Dr. Animesh Mahata

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24th November ,2023–Till now
 Assistant Professor • Sri Ram Krishna Sarada Vidya Mahapitha,Kamarpukur,Hooghly-712612,West Bengal,India

1st March,2019–23th November,2023
Assistant Teacher • Mahadevnagar High School, Maheshtala, Kolkata-700141

Education

M.Sc in Applied Mathematics;BESUS (now IIEST, Shibpur), West Bengal, India.

PhD in Mathematics, Indian Institute of Engineering Science and Technology, Shibpur, Howrah- 711103, India.

Research Interest

Differential Equations; Nonlinear Dynamics; Mathematical modelling; Mathematical Biology; Ecology; Fuzzy mathematics; Fuzzy Differential Equation, Intuitionistic Fuzzy set Theory; Neutrosophic differential equation; Fractional calculus; Fractal and Fractional system , Optimization technique, Inventory,MAGDM strategy etc.

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Google Scholar link   https://scholar.google.co.in/citations?user=9R8B_VYAAAAJ&hl=en

Reviewer   Iranian journal of fuzzy system, Journal of Applied Mathematics and Computing,

Applied Sciences (MDPI), Fluids (MDPI), Results in Nonlinear Analysis, Computer

Modeling in Engineering &Sciences, Applied Mathematics and Computation, Complex & Intelligent Systems, Physica Scripta, Results in Physics etc.

M. Sc Dissertation   Stability Analysis from fourth order evolution for deep water capillary gravity waves in presence of air flowing over water.

Ph.D Thesis   Analysis of some bio-mathematical models in imprecise environment
Tools and Techniques   Matlab, Python, Advance Microsoft Office (Excel, Word, Power Point).

Seminar and Workshop

1. Participated in the workshop on "Mathematical Modelling and its Applications (WMMA- Organized by the Department of Mathematics, National Institute of Technology, Meghalaya, August 19-20, 2016
2. Presented paper   titled "Solution of Tumour Model in Environment" in UGC sponsored National Seminar "Differential Equations and Lie Groups"organized by Bangabasi Evening College, Kolkata in collaboration with Gurudas College, Kolkata, 10-12 November, 2016 at Bangabasi Evening College, Kolkata.
3. Presented paper titled   "The behavior of logistic equation with Allee effect in fuzzy environment: Fuzzy differential equation approach" in the National Seminar on "Recent Advances   in Computational Mathematics", 27-29 December, 2016, in Department of Applied Mathematics, University of Calcutta.
4. Participated in the "National Level Teachers' Enrichment Workshop in Mathematics (NLTEWM-2017) organized by the Calcutta Mathematical Society in joint collaboration with Raiganj University, West Bengal and the (Indian) Mathematics Consortium, Pune, June 15- 29, 2017.
5. Attended 5 day National workshop on "Recent Advances in Modelling & Computional Techniques in Applied Mathematics" organized by Department of Mathematics Indian Institute of Engineering Science and Technology, Shibpur, 20th Nov -24th Nov, 2017.

6. Attended in the "National Seminar on Mathematics and Applications (NSMA-2018)" held Department of Mathematics, University of Kalyani,February 22nd &23rd ,2018.

7. Participated in the one-week Faculty Development Programme on "BEHAVIORAL REMODELLING AND USE OF ICT TOOLS FOR CLASSROOM DELIVERY OF TEACHER" organized by E&ICT Academy IIT Guwahati held from 09 to 15 January, 2019 in association with Netaji Subhash Engineering College (NSEC), Kolkata and support from SkillGym(OPC) Pvt Ltd.
8. Participated in WBSCST sponsored National workshop on "Mathematical Analysis and its Applications (WMAA- 2019) organized by Bangabasi Evening College,Kolkata held on 22 February, 2019 at Bangabasi Evening College, Kolkata.
9. Attended as R.P in National Seminar on "Mathematical Modeling and its Application to Epidemiology" (NSMMAE-2022) organized by Department of Mathematics, Bangabasi Evening College, 10-11 November, 2022.

Publications   **2023**

➢ **Journal Publications**

1. Fractional order SEIQRD epidemic model of Covid-19: A case study of Italy, Subrata Paul, **Animesh Mahata**, Supriya Mukherjee, Prakash Chandra Mali,Banamali Roy, *PLoS One* 18, no. 3: e0278880
2. Study of dynamical behaviors of harvested stage-structured predator-prey fishery model with fear effect on prey under interval uncertainty,Narayan Mondal, Subrata Paul,**Animesh**

Mahata,Manajat Ali Biswas,Banamali Roy,Shariful Alam,FranklinOpen. **(Elsevier)**

3. Dynamical behavior of fractional order SEIR epidemic model with multiple time delays and its stability analysis, Subrata Paul, **Animesh Mahata** , Supriya Mukherjee, Prakash Chandra Mali, Banamali Roy, Examples and Counterexamples **(Elsevier)**
4. A Technique of Transportation Problem in Neutrosophic Environment**,** Karak Manas,. **Animesh Mahata,** Rong, Supriya Mukherjee, Sankar Prasad Mondal, Said Broumi, and Banamali Roy, Neutrosophic Systems with Applications 3. 17-34.

5. A prey-refuge harvesting model using intuitionistic fuzzy sets. Ashish Acharya, **Animesh Mahata**, Nikhilesh Sil, Sanjoy Mahato, Supriya Mukherjee, Sanat Kumar Mahato, and Decision Analytics Journal, *8*, p.100308. (**Elsevier**)
6. Analysis and interpretation of Malaria disease model in crisp and fuzzy environment Payal Singh, Bhumi Gor, Kamal Hossain Gazi, Supriya Mukherjee, **Animesh Mahata**, and Sankar Prasad Mondal. "Results in Control and Optimization: 100257 (**Elsevier)**
7. A Neutrosophic differential equation approach for modeling glucose distribution in the Bloods tream using neutrosophic sets, Acharya, Ashish, **Animesh Mahata**, Supriya Mukherjee, Manajat Ali Biswas, Krishna Pada Das, Sankar Prasad Mondal, and Banamali Roy. Decision Analytics Journal: 100264. (**Elsevier)**
8. Dynamical behavior of HIV infection in fuzzy environment,Nikhilesh Sil**, Animesh Mahata**, and Banamali Roy. Results in Control and Optimization 10: 100209. (**Elsevier)**
9. Analysis of drug diffusion in human connective tissue in neutrosophic environment, Supriya Mukherjee,Ashish Acharya,**Animesh Mahata**,Subrata,Said Broumi,and Banamali Roy ,Neutrosophic set and system,Vol.61,2023.

➢ Conference Publications

10. Fractional order SEIQRD epidemic model of Covid-19: a case study of India, Subrata Paul, **Animesh Mahata**, Supriya Mukherjee, Prakash Chandra Mal, Banamali Roy, proceedings of National Level Seminar on Mathematical Modeling and its Application to Epidemiology (NSMMAE- 2022) ISBN: 978-93-91741-36-5
11. Stability Analysis of Imprecise Dengue transmission model Ashish Acharya, **Animesh Mahata** , Supriya Mukherjee, Banamali Roy , Proceedings of National Level Seminar on Mathematical Modeling and its Application to Epidemiology (NSMMAE-2022), ISBN: 978-93-91741-36-5
12. Study of SIQR epidemic model in imprecise interval environment Manajat Biswas, Ashish Acharya **Animesh Mahata**, Subrata Paul, Supriya Mukherjee, Banamali Roy, Proceedings of National Level Seminar on Mathematical   Modeling   and its Application to   Epidemiology (NSMMAE- 2022),ISBN : 978-93-91741-36-5
13. Some Diabetes Model in Fuzzy Environment: Revisit Balaram Manna, Subrata Paul, **Animesh Mahata** ,Supriya Mukherjee, Subhabrata Mandal , Banamali Roy , Proceedings of National Level Seminar on Mathematical   Modeling   and its Application to Epidemiology (NSMMAE- 2022) 10-11, ISBN: 978-93-91741-36-5

➢ Book Chapters

14. Study of Fuzzy Fractional Caputo Order Approach to Diabetes Model, Subrata Paul, **Animesh Mahata**, Supriya Mukherjee, Sanat Kumar Mahato, Mehdi Salimi, and Banamali Roy. In Fuzzy Optimization,   Decision-making and Operations Research: Theory and Applications, pp. 423-434.Cham: Springer International Publishing

2022

➢ Journal Publications

15. Dynamics of SIQR epidemic model with fractional order derivative, Subrata Paul, **Animesh Mahata**, Banamali Roy. Partial Differ. Equ. Appl. Math.5: 100216. (**Elsevier)**
16. Dynamics of Caputo Fractional Order SEIRV Epidemic Model with Optimal Control and Stability Analysis. **Animesh Mahata**, Subrata Paul, Supriya Mukherjee, Meghadri Das, Banamali Roy. Int. J. Appl.   Comput. Math. 2022; 8(28). **(Springer)**
17. Stability analysis and Hopf bifurcationin fractional order SEIRV epidemic model with a time delay in infected individuals. **Animesh Mahata**,Subrata Paul, Banamali Roy. Partial Differ. Equ. Appl. Math. 2022; 5: 100282. (**Elsevier)**
18. Study of Fractional Order SEIR Epidemic Model and Effect of Vaccination on the Spread of COVID-19, Subrata Paul, **Animesh Mahata**, Supriya Mukherjee, Banamali Roy,Mehdi Salimi, Ali Ahmadian, Int. J. Appl. Comput. Math.; 8(237). **(Springer).**

19. Study of Fractional Order Tri-Tropic Prey-Predator Model with Fear Effect on Prey Population, Subrata Paul, **Animesh Mahata**,Supriya Mukherjee , Prakash Chandra Mali, Banamali Roy. Advances in Pure Mathematics, 12, 652-675.

➢ Conference Publications

20. Analysis of an Imprecise Delayed SIR Model System with Holling Type-III Treatment rate.Ashish Acharya,**Animesh Mahata**, Shariful Alam, Smriti Ghosh, and Banamali Roy. In Proceedings of 2nd International Conference on Mathematical Modeling and Computational Science: ICMMCS 2021, pp. 335-346. Singapore: Springer Nature Singapore, 2022.
21. Glucose Distribution and Drug Diffusion Mechanism in the Fuzzy Fluid Connective Tissue in Human Systems: A Mathematical Modelling Approach. Sachindra Nath Matia, **Animesh Mahata,** Shariful Alam, Banamali Roy, and Balaram Manna. In Proceedings of 2nd International Conference on Mathematical Modeling and Computational Science: ICMMCS 2021, pp. 169-177. Singapore: Springer Nature Singapore, 2022.
    Dynamics of Infected Prey–Predator System in Fuzzy Environment with Disease-
22. Selective Predation.Narayan Mondal, Sachindra Nath Matia, **Animesh Mahata,**Subhendu Maji, Shariful Alam. (2022). In: Peng, SL., Lin, CK., Pal, S. (eds) Proceedings of 2nd International Conference on Mathematical Modeling and Computational Science. Advances in Intelligent System and Computing, vol 1422. Springer, Singapore.

➢ Book Chapters

23. Mathematical model for Tumor-Immune Interaction in imprecise Environment with stability Analysis,Subrata Paul,**Animesh Mahata**,Supriya Mukherjee,Prakash chandra Mali,and Banamali Roy. In Nonlinear Dynamics and Applications: Proceeding ICNDA 2022, pp. 935-946. Springer International Publishing.

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2021
➢ Journal Publications

24. Study of two species prey-predator model in imprecise environment with MSY policy under different harvesting scenario, **Animesh Mahata**, Sankar Prasad Mondal, Banamali Roy, and Shariful Alam. Environment, Development and Sustainability 23:14908-14932. **(Springer)**

25. Comparison between pre-diabetes and diabetes model in fuzzy and crisp environment: fuzzy differential equation approach, Banamali Roy, **Animesh Mahata,** Hirak Sinha Balaram Manna, International Journal of Hybrid Intelligence, International Journal of Hybrid Intelligence 2.1: 47-66.

26. The behaviour of logistic equation in fuzzy environment: fuzzy differential equation approach. **Animesh Mahata,** Sachindra Nath Matia,Banamali Roy,Shariful Alam, and Hirak Sinha. International Journal of Hybrid Intelligence 2, no. 1: 26-46.

27. SEIR epidemic model and scenario analysis of COVID-19 pandemic. Subrata Paul, **Animesh Mahata**, Uttam Ghosh, Banamali Roy, Ecolo. Gene. Genom.; 19: 100087. (**Elsevier).**

➤ **Conference Publications**

28. Study of Time-Delayed Fractional order SEIRV Epidemic Model,Subrata Paul, **Animesh Mahata,** Supriya Mukherjee,Mainak Chakraborty, Banamali Roy, Proceeding of 2nd International Conference on Mathematics Modeling and Computational Science ICMMCS 2021(Springer), Volume: AISC, volume 1422, INBN: 978-981-19-0181-2.

29. Balaram Manna, Subrata Paul, **Animesh Mahata** ,Supriya Mukherjee , Banamali Roy. Study of Prey- Predator Model Formulation and Stability Analysis. Proceedings of 2nd International Conference on Mathematical Modeling and Computational Science ICMMCS 2021(Springer), Volume: AISC, volume 1422, INBN: 978-981-19-0181-2.

➤ **Book Chapters : NA**

2020

➤ **Journal Publications**

30. Influence of impreciseness in designing tritrophic level complex food chain modeling in interval environment, **Animesh Mahata,** Sankar Prasad Mondal, Banamali Roy, Shariful Alam, M Salimi, Ali Ahmadian, M Ferrara, Advances in Difference Equations 2020 (1), 1-24(**Springer).**

31. Cylindrical neutrosophic single-valued number and its application in networking problem, multi-criterion group decision-making problem and graph theory, Avishek Chakraborty, Sankar Prasad Mondal, Shariful Alam, **Animesh Mahata,** CAAI Transactions on Intelligence Technology 5.2, 68-77. I

➤ **Conference Publication(s):**
32. Linear fuzzy delay differential equation and its application in biological model with fuzzy stability analysis. **Animesh Mahata**, Sankar Prasad Mondal, Ali Ahmadian, Shariful Alam, and Soheil Salahshour. In Recent Advances on Soft Computing and Data Mining: Proceedings of the Fourth International Conference on Soft Computing and Data Mining (SCDM 2020), Melaka, Malaysia, January 22– 23, 2020, pp. 231-240. Springer International Publishing.
➤ **Books Chapters :** NA

2019
➤ **Journal Publication(s)**

33. Different Linear and Non-linear Form of Trapezoidal Neutrosophic Numbers, De-Neutrosophication Techniques and its Application in Time-Cost Optimization Technique, Sequencing Problem, Avishek Chakraborty, Sankar Prasad Mondal, **Animesh Mahata,**Shariful Alam, Rairo Operations Research

➢ **Conference Publications:** NA

➢ **Book Chapters:** NA

2018

➢ **Journal Publications**

34. The Behavior of Logistic Equation with Alley Effect in Fuzzy Environment: Fuzzy Differential Equation Approach, Soheil Salahshour, Aliahmadian, **Animesh Mahata**, Sankar Prasad Mondal, SharifulAlam, IACM, 2349-5103, 405-9854**, (Springer).**

35. Mathematical model for diabetes in fuzzy environment, **Animesh Mahata,** Sankar Prasad Mondal,Shariful Alam, Avishek Chakraborty, Sujit kumar Dey, Adrijit Goswami, Journal of Intelligent and Fuzzy Systems, ISSN: 1064-1246, 1875-89

36. Different Solution Strategies for Solving Epidemic Model in Imprecise Environment, **Animesh Mahata,** Sankar Prasad Mondal, Ali ahmadian, Fudiah Ismail,Shariful Alam and Soheil Salahshour, Complexity, article ID 4902142

37. Integral Equation with Pentagonal intuitionistic Fuzzy Number, Sankar Prasad Mondal, Manimohan Mandal, **Animesh Mahata,** Tapan Kumar Roy, Notes on Intuitionistic Fuzzy Sets, ISSN: 1310-4926, 2367-8283

38. Persistence of a Generalized Prey-Predator Model with Prey Reserved and Herd Behavior of Prey in Unreserved Zone, Where Both Side Prey Migration Rate Is Predator's Density, IJESI,7(3), 40-48.

➢ **Conference Publications:** NA
➢ **Books Chapters: NA**

2017

➢ **Journal Publications**

39. Mathematical model of glucose insulin regulatory system on diabetes mellitus in fuzzy and crisp environment, **Animesh Mahata,** Sankar Prasad Mondal, Shariful Alam ,Banamali Roy Ecological Genetics and Genomics, ISSN 24059854 **(Elsevier)**

40. Application of ordinary differential equation in glucose insulin regulatory system modeling in fuzzy environment, **Animesh Mahata,** Banamali Roy, Sankar Prasad Mondal, Shariful Alam, Ecological Genetics and Genomics, 2017, ISSN24059854 **(Elsevier)**

2016

➢ **Journal Publications** NA

➢ Conference Publications:
41. Solution of differential Equation with Intuitionistic Fuzzy Initial condition by Extension

Principal Method, **Animesh Mahata**, Sankar Prasad Mondal,Shariful Alam, Banamali Roy ,Proceedings of National Level Seminar On "DIFFERENTIAL EQUATIONS AND LIE GROUPS" ISBN:978-93-84106-87-4

42. Mathematical Model for Tumor in Fuzzy Environment, **Animesh Mahata**,Sankar Prasad Mondal,Shariful Alam, Banamali Roy, Proceedings of National Level Seminar on "DIFFERENTIAL EQUATIONS AND LIE GROUPS*"* ISBN:978-93-84106-87-4

➢ **Book Chapter(s):**

43. Fuzzy ordinary differential equation Model Glucose-Insulin Regulatory System with Stability

Analysis, Banamali Roy**, Animesh Mahata**, NASCENT: A Multidisciplinary Reasearch, Book,

Levant Books, ISBN: 978-93-84106-72-0

2015

➢ **Journal Publication(s)**

44. Classical Modeling of HIV Virus Infected Population in Imprecise Environments, Sankar Prasad Mondal, S Paul, **Animesh Mahata,** Paritosh Bhattacharya, TK Roy, Turkish Journal of Fuzzy Systems (TJFS) 6 (1)

Edited Book/ Proccedings: Proceedings in National Seminar on "Mathematical Modeling and its Application to Epidemiology" Edited by Dr. Banamali Roy, Dr. **Animesh Mahata,** & Dr. Manik Chandra Mukherjee, Co-Published by Department of Mathematics,**Bangabasi Evening College**,Kolkata-700009&**Levent Books,** 27C Creek Row,Kolkata 700014,India **ISBN:978-93-91741-36 (2023)**

Poster Preliminary concept study of Fractional Caputo order Approach to Diabetes model Motivation,Supriya Mukherjee,Subrata Paul,**Animesh Mahata,**Poulami Mukherjee**,**One Day International Seminar&Poster Presentation competition,Impact of modern civilization on Health and Disease Organization by Department of Zoology In Collaboration with Internal Quality Assurance Cell, Gurudas College College,Narkeldanga, Kolkata-700 054.