



**Prof. M. LAKSHMANAN, F.N.A.Sc., F.A.Sc., F.N.A., FTWAS**  
**Professor of Eminence &**  
**DST-SERB National Science Chair**

**Contact**

Address : Department of Nonlinear Dynamics  
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**Academic Qualifications:**

Course	Year	Subject	Class	University
B.Sc.	1966	Physics	First	Madras
M.Sc.	1969	Physics	First	Madras
Post M.Sc.	1970	Theoretical Physics	First Rank	Madras
Ph.D.*	1974	Theoretical Physics	-----	Madras
D.Sc Honaris Causa	2009	Theoretical Physics	-----	University of Burdwan

### **Teaching Experience: 28 Years**

1. Professor of Physics, Bharathidasan University, Tiruchirapali, India (July 1984 - 2006)
2. Honorary Professor, S.N. Bose National Centre for Basic Sciences, Calcutta (1989-94)
3. Reader in Physics, Bharathidasan University (1982-84).
4. Reader in Physics, University of Madras Autonomous Post- Graduate Centre, Tiruchirapalli – (1978-82).

### **Research Experience: 44 Years**

1. DST-SERB National Science Chair (2021 Onwards)
2. DST-SERB Distinguished Fellow (2017 - 2021)
3. NASI - Platinum Jubilee Senior Scientist (2016 - 2018)
4. DAE-BRNS Raja Ramanna Fellow (2006-2007; 2011- 2016)
5. DST Ramanna Fellow (2007-2014)
6. Professor of Physics, Bharathidasan University, Tiruchirapali, India (1984-2006)
7. Honorary Professor, S.N. Bose National Centre for Basic Sciences, Calcutta (1989-94)
8. Reader in Physics, Bharathidasan University (1982-84).
9. Reader in Physics, University of Madras Autonomous Post- Graduate Centre, Tiruchirapalli – (1978-82).
10. Post-doctoral Fellow : University of Tuebingen, W.Germany (1976-77); Eindhoven University of Technology, Holland (1977-78).
11. Research Fellow/Research Assistant, University of Madras (1970-76).

### **Additional Responsibilities**

1. Dean, Faculty of Science, Bharathidasan University (2002-2005)
2. Head of the Department of Physics, Bharathidasan University (1994 - 2006): 12 years

3. Head in-charge, Department of Physics, Bharathidasan University (1987-89) : 2 years
4. Head, Centre for Nonlinear Dynamics, Bharathidasan University (1992 - 2006): 14 years
5. Member of the Syndicate, Bharathidasan University (1995-98)
6. Member of the Senate: 1987-89, 1994 - 2006
7. Member of the Standing Committee on Academic Affairs : 1993-99, 2003-2006
8. Convener, Disciplinary Committee, Bharathidasan University : 1995-98
9. Member, (i) Finance Committee, (ii) Staff Pattern Committee, (iii) Course Affiliation Committee, Bharathidasan University (1995-98)
10. Member, Various Committees on Course Affiliation to various Colleges/Inspection Commissions.
11. Member, Commission to evaluate the working of Cochin University of Science & Technology by the Govt. of Kerala.
12. Member, C.S.I.R. Bhatnagar Award Selection Committee at various times
13. Member/Convener of C.S.I.R. National Level Entrance Test at various times
14. Member, National Board for Higher Mathematics (1989-92)
15. Member, Program Advisory Committee, Department of Science & Technology, Govt. of India (1996 - 2002)
16. Member, Swarnajayanti Award Selection Committee of D.S.T. (1999 -2005 )
17. Member, Sectional Committee in Physical Sciences/Multidisciplinary Committee, etc. of Indian National Science Academy (1997-2000)
18. Member, TANSA Award Selection Committee (several years)
19. Convener, Madurai Local Chapter of the Indian National Science Academy, 2000-2003
20. Member, Council of Indian National Science Academy (2005-08)
21. Chairman, DST Expert Panel for Fast Track Scheme for Young Scientists in the area of Physical & Mathematical Sciences (2005-08; 2009 -2015 )
22. Member, National Committee for International Union of Pure and Applied Physics (2007-2012)
23. Member, Inter-Academy Council Committee on DST-INSPIRE (2009)

24. Elected Council Member, Indian Academy of Sciences (2010-12).
25. Chairman, DST Fast Track Scheme for Young Scientists in Physical and Mathematical Science for 2009-11, 2012 -2015.
26. Chairman, DST Committee on FIST programme in Physical Sciences (2012-16)
27. Member, Science Panel, Indian Academy of Sciences (2009 - 16 ).
28. Chairman, Physical Sciences Research Committee, CSIR (2015 - 2018).
29. Member, Empowered Committee, DST – SERB (2015 - 2018).
30. Visitor's Nominee – IIT, Guwahati (2015 - 2020).

### Areas of Research

Theoretical/Mathematical Physics with special reference to Nonlinear Dynamics:

(i) Solitons and (ii) Chaos

### Research Supervision / Guidance

Program of Study		Completed	Ongoing
Research	NPDF/DSKPDF/ RA/WOS	35	06
	Ph.D.	36	01
	M.Phil.	50	--
Project	PG	50	--

### Publications

International		National		Others
Journals	Conferences	Journals	Conferences	Books / Chapters / Monographs / Manuals
408	26	12	Xx	22

Google Scholar (10-01-2023)

Cumulative Impact Factor (as per JCR) :	705.77
h-index :	67
i10 index :	279
Total Citations :	17257

## Funded Research Projects

### Completed Projects

S. No	Agency	Period		Project Title	Budget (Rs. In lakhs)
		From	To		
1	INSA	1979	1982	Nonlinear Wave Propagation in Ferromagnets	2.0
2	CSIR	1980	1983	Biological Oscillators	3.0
3	UGC	1980	1983	Differential Geometry of Soliton Systems	2.5
4	UGC	1980	1983	Nonlinear Dynamics (Career Award)	2.5
5	DST	1985	1989	Nonlinear Excitations in Magnetic Materials	3.0
6	DST	1986	1989	Solitons	3.0
7	CSIR	1990	1994	Classical and Quantum Chaos in Rydberg Atoms in External Field	4.0
8	DST	1990	1995	Nonlinear Dynamics of Magnetic Systems: Coherent and Chaotic Structures	6.25
9	DAE	1994	1997	Symmetry, Singularity Structure and Bifurcation Aspects of Certain Nonlinear Differential Equations	2.0
10	DST	1995	2002	Establishment of a Nonlinear Dynamics Unit	83.0
11	DAE	1998	2001	Nonlinear Differential Equations of Diffusive Type : Spatio Temporal Patterns Bifurcation and Chaos	5.0
12	CSIR	2002	2005	Optical Soliton Interactions in Birefringent Fibers	12.0
13	DAE	2001	2004	Integrability and Nonintegrability of Nonlinear Differential Equations: Role of	7.2

				Symmetries and Singularity Structures	
14	DST	2002	2007	Establishment of a Nonlinear Dynamics Unit – Phase II	100.12
15	DAE	2004	2007	DAE Project “Spatio-temporal Patterns and Localized Structures in Nonlinear Schrodinger Family of Equations in (2+1) Dimensions	13.0
16	DAE (NBHM)	From the year 1990 onwards. Annual Grant		Library Grant to the Centre for Nonlinear Dynamics	4.30 per year
17	DST	2007	2010	DST Ramanna Fellowship Grant	40.2
18	DST	2008	2015	Establishment of a Nonlinear Dynamics Unit – Phase III	284.00
19	DST	2011	2014	DST Ramanna Fellowship project	33
20	DAE	2015	2018	DAE – NBHM Project “Moving curves and surfaces in potential fields: Geometrical connections to spin systems and soliton equations”	12
21	CSIR	2015	2019	CSIR Project “Nonlinear Dynamics of Spin Transfer Nano Oscillators (STNOs)”	15
22	DST	2016	2019	DST-SERB Project “ Collective Dynamical Structures in Coupled Nonlinear Oscillators“	29
23	DST	2018	2021	DST-SERB Distinguished Fellowship Project	84

### Ongoing Projects

S. No	Agency	Period		Project Title	Budget (Rs. In lakhs)
		From	To		
1	DST	2021	2024	DST-SERB National Science Chair	132

## **Distinctive Achievements / Awards**

- 1. University Grants Commission Career Award for Young Scientists (1980).**
- 2. Raman Research Prize-Gold Medal, University of Madras (1980).**
- 3. Best University Teacher Award (1984), Govt. of Tamil Nadu.**
- 4. S.S. Bhatnagar Prize in Physical Sciences (1989) (India's highest scientific prize).**
- 5. Member, National Board for Higher Mathematics (1989-92).**
- 6. Fellow of the Indian National Science Academy (1992).**
- 7. Fellow of the Indian Academy of Sciences (1991).**
- 8. Fellow of the National Academy of Sciences, India (1989).**
- 9. Prof. G. Sankaranarayanan Endowment Lecturer, Annamalai University (1991).**
- 10. Tamilnadu Scientists Award (TANSA) - 1993/94.**
- 11. U.G.C. Hari Om Trust - Meghnad Saha Award in Theoretical Sciences (1990).**
- 12. Hari Om Ashram Prerit Shri Hari Vallabhdas Chunilal Shah Research Endowment Prize - 1996**
- 13. Dr. Biren Roy Memorial Lecture Award of INSA - 1998.**
- 14. Foreign Member, Royal Academy of Sciences, Uppsala, Sweden (1999).**
- 15. Professor M.M. Thomas Endowment Lectureship Award, Bishop Moore College, Mavelikara (2001)**
- 16. Awarded ICTP Senior Associate Fellowship, Trieste, Italy (2002-2008).**
- 17. 76<sup>th</sup> Indian Science Congress Madurai Kamaraj University Distinguished Scientist Award (2004).**
- 18. Dr. V. Shanmuga Sundaram Endowment Lectureship Award, Annamalai University (2005).**
- 19. Professor Vishnu Vasudeva Narlikar Memorial Lecture Award of INSA - 2006 (Given in 2008) .**

- 20. Goyal Prize in Physics 2005 (given in 2008) .**
- 21. A.C. Banerjee Memorial Lecture Award of National Academy of Sciences -2007.**
- 22. Conferred Doctor of Science (Honoris Causa) by University of Burdwan for outstanding contribution to Nonlinear Dynamics (2009).**
- 23. Elected Fellow of the Academy of Sciences for the Developing World (FTWAS)- 2009.**
- 24. NASI – Platinum Jubilee Senior Scientist (2016).**
- 25. R.D. Birla Award for Excellence in Physics – 2014 by Indian Physics Association.**
- 26. G. N. Ramachandran Award for Excellence in Physics – 2018 by SASTRA Deemed University, Tamil Nadu.**
- 27. DST – SERB Distinguished Fellow (2018-2021).**
- 28. Tamil Nadu Government's prestigious Dr. A.P.J Abdul Kalam Award (2021).**
- 29. DST – SERB National Science Chair (2021).**
- 30. American Physical Society Outstanding Referee Award (2022).**
- 31. Europhysics Letters Distinguished Referee Award (2022).**

### **Events organized in leading roles**

Number of Seminars / Conferences / Workshops / Events organized: 14

1. Organizer, SERC (DST) Winter School on 'Solitons' during Jan. 5-17, 1987 at Tiruchirapalli.
2. Local Secretary and Organizer of the 57th Annual Session of the National Academy of Sciences, India and the National Symposium on 'New Materials' held at Tiruchirapalli during Oct. 7-10, 1987.
3. Coorganizer, International Workshop on 'Nonlinear Evolution Equations: Integrability and Spectral Methods' held at Como, Italy during July 4-15, 1988.



4. Organizer, International Workshop on 'Symmetries and Singularity Structures of Nonlinear Dynamical Systems' at Tiruchirapalli, during Nov. 29-Dec. 2, 1989.
5. Organizer, NBHM Winter School on 'Analysis, Manifolds and Physics' held at Tiruchirapalli during Dec 20, 1992-Jan. 9, 1993.
6. Organizer, Winter School on "Integrable Systems and Low Dimensional Many Body Problems" held at Tiruchirapalli during Dec.18-23, 1995.
7. Organizer, Workshop on "Recent Developments in Chaotic Dynamics," Tiruchirapalli Dec. 9-13, 1996.
8. Organizer, International Conference on "Nonlinear Dynamics: Integrability and Chaos" to be held at Tiruchirapalli during February 12-16, 1998.
9. Organizing Committee Member/Editor-in-Chief of Annual National Conferences on Nonlinear Systems & Dynamics (Kharagpur, 2004; Aligarh, 2005; Chennai 2006).
10. Local Organizer, 71st Annual Meeting of Indian Academy of Sciences at Trichy during November 11-13, 2005.
11. Organizing Committee Member of numerous other meetings in Nonlinear Dynamics inside and outside India.
12. Organizer, NMI workshop on "Nonlinear Intergable Systems and thier Applications" held at Bharathidasan University, during Feb 24- March 01, 2014.
13. Director, Academies sponsored Refresher Course on "Quantum Mechanics" held at Bishop Moore College, Mavelikara, Kerala during May 5-17 , 2014 & Refresher Course on "Classical Mechanics and Electromagnetism" held at SDM College, Ujire, during December 8-20, 2014.
14. Coordinator of numerous Academy sponsored Lecture workshops in Theoretical Physics / Nonlinear Dynamics.

### **Events Participated (optional)**

#### **Conferences / Seminars / Workshops:**

1. Numerous Conferences/Seminars/Workshops in Theoretical Physics and Nonlinear Dynamics

#### **Other Training Programs**

1. Academic sponsored and other Lecture Workshops/Refresher Courses
2. DST-INSPIRE programme

## Overseas Exposure / Visits

1. Japan Society for Promotion of Science Fellowship, Kyoto University, Kyoto, Japan (1984-85).
2. Swedish Natural Science Research Council Guest Scientist (1981, March-June).
3. Royal Society and Nuffield Foundation Bursary, University of Manchester Institute of Science and Technology, U.K. (1979-80).
4. Alexander von Humboldt Foundation Fellow, University of Tuebingen, (1976-77); Univ. of Hanover (1982, April-May), Potsdam Climate Research Institute (2012, Sept. – Dec.) W. Germany.
5. Eindhoven University of Technology, Holland Post-doctoral Fellow (1977-78).
6. International Centre for Theoretical Physics, Trieste, Italy (May-Aug. 1975; April-June 1986).
7. Institute of Theoretical Physics, University of Utrecht, Holland (Aug-Oct. 1975).
8. NATO Advanced Study Institute, Banff, Alberta, Canada (Aug. 1980).
9. Department of Mathematics, University of Melbourne/University of Adelaide, Australia (Feb-March 1983).
10. Centro di Cultura A. Volta, Como, Italy (July 1988).
11. Fudan University, Shanghai, China (April 1989).
12. Department of Science and Technology-USSR Academy of Sciences Long Term Programme Visitor to USSR (July- Aug. 1990).
13. Indian National Science Academy-Polish Academy Exchange Programme Visitor to Poland (Jan/Feb.1991).
14. Indo-Greek Cultural Exchange Programme Visitor to Greece (July 1991).
15. INSA - Royal Society Visitor to U.K. during Sept.-Nov.1996.
16. Indo-Finnish Cultural Exchange Programme Visitor to University of Turku, Finland, November 1997.
17. Swedish Natural Science Research Council Visiting Scientist, University of Uppsala, Sweden, May 1999.
18. INSA-Royal Netherlands Academy Visitor Holland, Sept. 1999.

19. Visitor to Ukraine/Bulgaria, 2001.
20. Visiting Scholar, Princeton University, U.S.A., May-June 2002.
21. JSPS Invitation Fellow, Osaka City University, Osaka, Japan 1 October – 30 November 2002.
22. Visitor, Institute of Physics, University of Potsdam, Germany during November 2004
23. INSA-French Academy of Sciences Visitor to France during 14-28, March 2005
24. Visiting Scientist, Los Alamos National Laboratory, U.S.A., May-June 2006
25. JSPS Invitation Fellow, University of Tokyo, Japan 15 July 2006 – 15 September 2006
26. Visiting Scientist, Los Alamos National Laboratory, U.S.A., August –October 2007
27. Invited Speaker in the Robin Bullough Memorial Meeting at University of Manchester, U.K. during 10-11, June 2009
28. Invited Speaker in the International Conference on “Nonlinear Evolution Equations and Dynamical Systems-2009” held at Isola Rossa, Sardinia, Italy during May 16-23, 2009
29. Invited Speaker in the SIAM Conference on “Nonlinear Waves and Coherent Structures (NW08)” was held at Rome (Italy), during 21-24 July 2008
30. Invited Speaker at the International Conference on “Symmetry plus Integrability” held at the South Padre Island , Texas during June 10-14, 2011.
31. Invited Speaker at the Physcon-2011 conference held at Leon, Spain during September 4-8, 2011.
32. Invited speaker at the International Conference on “ Theory and Applications in Nonlinear Dynamics” held at Seattle, USA during Aug. 26-30, 2012
33. Alexander von Humboldt foundation visitor at Potsdam Climate Impact Research Institute, Potsdam Germany during Sept 8 – Dec 6, 2012
34. Invited speaker at the International Conference on “Data Analysis” at PIK, Potsdam, Germany during 19 March – 27 March 2013
35. Invited speaker at the JNMP conference at Norway during 10-13 June, 2013.
36. Visiting Scientist, Los Alamos National Laboratory, U.S.A., during 15 June – 15 July 2013, 15 May – 15 July 2015 and 15 May – 15 July 2017, 01 May – 31 July 2019.

## **Membership in**

### **Professional Bodies**

1. **Elected Fellow of the Indian National Science Academy (FNA)(1992).**

2. **Elected Fellow of the Indian Academy of Sciences (FASc) (1991).**
3. **Elected Fellow of the National Academy of Sciences (FNASc) (1989).**
4. **Elected Fellow of the Academy of Sciences for the Developing World (FTWAS) (2009).**
5. **Elected Foreign Member, Royal Academy of Sciences, Uppsala, Sweden (1999).**

### **Editorial Board**

1. International Journal of Bifurcation & Chaos (1991- 2018).
2. Chaos, Solitons & Fractals (1993-2009).
3. Physics News (1994-96)
4. Journal of Nonlinear Mathematical Physics (1995 - 2010)
5. Guest Editor-in-Chief, Special issue on 'Solitons' of Chaos, Solitons & Fractals (1995)
6. Indian Journal of Physics (2002-04)
7. Proceedings of Royal Society of London A (2006 - 12 )
8. Advances in Mathematical Physics (2009 – 2016)
9. Physical Review E (2023-2025)

### **Advisory Board**

1. Member of the Syndicate, Bharathidasan University (1995-98)
2. Member of the Senate: 1987-89, since 1994
3. Member of the Standing Committee on Academic Affairs : 1993-99, 2003-
4. Convener, Disciplinary Committee, Bharathidasan University : 1995-98
5. Member, (i) Finance Committee, (ii) Staff Pattern Committee, (iii) Course Affiliation Committee, Bharathidasan University (1995-98)
6. Member, Various Committees on Course Affiliation to various Colleges/Inspection Commissions.
7. Member, Commission to evaluate the working of Cochin University of Science & Technology by the Govt. of Kerala.
8. Member, Steering Committee, State Level Entrance Examination (1996-98)

### **Academic Bodies (such as Board of Studies etc.,)**

1. Chairman Board of Studies in Physics (PG); 1986-89, 1993-99, 2003-
2. Member Board of Studies in Physics,
  1. Pondicherry University
  2. Alagappa University
  3. Cochin University of Science & Technology
  4. Madurai Kamaraj University
  5. Manonmaniam Sundaranar University
  6. University of Madras
  7. St. Joseph's College, Trichy
  8. Seethalakshmi Ramaswamy College, Trichy
  9. Regional Engineering College (NIT), Tiruchirappalli
  10. A.V.V.M. Sri Pushpam College, Poondi
  11. A.V.C. College, Mayiladuthurai
3. Member, Governing Board/Council
  1. Bishop Heber College, Trichy
  2. A.V.V.M. Sri Pushpam College, Poondi
  3. Holy Cross College, Trichy
  4. Nehru Memorial College, Puthanampatti
  5. J.J. college, Pudukkottai

### **Resource persons in various capacities**

Number of Invited / Special Lectures delivered: **Numerous all over the world.**

#### **Examples:**

1. Invited Speaker in the Robin Bullough Memorial Meeting at University of Manchester, U.K. during 10-11, June 2009

2. Invited Speaker in the International Conference on “Nonlinear Evolution Equations and Dynamical Systems-2009” held at Isola Rossa, Sardinia, Italy during May 16-23, 2009
3. Invited Speaker in the SIAM Conference on “Nonlinear Waves and Coherent Structures (NW08)” was held at Rome (Italy), during 21-24 July 2008
4. Invited Speaker at the International Conference on “Symmetry plus Integrability” held at the South Padre Island , Texas during June 10-14, 2011.
5. Invited Speaker at the Physcon-2011 conference held at Leon, Spain during September 4-8, 2011.
6. Invited speaker at the International Conference on “ Theory and Applications in Nonlinear Dynamics” held at Seattle, USA during Aug. 26-30, 2012
7. Invited speaker at the International Conference on “Data Analysis” at PIK, Potsdam, Germany during 19 March – 27 March 2013
8. Invited speaker at the JNMP conference at Norway during 10-13 June, 2013.

## Others

1. Articles published in Newspapers / Magazines : 07
  1. Duffing Oscillator: A Paradigm of Chaos, M. Lakshmanan and K. Murali, Physics News 24, 3-12 (1993)
  2. Harnessing Chaos: Synchronization and Secure Signal Transmission, M. Lakshmanan and K. Murali, Current Science 67, 989-994 (1994)
  3. Rydberg Atoms and Molecules: Testing Grounds for Quantum Manifestations of Chaos, M. Lakshmanan and K. Ganesan, Current Science 68, 38-44, (1995)
  4. Nonlinearity in Ferromagnetism: Some Potential Applications, M. Lakshmanan and B. Subash, Physics News 44, 4-10 (2015).
  5. Waves and Oscillations in Nature : A. Satya Narayanan and Swapan K. Saha Book Review, M.Lakshmanan, Current Science, 110 2306-2307 (2016).
  6. Anjan Kundu (1953-2016), M Lakshmanan, BK Chakrabarti, Current Science, 112, 865-866 (2017).
  7. K. Porsezian (1963-2018), M Lakshmanan, Current Science, 115, 992-993 (2018).

2. No. of PhD Thesis evaluated : 80
3. No. of PhD Public Viva Voce Examination conducted : 65

## Recent Publications

### Last 5 years (2018-2022)

1. Chimera at the phase-flip transition of an ensemble of identical nonlinear oscillators, R. Gopal, V. K. Chandrasekar, D. V. Senthilkumar, A. Venkatesan and M. Lakshmanan, *Commun. Nonlinear Sci. Numer. Simul.*, 59, 30-46 (2018)
2. Chimera states in two-dimensional networks of locally coupled oscillators, S.Kundu, S. Majhi, B. K. Bera, D. Ghosh and M. Lakshmanan, *Phys. Rev. E* 97, 022201(12 pages) (2018).
3. Distinct collective states due to trade-off between attractive and repulsive couplings, K. Sathyadevi, S. Karthiga, V. K. Chandrasekar, D. V. Senthilkumar and M. Lakshmanan, *Phys. Rev. E* 97, 032207(12 pages)(2018).
4. Stable amplitude chimera states in a network of locally coupled Stuart- Landau oscillators, K. Premalatha, V. K. Chandrasekar, M. Senthilvelan and M. Lakshmanan, *Chaos* 28, 033110(13 pages)(2018).
5. Lie symmetry analysis and group invariant solutions of the nonlinear Helmholtz equation, K. Sakkaravarthi, A. G. Johnpillai, A. Durga Devi, T. Kanna and M. Lakshmanan, *Applied Mathematics and Computation* 331, 457-472(2018).
6. On the interconnections between various analytic approaches in coupled first-order nonlinear differential equations, R. Mohanasubha, V. K. Chandrasekar, M. Senthilvelan and M. Lakshmanan, *Communications in Nonlinear Science and Numerical Simulation*, 62, 213-228 (2018).
7. Non-minimally coupled scalar field in Kantowski-Sachs model and symmetry analysis, S. Dutta, M. Lakshmanan and S. Chakaraborthy, *Annals of Physics*, 393, 254-263(2018).
8. Exact intrinsic localized excitation of an anisotropic ferromagnetic spin chain in external magnetic field with Gilbert damping, spin current and PT symmetry, M. Lakshmanan and Avadh Saxena, *Physics Letters A* 382, 1890-1895 (2018).
9. Strange nonchaotic attractor for computation, M. Sathish Aravindh, A. Venkatesan and M. Lakshmanan, *Phys. Rev. E*, 97, 052212 (2018).
10. Harnessing energy sharing collisions of Manakov solitons to implement universal NOR and OR gates, M. Vijayajayanthi, T. Kanna, K. Murali and M. Lakshmanan, *Phys. Rev. E*, 97, 060201(R) (2018).
11. Imperfect amplitude mediated chimera states in a nonlocally coupled network, K. Sathyadevi, V. K. Chandrasekar, D. V. Senthilkumar, M. Lakshmanan, *Frontiers in Applied Mathematics and Statistics* 4, 58 (2018).

12. Conjugate coupling-induced symmetry breaking and quenched oscillations, K Ponrasu, K Sathiyadevi, VK Chandrasekar, M Lakshmanan, *Europhys. Lett.*, 124, 20007 (2018).
13. On symmetry preserving and symmetry broken bright, dark and antidark soliton solutions of nonlocal nonlinear Schrödinger equation, N Vishnu Priya, M Senthilvelan, G Rangarajan, M Lakshmanan, *Physics Letters A* 383, 15-26 (2019).
14. Degenerate soliton solutions and their dynamics in the nonlocal Manakov system : I Symmetry preserving and symmetry breaking solutions, S. Stalin, M. Senthilvelan and M. Lakshmanan, *Nonlinear Dynamics* 95, 343-360 (2019).
15. Energy sharing collision and the dynamics of degenerate solitons in the nonlocal Manakov system, S. Stalin, M. Senthilvelan and M. Lakshmanan, *Nonlinear Dyn.* 95, 1767 (2019).
16. Nondegenerate solitons in Manakov system, S. Stalin, R. Ramakrishnan, M. Senthilvelan and M. Lakshmanan, *Phys. Rev. Lett.* 122, 043901(2019).
17. Tailoring PT -symmetric soliton switch, A. Govindarajan, Amarendra K Sarma and M. Lakshmanan, *Opt. Lett.* 44, 663-666 (2019).
18. Chimera Patterns in Three-dimensional Locally Coupled Systems, S. Kundu, B. K. Bera, D. Ghosh and M. Lakshmanan, *Phys. Rev. E* 99, 022204 (2019).
19. Frustration induced transient chaos, fractal and riddled basins in coupled limit cycle oscillators, K. Sathiyadevi, S. Karthiga, V. K. Chandrasekar, D. V. Senthilkumar and M. Lakshmanan, *Commun. Nonlinear Sci. Numer. Simul.*, 72, 586-599 (2019).
20. Phase locking of spin transfer nano-oscillators using common microwave sources, R. Gopal, B. Subash, V. K. Chandrasekar and M. Lakshmanan, *IEEE Transactions on Magnetics (Early Access)*, 2908954, 1-9 (2019).
21. Long-range interaction induced collective dynamical behaviors, K. Sathiyadevi, V. K. Chandrasekar, D. V. Senthilkumar, M. Lakshmanan, *J. Phys. A: Math. Theor.* 52 184001 (2019).
22. Quantum Cosmology for Non-minimally Coupled Scalar Field in FLRW Spacetime : A Symmetry Analysis, S. Dutta, M. Lakshmanan and S. Chakraborty, *Annals Phys.* 407, 1-14 (2019).
23. Nonlinear anti-directional couplers with gain and loss, A. Govindarajan, Boris A. Malomed and M. Lakshmanan, *Opt. Lett.* 44, 4650 (2019).
24. Multifaceted dynamics and gap solitons in PT -symmetric periodic structures, S. Vignesh Raja, A. Govindarajan, A. Mahalingam and M. Lakshmanan, *Phys.Rev. A* 100, 033838 (2019).
25. Nonlinear nonuniform PT -symmetric Bragg grating structures, S. Vignesh Raja, A. Govindarajan, A. Mahalingam and M. Lakshmanan, *Phys. Rev. A* 100, 053806 (2019).
26. Nondegenerate soliton solutions in certain coupled nonlinear Schrödinger systems, S. Stalin, R. Ramakrishnan and M. Lakshmanan, *Phys. Lett. A* 384 126201 (2020).
27. Tailoring inhomogeneous PT-symmetric fiber Bragg grating spectra, S. Vignesh Raja, A. Govindarajan, A. Mahalingam and M. Lakshmanan, *Phys. Rev. A* 101 033814(2020).



28. Self-trapped dynamics of a hollow Gaussian beam in metamaterials, A. K. Shafeeque Ali and M. Lakshmanan, *Phys. Lett. A*, 384, 126527(2020).
29. Realization of parallel logic elements and memory latch in a quasiperiodically driven simple nonlinear circuit, M. Sathish Aravindh, R. Gopal, A. Venkatesan and M. Lakshmanan, *Pramana* 94 78(2020).
30. Frequency enhancement and power tunability in tilted polarizer spin-torque nano oscillator, R. Arun, R. Gopal, V. K. Chandrasekar and M. Lakshmanan, *J. Appl. Phys.* 127, 153903 (2020).
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