematics Glossary - Project of Commission for Scientific and Technical Terminology (Ministry of HRD, India held at Suresh Gyan Vihar University, Jagatpura, Jaipur, Rajasthan from Sep. 26-30, 2016.

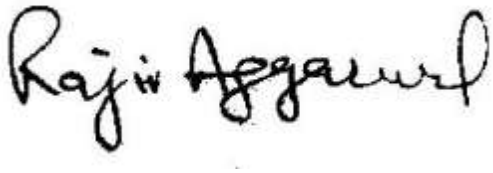
9. Attended workshop as expert on "Updation of Fundamental Mathematics Glossary-Project of Commission for Scientific and Technical Terminology (Ministry of HRD, India held at Department of Mathematics, Kurukshetra University, Kurukshetra from Jan. 30 – Feb. 03, 2017.

10. Attended workshop as expert on "Updation of Mathematics Glossary - Project of Commission for Scientific and Technical Terminology (Ministry of HRD, India held at Suresh Gyan Vihar University, Jagatpura, Jaipur, Rajasthan from March 16-20, 2017.

11. Attended five days short term course on "Dynamical Systems: Theory and Applications(DSTA 2016)" during June, 26-30, 2016 at Department of Applied Mathematics, Indian School of Mines, Dhanbad.

12. Attended workshop as expert on "Updation of Mathematics Glossary - Project of Commission for Scientific and Technical Terminology (Ministry of HRD, India held at Department of Mathematics, Kumaun University, Nainital, Uttrakhand March 17-20, 2017.

13. Attended two days ICSSR sponsored two day seminar entitled “Emerging Economics and Challenges to Sustainablity” held at Sri Aurobindo College, University of Delhi from March 20-30, 2016.



Signature of Faculty Member

- You are also requested to give your complete resume as a Word or PDF file to be attached as a link on your department page.