




Title	Dr.	First Name	Sada Nand	Last Name	Prasad	Photograph
Designation		Associate Professor				
Address		Acharya Narendra Dev College, (University of Delhi) Govindpuri, Kalkaji, Delhi-110019				
Residence		M-306, Ayush Enclave, Block - M, Pkt – C, DDA LIG Flats, Molarband, Sarita Vihar, New Delhi-110076				
Mobile		9711969937, 7428450443				
Email		<a href="mailto:sadanandprasad@andc.du.ac.in">sadanandprasad@andc.du.ac.in</a> <a href="mailto:prasadsadanand@yahoo.co.in">prasadsadanand@yahoo.co.in</a>				
Web-Page		<a href="https://sites.google.com/view/sadanandweb/home">https://sites.google.com/view/sadanandweb/home</a>				
Educational Qualifications						
Degree		Institution			Year	
Ph.D.		Department of Mathematics, University of Delhi			2013	
M.Phil.		Department of Mathematics, University of Delhi			2007	
PG		Zakir Husain Delhi College, University of Delhi			2004	
Career Profile						
November 7, 2006 to till date - Associate Professor, Dept. of Mathematics, Acharya Narendra Dev College (University of Delhi).						
Administrative Assignments						
<ol style="list-style-type: none"><li>1. Worked as NSS Convener, from July 2010 to June 2014.</li><li>2. Worked as Nodal Officer of Anti-Tobacco Squad</li><li>3. Member, Proctorial Committee 2010-2012, 2014-2016</li><li>4. Member, Internal Assessment &amp; Monitoring Committee 2010-2012</li><li>5. Member, Environment Society &amp; Remedial Coaching 2010-2012</li><li>6. Member, Sports Committee 2008-2010 to 2012-2014</li><li>7. Member, Admission Committee &amp; Library Committee 2016-2018</li><li>8. Worked as Convener of Cultural Events Management Committee from July 2014 to May 2016</li></ol>						

9. Teacher in Charge of Department of Mathematics from April 2016 to March 2018
10. Member of Sports committee and Canteen committee from April 2018 till date
11. SC/ST Observer (alternate) from 01.05.2018 to 30.04.2020
12. SC/ST Observer from 01.05.2020 till date
13. Coordinator Internal Quality Assurance Cell (IQAC) from April 04, 2022 till date

#### Areas of Interest / Specialization

1. Dynamical Systems
2. Space Dynamics
3. Non Linear Dynamics

#### Subjects Taught

1. Calculus
2. Differential Equations and Mathematical Modeling
3. Partial Differential Equation
4. Real Analysis
5. Numerical Analysis
6. Linear Programming
7. Algebra and Mechanics

#### Publications Profile

##### Chapters for Developing E-Content

- ❖ Mathematical Models (ISSN 2349-154X)
- ❖ Classification of Second Order Linear Equations (ISSN 2349-154X). Both the above for Differential Equation and Mathematical Modeling
- ❖ Reduction Formulae (ISSN 2349-154X)
- ❖ Concavity, Points of Inflexion, Curve Sketching (ISSN 2349-154X). Both the above for Calculus
- ❖ Differential Equations of first order but not of first degree, Clairaut's Equations and singular solutions, Envelops and Orthogonal trajectories, Existence and Uniqueness of Solutions of first order differential equations(Differential Equation) (ISSN 2349-154X)
- ❖ Numerical Solution of Ordinary Differential Equations – Numerical Methods (ISSN 2349-154X)

## **List of Research Papers Published in the International Journals**

### **1. Measuring Chaos: Topological Entropy and Correlation Dimension in Discrete Maps**

L. M. Saha, *Sadanand Prasad* and Manabu Yuasa  
Science and Technology, Vol. 24, 2012, pg.11 - 23, JAPAN  
(ISSN: 0916-2054)

### **2. Correlation Dimension and Topological Entropy in Discrete Maps**

L. M. Saha, *Sadanand Prasad* and R. K. Mohanty

Applied Mathematical Sciences, Journal of Hikari, Vol. 6, 2012, no. 84, 4197 – 4209, BULGARIA, ISSN: 1314-7552 (online), 1312-885X (print)(0.43)

### **3. Interesting Dynamic Behavior in Some Discrete Maps**

L. M. Saha, *Sadanand Prasad* and G. H. Erjaee  
Iranian Journal of Science & Technology, Vol. A3(Special issue-Mathematics),  
2012, Pg. 383-389  
ISSN: 1028-6276 (print version), 2364-1819 (electronic version)(0.56)

### **4. Dynamic Behavior of Generalized Invertible Henon Map**

L. M. Saha, *Sadanand Prasad* and R. K. Mohanty  
Int. J. of Appl. Math and Mech. **9** (18): 28-37, 2013  
(ISSN: 0973-0184)

### **5. Chaos Measure in Some Discrete Maps**

L. M. Saha and *Sadanand Prasad*  
Rev. Bull. Cal. Math. Soc. **20** (2): 113-120, 2012.(ISSN: 0008-0659)

### **6. Circular Restricted three-body problem when both the primaries are heterogeneous spheroid of three layer and infinitesimal body varies its mass**

Abdullah A. Ansari, Ziyad Ali AlHussain and *SadaNand Prasad*  
J. Astrophys. Astr. 39:57,2018, ISSN: 0250-6335 (print) 0973-7758 (web)  
(I.F.1.273 )(vol 39 (5), Pg: 57(1-20))

### **7. Complexity Dynamics of Invertible Henon Map**

L. M. Saha, *Sadanand Prasad*  
Indian Journal of Industrial and Applied Mathematics, Vol. **9**, No. **1**, **54-59**, **2018**  
**ISSN: 1945-919X(Web), 0973-4317(Print)**

**8. Synchronization of fractal order Rabinovich-Fabrikant systems using sliding mode control techniques**

Sanjay Kumar, Chaman Singh, Sada Nand Prasad, Chandra Shekhar and Rajiv Aggarwal

Archives of Control Sciences, Vol. 29(LXV) No. 2, 307-322, 2019 (ISSN: 1230-2384, 2300-2611) (I.F.2.240 )

**9. Variable mass of a test particle in Copenhagen problem with Manev-type potential**

Abdullah A. Ansari, Sada Nand Prasad, Mehtab Alam

Research and Review: Journal of Physics, Vol. 9(1), Pg. 17- 27, March 2020.  
(ISSN: 2278 - 2265)

**10. Complexity Dynamics of Gumowski-Mira Map,**

Sada Nand Prasad, K. R.Meena, Abdullah A. Ansari

Applications and Applied Mathematics: An International Journal (AAM), Vol. 15, Issue1 (June 2020), pp. 273 – 281. (ISSN: 1932-9466)(IF-0.5531)

**11. Chaos Measure in Autonomous LPA Model,**

Sada Nand Prasad, L. M. Saha, Abdullah A. Ansari

Gedrag & Organisatie Review, Vol. 33, Issue 02 (June 2020), pp. 2687 – 2694.  
(ISSN: 0921-5077) (IF 0.120)

**12. "The motion properties of the variable mass planetoid in the elliptical Sitnikov problem",**

Abdullah A. Ansari, Ph.D.; Laxmi Narain, Ph.D.; Sada Nand Prasad, Ph.D.

Gedrag & Organisatie Review, Vol. 33, Issue 03 (July 2020), pp. 398 – 404.

(ISSN: 0921-5077)

**13. "Generalized elliptic restricted four-body problem with variable mass",**

Abdullah A. Ansari, Sada Nand Prasad

"Astronomy Letters" Vol. 6, Issue 4, September 2020,pg: 275- 288, Russia  
ISSN: 1562-6873(Web), 1063-7737 (Print)

**14. "Perturbed six-body configuration with variable mass"**

Abdullah A. Ansari, Ph.D.; K. R. Meena, Ph.D.; Sada Nand Prasad, Ph.D.

Romanian Astronomical Journal, Vol. 30(2), October 2020, pg. 135-152.  
(ISSN:2285-3758, 1220-5168)

**15. "Vertical Motion of the Variable Infinitesimal Mass in the Circular Sitnikov Problem"**

Abdullah A. Ansari, Ph.D.; Sada Nand Prasad, Ph.D, Chaman Singh, Ph.D;

AAM journal, Vol. 15(2), December 2020, pg. 1396-1406. (ISSN: 1932-9466)

**16. Behaviour of motion of infinitesimal variable mass oblate body in the generalized perturbed circular restricted three-body problem**

Abdullah A. Ansari, Sada Nand Prasad, Mehtab Alam, Laxmi Narain

Italian journal of pure and applied Mathematics, Vol. 45(1), pg. 221-239, March 2022. (ISSN: 2239-0227)

**17. Measuring Complexity and Chaos in Three - Species Food Chain system with the Beddington-DeAngelis Functional Response,**

Sada Nand Prasad, L. M. Saha and Abdullah A. Ansari, Bulletin of The Allahabad Mathematical Society (BAMS), Vol.

37(1), pg. 53-69, Sept 2022. (ISSN: 0971 - 0491)

18. **The Dynamical Study of Variable Mass Test Particles in Nonlinear Sense of Restricted 3-Body Problem with Heterogeneous Primaries**, Sada Nand Prasad, Kumari Shalini and Abdullah A. Ansari, AAM journal, Vol. 16(2), December 2021, pg. 1274-1294. (ISSN: 1932-9466)
19. **Coupling Fear and Contagion for Modeling Epidemic Dynamics** IEEE TNSE, Early Access, pg. 1-14, July 2022 (ISSN: 2327-4697)
20. **Perturbed Robe's problem with charged bodies**, Abdullah A. Ansari<sup>1</sup>, Shiv K. Sahdev<sup>2</sup>, Rabah Kellil<sup>3</sup>, Sada Nand Prasad<sup>4</sup>Romanian Astronomical Journal, Vol. 32(2), pg: 83-94, August 2022 (ISSN:2285-3758, 1220-5168)
21. **Study the effect of Modified Newtonian Force on the restricted 3-body configuration in Non-Linear sense**, Bhawna Singh, Kumari Shalini, Sada Nand Prasad and Abdullah A. Ansari, Application and Applied Mathematics, Vol. 17(2), pg: 450-471, Dec 2022 (ISSN: 1932-9466)
22. **Study the non-linear stability of non-collinear libration point in restricted three-body configuration with the shapes of the primaries are taken as heterogeneous and finite-straight segment**, Bhawna Singh, Kumari Shalini, Sada Nand Prasad and Abdullah A. Ansari, Solar System Research, Vol. 57(3), pg: 51-77, April 2023 (ISSN: 0038-0946)

**Conference Organization/ Presentations and Workshops Organization/ Presentations**

- (1) National Seminar on “Changing Face of Higher Education in India” organized by Desh Bandhu college on **March 04, 2009**.
- (2) International conference on “Recent trends in Mathematics and its application (ICRTMA - 09)” organized by Department of Mathematics, Jamia Milia Islamia, New Delhi From **March 30, 2009 to March 31, 2009**.
- (3) Workshop cum Training Programme on “Modern Trends in Celestial Mechanics and Astronomy” organized by Desh Bandhu college From **March 17, 2010 to March 19, 2010**.
- (4) Workshop on application of Free/Open-Source Software in Science Teaching and Research organized by Acharya Narendra Dev College from **April 14, 2010 to April 15, 2010**.
- (5) 3<sup>rd</sup> National Seminar on “Recent trends in Advancement of Mathematical and Physical Sciences” organized by D.N. College Meerut From **Feb.05, 2011 to Feb. 06, 2011**.
- (6) Workshop on Scilab and its applications organized by Acharya Narendra Dev College from **March 10, 2011 to March 11, 2011**.

- (7) International Satellite Seminar on “Role of Mathematics in Science and Engineering (ISSRMSE-11)” organized by Graphic Era University, Dehradun From **May 13, 2011 to May 14, 2011.**
- (8) National Seminar on “**Recent trends in Advancement of Mathematical and Physical Sciences**” organized by D. N. College Meerut From **March.17, 2012 to March 18, 2012** and **presented** a paper entitled **Dynamic Behaviour in Some Discrete Maps.**
- (9) Workshop on “**Free / Open-Source Software Maxima**” organized by Acharya Narendra Dev College on **August 17, 2012.**
- (10) Delivered an *invited talk and conducted hands on session* in the workshop on Software “**Mathematica**” organized by Acharya Narendra Dev College on **March 01, 2013.**
- (11) National Seminar on “**Modelling and its applications in Science and Technology**” organized by IIMT Engineering College, Meerut From **March 22, 2013 to March 23, 2013** and **presented** a paper entitled **Dynamic Behaviour in Certain Discrete Maps.**
- (12) Participated in the seminar on “Recent Trends in Technical Terminology in Science” organized by Commission for Scientific and Technical Terminology at Sri Aurobindo College, University of Delhi From February 16, 2016 to February 17, 2016.
- (13) National conference on “**Advances in Operations Research and Mathematical Science (AORMS-2018)**” organized by Department of Research & Post Graduate Studies in Mathematics & Department of Statistics, Vardhaman College, Bijnor, U.P. in association with Operational Research Society of India (ORSI), Meerut Chapter from **Feb. 24, 2018 to Feb. 25, 2018** and **presented** a paper entitled **Manufacturer based Supply Chain Inventory Model with Ramp Type Demand under Inflation.**
- (14) National Workshop on “Advanced Numerical techniques and its applications” organized by Graphic Era Hill University, Dehradun From May 06, 2019 to May 11, 2019.
- (15) National Conference on “Emerging Trends in Mathematical Sciences for Industry and Environment: Use of Technical Hindi Terminology” organized by **Commission for Scientific and Technical Terminology at Shaheed Bhagat Singh College,** University of Delhi From **January 27, 2020 to January 29, 2020** and **presented** a paper entitled **Complexity Measure in Modified Henon Map.**
- (16) Webinar-03: ICT Enabled Higher Education in India: Challenges and Opportunities" organized by GAD Teaching Learning Center and PMMMNTT Scheme of MHRD on 15 April 2020.

- (17) International e- conference on “**Recent trends in Advancement of Mathematical and Physical Sciences**” organized by D. N. College Meerut From **May.22, 2020 to May 23, 2020.**
- (18) Webinar on “Occupied Territories of Ladakh.” organised by the Academic Affairs Committee, Shaheed Bhagat Singh Evening College on 18<sup>th</sup> May, 2020.
- (19) One Day International Webinar on “MATLAB Applications in Sciences and Engineering”, organized by Baba Farid College, Bathinda, Punjab on 29<sup>th</sup> May, 2020.
- (20) National Webinar on the topic “Application of Mathematical Modeling and Statistical Learning on COVID-19 and its Related Problems”, organized by the Department of Mathematics and Department of Statistics, Bareilly College, Bareilly on **June 07, 2020 (Sunday)**
- (21) National Webinar on the topic “Financial Mathematics: Pedagogy and Career Perspectives”, organized by the Department of Mathematics Lady Shri Ram College For Women, from **July 27, 2020 to July 31, 2020**
- (22) International e-conference on "*Mitigating Contemporary Environmental issues by sustainable approaches*" (ICMCESA-2022) organized by **Acharya Narendra Dev College**, University of Delhi From **February 22, 2022 to February 28, 2022** and presented a paper entitled **Measuring Complexity and Chaos in Three - species Food Chain System with mixed selection of Functional Response**
- (23) Organized National Workshop on Career Enhancement for Non-teaching staff at **Acharya Narendra Dev College**, University of Delhi From **September 15, 2022 to September 21, 2022**
- (24) Attended Two – Day Workshop on MATLAB organized by t **Acharya Narendra Dev College** October 12, 2022 and October 17, 2022.
- (25) Organized One day national conference One Earth, One Family, One Future at **Acharya Narendra Dev College**, University of Delhi on **April 03, 2023.**

#### Research Guidance and Research Projects (Major Grants/Research Collaboration):

##### Ph.D. student

1. **Bhawna Singh, Core Area: Non-linear stability in the restricted three-body problem with various perturbation (Registered 2021, University of Delhi)**
2. **Itender Kumar: Dynamical Systems (Registered 2021, University of Delhi)**
3. **Sonia Aneja: Dynamical Systems (Registered 2022, University of Delhi)**
4. **Preeti Yadav: Non Linear : Dynamics (Registered 2022, University of Delhi)**
5. **Pooja Khoda: Dynamical Systems (Registered 2023, University of Delhi)**

##### M. Phil. Student

1. **Pooja Khoda, successfully defended her dissertation entitled **Dynamical Behaviour of Tuberculosis Model with Different Fractional Derivatives** on 13.12.2022**

- Co-supervisor of Ms. Gunjan Goyal in M.Sc. Applied Mathematics, Amity University. She has submitted her dissertation entitled “**CHAOS MEASURE IN ECOLOGICAL MODELS**” on 30 May 2016.
- Guiding the ELITE project on “**Detection and measuring chaos in non-linear dynamical systems**” at Acharya Narendra Dev College, University of Delhi.

### **Research Project:**

Development of portable Electronic Nose prototype with autonomous & stand-alone operation for quantified Ambient Air Pollution (AAP) measurement using wireless data transfer protocol on Android® enabled mobile phones (DU INNOVATION PROJECT ANDC 304)

### **Association with Professional Bodies**

Life time member of Operational Research Society of India.

### **Other Activities**

1. Worked as an Observer in UGC-NET Examination December 2012 conducted by UGC.
2. Observer in IGNOU term end examination in June 2019.
3. Summer Institutes, refresher or orientation courses attended
  - Orientation Programme (**OR-60**) organized by **CPDHE** University of Delhi From **June 09, 2009 to July 06, 2009.**
  - Refresher Course (**RC-238**) Mathematics and statistics organized by **ASC H.P. University Shimla** from **July 18, 2011 to August 6, 2011.**
  - Refresher Course (SRC) Mathematics /Operational Research /Statistics and Computer Science organized by **CPDHE** University of Delhi From May 31, 2019 to June14, 2019.
  - FDP on Recent Trends in Research Methodology, E-content, Mathematical and Statistical Methods in Open Education World organized by **Kalindi College, University of Delhi in collaboration with Mahatma Hansraj Faculty Development Centre** from **Dec 17,2019 to Dec 23,2019.**
  - FDP on "Managing Online Classes and Co-Creating MOOCs" organized by **Ramanujan College, University of Delhi** from **April 20,2020 to May 06,2020.**
  - Coordinator for the Syllabus of B.A/B.Sc. (Prog.) 3-Core, 2-Core Courses and GE, Sem-VI, DSE : Discrete Dynamical Systems (3L + 1P)

Date: 20.04.2023

Place: New Delhi