

1. Name C. NAGARAJA KUMAR
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3. Date of Birth 14 June 1961
4. Nationality Indian
5. (a) Address for Correspondence Department of Physics, Panjab University,
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7. Category (UR/SC/ST/OBC/Minority) UR
8. Educational and additional Qualification onward)

S.No.	University/ institution	Course	Subject	Year	Grade/Class
1	S.S.C Board of Secondary Education, A.P.	X	Languages , maths, science, social studies	1976	First class
2	Intermediate (10+2) Board of Intermediate Education,A.P.	XII	Maths, physics chemistry	1978	First class
3	Osmania University, Hyderabad, A.P	B.Sc	Maths, Physics, Electronics	1981	First class
4	University of Hyderabad, Hyderabad,A.P	M.Sc	Physics	1983	First class
5	Institute of Physics, Bhubaneswar, Orissa	Dip. Advanced Physics	Physics	1984	First rank
6	IOP, Utkal University University, Bhubaneswar, Orissa	Ph.D	Physics	1990	-

9. Record of employment

S.No.	Post held and name of Ministries/ departments/ Institutions/ Organization	Pay Scale	Period	Nature of Job
1	Lecturer, Dept. of Physics, Panjab Univ. CHD	8,000-13,500	1999-2003	Teaching + Research + administrative work
2	Sr. Lecturer, Dept. of Physics, Panjab Univ. CHD	10,000-13,500	2003-2005	Teaching + Research + administrative work
3	Reader, Dept. of Physics, Panjab Univ. CHD	12,000-18,300	2005-2008	Teaching + Research + administrative work
4	Associate Professor, Dept. of Physics, Panjab Univ. CHD	37,400-67000 GP 9,000	2008-2011	Teaching + Research + administrative work
5	Professor , Dept. of Physics, Panjab Univ. CHD		2011-	Teaching + Research + administrative work

Post Doctoral Positions

S.No	Position	scale	period	Institution
1	CSIR (S.R.A) Pool officer	-	1993 - 1999	School of Physics University of Hyderabad, Hyderabad,A.P
2	Research Associate	-	1990 - 1993	CTS, IISc, Bangalore
3	Post Doc Fellow	-	1989 - 90	PRL, Ahmedabad

Administrative Activities

Managing Editor, PRAYAS, Student's Bimonthly IAPT Journal.

Member Research Promotion Cell (RPC) P.U., Chandigarh (2015-)

Coordinator, Physical Sciences, Choice Based Credit System (CBCS) PU (2016 -)

Courses teaching / taught at various times

- i. Quantum Mechanics M.Sc I Sem
- ii. Relativistic Quantum Mechanics & Quantum Field Theory M.Sc II Sem
- iii. Particle Physics M.Sc IV semester
- iv. Classical Electrodynamics M.Sc II Sem
- v. Electrodynamics and GTR M.Sc IV Sem
- vi. Mathematical Physics B.Sc VI Sem
- vii. Vibrations and waves B.Sc II Sem
- viii. Electricity & Magnetism B.Sc II Sem (Sub)
- ix. Physics Practical Lab B.Sc I, II, III, IV semester (sub)
- x. Computer Lab M.SC II Sem

M.Sc IV Semester Project students : 12

IISER Kolkata summer project students 06

M.Phil Students: Ms. Harleen Kaur

Research Students

Ph.D Pursuing -2 Submitted -0 Awarded -8

Pursuing -2

1. Ms. Ritu Pal (co-supervisor Dr. Kuldeep Kumar) - 2014
2. Ms. Harleen Kaur -2013

Degree Awarded - 8

1. Mr. Kanchan K De -2015- Study of Modulational Instability and Solitary wave solutions for class of Nonlinear Schrödinger Equations (Co-supervisor Dr. K.S. Bindra) Presently, working in a Govt. College, Saharanpur

2. Mr. Vivek Kumar Sharma -2015- Study of Solitary Wave solutions for Generalized Nonlinear Schrödinger Equation (Co-supervisor Prof. J.K. Goswamy). Presently, HP Govt College
3. Ms. ShallyLoomba – 2014 – Riccati Generalized Solitary Wave solutions of Nonlinear Equations.
4. Ms. Alka -2014 - Study of Nonlinear Evolutions Equations for a class of Non Linear Equations. Presently, presently working as Govt. college lecturer, Chandigarh
5. Ms. Rama Gupta -2014- Study of variants of Nonlinear Schrödinger Equation for Solitary Wave solutions. Presently, working at DAV University, Jalandhar
6. Mr. Amit Goyal -2014- Study of Nonlinear Evolution Equations with Variable coefficients for Solitary wave solutions (co-supervisor ,Dr. Sunita Srivatsava) Working as a lecturer at SD College, Chandigarh
7. Mr. J.S. Viridi – 2014-Systematic studies on Classical and Quantum Dynamical Systems. (Prof. S.C. Mishra, Kurukshetra Univ, co-supervisor) –working at University in Burla
8. Mr. Anil Kumar– 2005 – Applications of Isospectral Hamiltonians–working as lecturer at DAV College, Dasuya, Panjab

Academic Programs

1. TPSC – Chandigarh - coordinator since 2002
2. Research Promotion Cell (RPC) member 2015-.
3. Coordinator Physical Sciences, CBCS
4. UNICOS 2014 LOC member
5. QGBECS 2014- secretary
6. DST SERC School on Nonlinear Dynamics – 2014 Director
7. 3rd IAPT NSSP –LOC Coordinator
8. 2nd IAPT NSSP 2014 – coordinator
9. 1st IAPT NSSP 2013- Secretary
10. TQGS-2012 secretary
11. Two day meeting TFP 2011 organizers
12. DST SERC School on High Energy Physics – 2010 organizing secretary
13. LOC member for various conferences/meetings/seminar/symposia , for more details please refer to <http://physics.puchd.ac.in/eventsmajor.php>

Research Publications

67		
66	Ritu Pal, H.Kaur, T.S. Raju and C.N. Kumar , Periodic and rational solutions of variable-coefficient modified Korteweg de Vries equation, Nonlinear Dynamics , 89(1), (2017) 617-622	[3.464]
65	H. Kaur, R. Pal, T.S. Raju, C.N. Kumar , Butterfly-shaped and dromion-like optical waves in a tapered graded-index waveguide with variable group-velocity dispersion, Annals of Physics , 374 (2016) 366-374	[2.375]
64	R.Pal, A. Goyal, S. Loomba, T. S. Raju and C. N. Kumar , Compression of optical similaritons induced by cubic-quintic nonlinear media in a graded-index waveguide, J. Nonlinear Opt. Phys.Mat. 25 (2016) 1650033.	[0.64]
63	Thokala Soloman Raju, Tejaswi Ashok Hegde and C. N. Kumar , Unbreakable \mathcal{PT} symmetry of exact solitons in inhomogeneous nonlinear optical media, Journal of the Optical Society of America B 33 (2016) 35-40.	[2.185]
62	Amit Goyal, T. S. Raju, C.N. Kumar , P.K. Panigrahi, The effect of different background beams on the optical rogue waves generated in a graded-index waveguide, Optics Communications 364(2016)177-180	[1.438]
61	K.K. De, T. S. Raju, C.N. Kumar , and P.K. Panigrahi, Semirational and symbiotic self-similar rogue waves in a (2+1)-dimensional graded-index waveguide, Journal of Modern Optics 63 (2016) 1196-1204.	[1.163]
60	Shally Loomba, Rama Gupta and C. N. Kumar, Combined control of Akhmediev breather frequency and rogue wave amplitude: An analytical approach, Journal of Nonlinear Optical Physics & Materials , Vol. 24, No. 1 (2015) 1550007 (14 pages)	[0.64]
59	Shally Loomba, Ritu Pal, C.N.Kumar , Bright solitons of the nonautonomous cubic-quintic nonlinear Schrodinger equation with sign- reversal nonlinearity, Physical Review A 92, 033811 (2015).	[2.878]
58	Shally Loomba, Ritu Pal, C.N.Kumar , Controlling rogue wave triplets in Bose Einstein Condensate, J. Phys. B : At. Mol. Opt. Phys. 48, 105003 (2015).	[1.975]
57	Soloman Raju Thokala, Vivek K Sharma, Amit Goyal, Nagaraja K Choragudi , Prasanta Panigrahi Spatial, temporal, and spatio-temporal modulational instabilities in a planar dual-core waveguide , Optical Fiber Technology 24, 119-126 (2015)	[1.300]
56	K.K. De, A. Goyal, T. S. Raju, C.N. Kumar , and P.K. Panigrahi, Riccati parameterized self-similar waves in two-dimensional graded-index waveguide, Optics Communications 341, 15-21 (2015)	[1.438]

55	K. K. De, A. Goyal, C. N. Kumar , and A. K. Sarma, Few-cycle optical solitary waves in cascaded-quadratic-cubic-quintic nonlinear media, Communications in Nonlinear Science and Numerical Simulation , 20(3) (2015) 629.	[2.866]
54	K. K. De, H. Kaur, A. Goyal, C. N. Kumar , and T. S. Raju, Airy-Bessel modulated self-similar rogue waves in a nonlinear Schrödinger equation model, Journal of Modern Optics 62(2) (2015) 137–144.	[1.163]
53	Shally Loomba, Rama Gupta, Kanchan K De, C. N. Kumar and T.S.Raju, Controllable bright and dark rogue waves in inhomogeneous erbium doped fibers: Optical Fiber Technology 21 (2015) 20-25.	[1.300]
52	R. Gupta, C. N. Kumar , V. M. Vyas, and P. K. Panigrahi, Manipulating rogue wave triplet in optical waveguides through tapering Physics Letters A (2014) http://dx.doi.org/10.1016/j.physleta.2014.10.053	[1.632]
51	T.S. Raju, C Nagaraja Kumar , and Prasanta K Panigrahi, Compacton-Like Solutions for Modified KdV and Nonlinear Schrödinger Equation With External Sources, Pramana 83(2014) 273.	[0.649]
50	A. Goyal, V. K. Sharma, T. S. Raju and C. N. Kumar , Chirped double-kink and fractional-transform solitons in an optical gain medium with two-photon absorption, Journal of Modern Optics 61 (2014) 315.	[1.163]
49	S. Loomba, Harleen Kaur, Rama Gupta. C.N.Kumar and T.S. Raju, Controlling rogue waves in inhomogeneous Bose-Einstein condensates accepted for publication in Phys. Rev. E , 89 (2014) 052915.	[2.288]
48	S. Loomba, M. S. Manirajan, R. Gupta, H. Kaur, and C. N. Kumar , Nonlinear tunneling of optical similaritons in a tapered graded-index nonlinear waveguide, Optics Communications 324, (2014) 286.	[1.438]
47	Amit Goyal, Vivek Kumar Sharma, Thokala Soloman Raju, and C.N. Kumar Compression and propagation of dispersive and rectangular similaritons in asymmetric twin-core fibers, Journal of Modern Optics 61 (2014) 315.	[1.163]
46	S. Loomba, R. Gupta, C. N. Kumar , D. Milovic, Optical rogons for inhomogeneous nonlinear Schrödinger equation with inter modal dispersion, Applied Mathematics and Computation 225 (2013) 318.	[1.34]
45	R. Gupta, A. Goyal, T. S. Raju and C. N. Kumar , Symbiotic multimode spatial similaritons and rogons in inhomogeneously coupled optical fibers, Journal of Modern Optics 60 (2013) 1569.	[1.163]
44	Vivek Kumar Sharma, Amit Goyal, Thokala Soloman Raju and C.N. Kumar Periodic and solitary wave solutions for Ultrashort pulses in negative-index materials, Journal of Modern Optics 60 (2013) 836-840	[1.163]

43	P.K. Panigarhi, R. Gupta, A. Goyal and C.N. Kumar , Riccati generalization of self-similar solutions of nonautonomous Gross-Pitaevskii equation, Eur. Phys. J. Special Topics 222 (2013) 655663.	[1.796]
42	Rama Gupta and C.N. Kumar , Solitary wave solutions for nonlinear Schrodinger Equation with non-polynomial nonlinearity, Eur. Phys. J. Special Topics 222 (2013) 609613.	[1.796]
41	Amit Goyal, Rama Gupta, C.N. Kumar , Thokala Soloman Raju, Prasanta K. Panigrahi, Controlling optical similaritons in a graded-index nonlinear waveguide by tailoring of the tapering profile, Optics Communications 300 (2013) 236.	[1.438]
40	Thokala Soloman Raju, Prasanta K. Panigrahi, and C. N. Kumar , Compression and propagation of dispersive and rectangular similaritons in asymmetric twin-core fibers, J. Opt. Soc. Am. B 30 (2013) 934	[2.185]
39	R. Gupta, T.S. Raju, C.N. Kumar and P.K. Panigrahi, Modulational instability of copropagating light beams induced by cubic–quintic nonlinearity in nonlinear negative-index material, J. Opt. Soc. Am. B 29 (2012) 3360.	[2.185]
38	A. Goyal, R. Gupta, S. Loomba and C.N. Kumar , Riccati parameterized self-similar waves in tapered graded-index waveguides, Phys. Lett. A 376 (2012) 3454.	[1.632]
37	C.N. Kumar , R. Gupta, A. Goyal, S. Loomba, T.S. Raju and P.K. Panigrahi, Controlled giant rouge waves in nonlinear fiber optics, Phys. Rev. A 86 (2012) 025802.	[2.878]
36	R. Gupta, S. Loomba and C.N. Kumar , Class of nonlinearity control parameter for bright solitons of non-autonomous NLSE with trapping potential, IEEE J. Quantum Electronics 48 (2012) 847.	[1.879]
35	A. Goyal, Alka, T.S. Raju and C.N. Kumar , Lorentzian-type soliton solutions of ac-driven complex Ginzburg Landau equation, App. Math. Comp. 218 (2012) 11931.	[1.317]
34	J.S. Virdi, F. Chand, C.N. Kumar and S.C. Mishra, Complex dynamical invariants for two dimensional non-Hermitian Hamiltonian systems, Canadian Journal of Physics 90 (2012) 151.	[0.857]
33	J.S. Virdi, F. Chand, C.N. Kumar and S.C. Mishra, Complex dynamical invariants for two-dimensional complex potentials, Pramana- J. Phys. 79 (2012) 173.	[0.575]
32	Alka, A. Goyal, R. Gupta, C.N. Kumar and T.S. Raju, Chirped femto second solitons and double-kink solitons in the cubic-quintic nonlinear Schrodinger equation with self-steepening and self-frequency shift, Phys. Rev. A 84 (2011) 063830	[2.878]
31	Alka, A. Goyal and C.N. Kumar , Nonlinear dynamics of DNA-Riccati	[1.632]

	generalized solitary wave solutions, Phys. Lett. A 375 (2011) 480.	
30	A. Goyal, Alka, R. Gupta and C.N. Kumar , Solitary Wave Solutions for Burgers-Fisher type Equations with Variable Coefficients, World Academy of Science, Engineering and Technology 60 (2011) 1742.	
29	U. Roy, R. Atre, C. Sudheesh, C.N. Kumar and P.K. Panigrahi, Complex solitons in Bose-Einstein condensates with two- and three-body interactions, Phys. Rev.A 84 (2011) 063830	[1.875]
28	J.C. Cruz, C.N. Kumar , K.N. Pathak and J. Bosse, Density excitations of a harmonically trapped ideal gas, Pramana-J. Phys. 74 (2010) 83.	[0.575]
27	S. Srivastava, C. N. Kumar , and K. Tankeshwar, Dynamics of gelling liquids: algebraic relaxation, J. Phys.: Condens. Matter 21 (2009) 335106.	[2.546]
26	V. M. Vyas, P. Patel , P. K. Panigrahi, C. N. Kumar and W. Greiner, Chirped chiral solitons in the nonlinear Schrodinger equation with self-steepening and self-frequency shift, Phys. Rev. A. 78 (2008) 021803(R).	[2.878]
25	V. M. Vyas, T.S. Raju, C.N. Kumar and P.K.Panigrahi, Soliton Solutions of driven nonlinear Schrödinger equation, Journ. Phys. A. Math. Gen. 39 9151 – 9159 (2006)	
24	A. Kumar and C.N. Kumar , Calculation of Frank-Condon factors and r-centroids using isospectral Hamiltonian approach, Ind. Jour. Pure & Appl. Physics 43 738-742 (2005)	
23	T. S. Raju, C.N. Kumar and P.K. Panigrahi, On exact solitary wave solutions of Nonlinear Schrödinger equation with source, Journ. Phys. A. Math. Gen 38 L271 – L276 (2005)	
22	R. Atre, A.Kumar, C.N. Kumar and P.K. Panigrahi, Quantum information entropies of the eigenstates and the coherent state of the Poschl-Teller potential, Phys. Rev. A 69, 052107 (2004)	
21	Anil Kumar and C. N. Kumar , Constructing kink solutions using Isospectral Hamiltonian approach, Proc. National Conference on Nonlinear Systems and Dynamics, 141 (2003)	
20	S. Singh, S. Srivatsava, C.N. Kumar and K. Tankeshwar, Derivation of memory function from its equation of motion, Physics and Chemistry of Liquids 41, 567-574, (2003)	
19	S.Singh, C.N. Kumar , K. Tankeshwar, Sech ^v (bt) form for memory function, Mod. Phys. Lett. B 16 739-745 (2002)	
18	C.N. Kumar and P.K. Panigrahi, Soliton solutions of the σ model and the disordered chiral condensates, Solitons, Springer-Verlag CRM series , 163 (2000)	

17	C.N. Kumar, P. Durganandini, New Phase modulated solutions for a higher-order nonlinear Schrödinger equation, Pramana - Journal of Physics 53 271-277 (1999)	
16	E. Harikumar, C.N. Kumar and M. Siva Kumar, Chiral Solitons in a current coupled Schrödinger equation with self-interaction, , Phys. Rev. D 58 , 10770-1 (1998)	
15	B.Dey, A. Khare, C.N. Kumar, Stationary solitons of the fifth order KdV-type. Equations and their stabilization Phys. Lett, A223 449-452 (1996)	
14	N. Gurappa, C.N. Kumar and P.K. Panigrahi, New Exactly and Conditionally Exactly solvable N-Body Problems in One Dimension, Mod. Phys. Lett. A 11 , 1737 -1744 (1996)	
13	B.Dey, C.N. Kumar, New sets of Kind-Bearing Hamiltonians, Int. Journ. Mod. Phys. A 9 , 2699 -2705 (1994)	
12	A. Khare, C.N. Kumar, Landau Level Spectrum for Charged particle in a Class of Non-Uniform Magnetic Fields , Mod. Phys. Lett. A 8 , 523-529 (1993)	
11	B. Dey, C.N. Kumar, A.Sen, Chaos in Abelian and Non-abelian Higgs Systems, Int. Journ. Mod. Phys. A 8 , 1755 -1772 (1993)	
10	R. Chitra, C.N. Kumar and D.Sen, Supersymmetry in two Anyon problem, Modern. Phy. Lett. A 7 855 -863 (1992)	
9	L. Jacobs, A. Khare, C.N. Kumar and S.K.Paul, The interaction of Chern-Simons Vortices, Int. Journ. Mod. Phys 6 , 3441 3466 (1991)	
8	D.P. Jatkar, C.N. Kumar and A. Khare, A Quasi-Exactly solvable Problem without SU (2) Symmetry, Phys. Lett. A 142 , 200 -202 (1989)	
7	Chaos in gauge theories possessing vortices and monopole solutions C. N. Kumar, A. Khare, 1989 Journal of Physics A: Mathematical and General 22 (17) L849-L853, 1989	
6	C.N. Kumar, A. Khare, Q-ball solutions in 1+1 dimensions for a class of SO(2)-invariant potentials Journal of Physics A: Mathematical and General 20 (18), L1219-L1222 (1987)	
5	C. N. Kumar, Isospectral Hamiltonians: Generation of the soliton profile, Journal of Physics A: Mathematical and General 20 , 5397-5401 (1987)	
4	C.N. Kumar, A. Khare, Comparison of two gauge-nonequivalent Ansätze for charged vortices in SU(2) gauge theory with Chern-Simons term, Physical Review D 36 , 3253-3259 (1987)	
3	C.N. Kumar and A. Khare, Energy comparison of SU(2) vortex solutions in two	

	different Ansätze, Phy. Rev. Lett (c) 59 , 377 (1987)	
2	C.N. Kumar and B. K. Parida, Existence of quantum soliton for φ -like field theories in 1+1 dimensions Pramana Journal of Physics 28 , 87-93 (1987)	
1	C.N. Kumar and A. Khare, Charged vortex of finite energy in non-abelian gauge theories with Chern- Simons term, Phys. Lett. 178B , 395 – 399 (1986)	

Proceedings

1.	Vivek Kumar Sharma, Amit Goyal, C. N. Kumar, and J. Goswamy; Travelling wave solutions in negative index materials in the presence of external source AIP Conf. Proc. 1536 (2013) 717.	
2.	Kanchan Kumar De, Ritu Pal, C.N. Kumar , T. Soloman Raju, Modulational instability characteristics for few cycle pulse propagation in cascaded-quadratic-cubic-quintic nonlinear media, IEEE explore , International Conference on Microwave, Optical and Communication Engineering, December 18-20, 2015, IIT Bhubaneswar, India.	
3.	Ritu Pal, Shally Loomba, C. N. Kumar , Solitons in yttrium iron garnet thin films with localized gain, AIP Conf. Proc. 1728(2016)020588 .	