

## REFERENCES

- [1] Abdullaev, F. Kh., Gammal, A., Luz, H. L. F. da and Lauro Tomio, 2007: Dissipative dynamics of matter-wave solitons in a nonlinear optical lattice, *Physical Review A*, Vol.76, Iss.4, pp.043611-043621.
- [2] Abdullaev, F. Kh., et al., 2005: Dynamics of bright matter wave solitons in a Bose-Einstein Condensate, *International journal of Modern Physics B*, Vol. 19, Iss.22, pp. 3415-3473.
- [3] Ablowitz, M.J., Kaup, D.J. Newell, A.C. and Segur, H., 1973: Method for Solving the Sine-Gordon Equation, *Physical Review Letters*, Vol.30, Iss.25-18, pp. 1262-1264.
- [4] Ablowitz, M. J., Kaup, D J, Newell, A. C and Segur H, J., 1973b: Nonlinear-evolution eqatioion of physical sigificance, *Physical Review Letters*, Vol. 31, Iss. 2, pp.125-127
- [5] Ablowitz, M.J., Kaup, D .J., Newell, A.C and Segur, H., 1974: The Inverse Scattering transfrom-Fourier Analysis for nonlinear problems, *Studies in Applied Mathematics*, Vol.53, Iss.4, pp. 249-315.
- [6] Ablowitz, M.J., et al., 1983: On the inverse scattering transform for the Kadomtsev-Petviashvili equation, *Studies in Applied Mathematics*, Vol. 69, Iss.2, pp. 135-145.
- [7] Ablowitz, M.J. , Kaup, D.J., Newell, A.C and Segur, H.,1979: A note on Miura's transformation . *Journal of Mathematical Physics*, Vol. 20, Iss. 6, pp. 999-1003.
- [8] Ablowitz, M. J and Clarkson, P A., 2001: *Solitons, Nonlinear Evolution Equations and Inverse Scattering*, Cambridge University Press, Cambridge, UK.
- [9] Ablowitz, M.J, and Segur, H. ,1981: *Solitons and the Inverse Scattering Transform*, SIAM, Phildelphia.
- [10] Agrawal, G. P., 1995: *Nonlinear Fiber Optics*, Academic Press, San Diego, CA.
- [11] Anderson, P. W. and Rowell, J.M., 1963: Probable Observation of the Josephson superconducting tunneling effect, *Physical Review Letters*, Vol.10, Iss.230, pp.230-232.

- [12] Arevalo, E., 2008: Josephson junction arrays with negative group velocity: Propagation of envelope solitary waves, *Europhysics Letters*, Vol.83, Iss.1, pp.10004.
- [13] Arnol'd, V.I., 1989: *Mathematical Methods of Classical Mechanics*. Springer, New-York.
- [14] Au-Yeung, T.C., Au, C and Fung P.C.W., 1984: One-soliton Korteweg—de Vries solutions with nonzero vacuum parameters obtainable from the generalized inverse scattering method, *Physical Review*, Vol. 29, Iss.5, pp.2370-2374.
- [15] Au-Yeung, T.C, Au, C and Fung, P.C. W., 1984: Modified KdV solitons with non-zero vacuum parameter obtainable from the ZS-AKNS inverse method, *Journal of Physics A*, Vol. 17, Iss.7, pp.1425-1436.
- [16] Bardeen, J., Cooper, L. N. and Schrieffer J. R., 1957: Theory of Superconductivity, *Physical Review*, Vol.108, Iss. 5, pp.1175
- [17] Becker, R.J., 1987: Lagrangian/Hamiltonian formalism for description of Navier-Stokes fluids, *Physical Review*, Vol. 58, Iss.14, pp. 1419.
- [18] Bekir, A., Guner, O., Ayhan, B., 2015: Exact solutions of some systems of fractional differential-difference equations, *Mathematical Methods in the Applied Sciences*. Vol. **38**, Iss.17, pp. 3807–3817.
- [19] Belmonte-Beitia, J. and Cuevas, J., 2011: Existence of dark solitons in a class of stationary nonlinear Schrodinger equations with periodically modulated nonlinearity and periodic asymptotics, *Journal of Mathematical Physics*, Vol.52, Iss.3, pp.032702-032711.
- [20] Belmonte-Beitia, J. and Cuevas, J., 2013: Existence of bounds for dark solitons in a class of nonlinear Schrödinger equations: Explicit upper and lower bounds, *Mathematical Methods in the Applied Sciences*, Vol.36, Iss.8, pp. 869–992.
- [21] Bowman, Frank , 1958: *Introduction to Bessel Functions* , Dover: New York, ISBN 0-486-60462-4.
- [22] Boyd, R. W., 1992: *Nonlinear Optics*. Academic Press, Boston.
- [23] Boyer, F., Lapuerta, C., Minjeaud, B., Piarand M. Quintard, 2010: Cahn-Hilliard/Navier-Stokes model for the simulation of three-phase flows. *Transport in Porous Media*, Vol. 82, Iss.3, pp. 463—483

- [24] Braun, O.M., Kivshar, Y.S., 2004: *The Frenkel-Kontorova model, Concepts, methods and applications*, Springer, Berlin.
- [25] Bui Doan Khanh, 1996: A numerical resolution of the Gelfand-Levitan equation, *Journal of Computational and Applied Mathematics*, Vol.72, Iss. 2, pp. 235–244.
- [26] Bulloch, R.K. and Caudrey, P. J (Eds), 1980: *Solitons.Series Topics in Current Physics*, Berlin Springer, vol.17
- [27] Burger, S., Bongs, K., Dettmer, S., Ertmer, W., Sengstock, K., Sanpera, AShlyapnikov, G.V and Lewnstein, M.,1999: Dark Solitons in Bose Einstein Condensates, *Physical Review Letters*, Vol.83, Iss.25-20, pp. 5198-5201.
- [28] Burger, S., et.al, 2002: Generation and interaction of solitons in Bose-Einstein condensates, *Physical Review A*, Vol. 65, Iss.4, pp. 043611
- [29] Campbell D. K., Flach S and Kivshar, Yu S., 2004: Localizing Energy Through Nonlinearity and Discreteness, *Physics Today*, Vol. 57, Iss.1, pp. 43–49.
- [30] Carretero, Gonzalez R., Kevrekidis, P.G, Malomed B.A, and Frantzeskakis,D.J. 2005: Three dimensional Nonlinear Lattices: From Oblique Vortices and Octupoles to Discrete Diamonds and Vortex Cubes, *Physical Review Letters*, Vol. 94, Iss.27, pp. 203901.
- [31] Carretero, Gonzalez, R., Kevrekidis, P.G., Malomed B.A and Frantzeskakis, D.J., 2004: Three-dimensional solitary waves and vortices in a discrete nonlinear Schrödinger lattice, *Physical Review Letters*, Vol. 93, Iss.27, pp. 080403.
- [32] Carretero-González R, Frantzeskakis, D. J and Kevrekidis P. G., 2008: Nonlinear Waves in Bose–Einstein Condensates, Physical Relevance and Mathematical Techniques, *Nonlinearity*, Vol.21, Iss.7, pp.R139.
- [33] Chen, H. H. and Lee, Y. C., 1979: Internal Wave Solitons of Fluids with Finite Depth, *Physical Review Letters*, Vol. 43, Iss.4, pp.265-266.
- [34] Chuntao, Yan. , 1993: Regularized long wave equation and inverse scattering transform, *Journal of Mathematical Physics*, Vol.34, Iss.6, pp.2618.

- [35] Denschlag, J. et al, 2000: Generating Solitons by phase engineering of a Bose-Einstein condensate, *Science*, Vol. 287, Iss.5420, pp.97-101.
- [36] Denschlag, J. et al., 2002: A Bose-Einstein condensate in an optical lattice, *Journal of Physics B: Atomic, Molecular and Optical Physics*, Vol. 35, Iss.14, pp. 3095.
- [37] Denzler, J., 1993: Nonpersistence of breather families for the perturbed sine Gordon equation, *Communications in Mathematical Physics*, Vol. 158, Iss.2, pp. 397–430.
- [38] Diederich, Hinrichsen and Anthony J. Pritchard., 2005: *Mathematical Systems Theory I - Modelling, State Space Analysis, Stability and Robustness*, Springer, Verlag.
- [39] Dodd, R.K. Eilbeck, J.C. Gibbon, J.D, Morris, H.C., 1984: *Solitons and Nonlinear Wave Equations*, Academic Press Inc.(London) Ltd.
- [40] Dodd, R.K. and Fordy , A.P., 1982: On the interability structures of coupled KdV equation, *Physics letters A*, Vol.89, Iss.4, pp.168-170
- [41] Doderer, T., et.al, 1993: Low-temperature scanning electron microscopy studies of superconducting thin films and Josephson junctions, *Physica B: Condensed Matter*, Vol. 169, Iss.1-4 , pp.415-421.
- [42] Drazin, P. G, 1983: *Solitons*, London Mathematical Society Lecture Note Series **85**, Cambridge: Cambridge University Press, pp. viii+136, ISBN 0-521-27422-2, MR 0716135. Available at:[http://en.wikipedia.org/wiki/Gustav de Vries](http://en.wikipedia.org/wiki/Gustav_de_Vries).
- [43] Englefield, M. J., 2009: *Solution of Schrödinger equation by Laplace transform*, Vol. 8, Iss. 3
- [44] Eugen, Merzbacher., 1998: *Quantum Mechanics*, University of North Carolina at Chapel Hill.
- [45] Fedichev, P.O, Kagan, Yu., Shlyapnikov, G.V and Walraven, J.T., 1996: Influence of Nearly Resonant Light on the Scattering Length in Low-Temperature Atomic Gases, *Physical Review Letters*, Vol.77, Iss.14-30, pp.2913–2916.
- [46] Fedichev, P. O and Shlyapnikov, G. V.2001: Critical velocity in cylindrical Bose-Einstein condensates, *Physical Review A*, Vol.63, Iss. 4, pp. 045601

- [47] Fermi E, Pasta, J R and Ulam, S., 1955: Studies of Nonlinear Problems. I. *Report LA-1940.* , Los Alamos Scientific laboratory of the University of California.  
[<https://www.osti.gov/accomplishments/documents/fullText/ACC0041.pdf>]
- [48] Feynman, R.P., Leighton, R.B. and Sands, M., 2013: *The Feynman Lectures on Physics, Vol III*, California Institute of Technology.
- [49] Flach, S and Gorbach, A.V., 2008: Discrete Breathers. Advances in Theory and Applications. *Physics Reports*, Vol.467, Iss.1-3, pp. 1–116.
- [50] Forristall, G. Z., 1978: On the statistical distribution of wave heights in a storm. *Journal of Geophysical research*, Vol.83, Iss. C5, pp.2353–2358.
- [51] Galdi, G.P. *An Introduction to the Mathematical Theory of the Navier-Stokes Equations* .Second edition, Springer New York, Dordrecht Heidelberg, London.
- [52] Gardner C. D, Green J .M, Kruskal, M. D and Miura, R. M., 1974: Korteweg–de Vries Equation and Generalizations. VI. Methods for Exact Solution. *Communications on Pure and Applied Mathematics*, Vol. 27, Iss.1, pp. 97–133.
- [53] Gardner, C. S, 1971: The Korteweg-de Vries Equation and Generalizations, IV. The Korteweg-de Vries Equation as a Hamiltonian System. *Journal of Mathematical Physics*, Vol. 12, Iss.8, pp.1548- 155.
- [54] Gardner, C.S, Greene, J.M. Kruskal, M.D and R.M. Miura, 1974: Korteweg–devries equation and generalizations. VI. Methods for exact Solution. *Communications on Pure and Applied Mathematics*, Vol. 27, Iss.1, pp. 97–133
- [55] Gardner, C S, Green, J. M., Kruskal, M D and Miura, R M,1967: Method for Solving the Korteweg–de Vries Equation, *Physical Review Letters*, Vol.19, Iss.19, pp.1095–1097.
- [56] Golam Ali, S.K and Talukdar, B., 2009: Coupled matter-wave solitons in optical lattices, *Annals of Physics*, Vol. 324, Iss.6, pp. 1194-1210.
- [57] Golam Ali, SK and Talukdar, B., 2008: Matter-wave bright solitons: Internal atomic recombination and external feeding, *The European Physical Journal D*, Vol. 46, Iss.2, pp.315–322

- [58] Hamblin, P.F.,1982: On the free surface oscillations of Lake Ontario, *Limnology and Oceanogry*, Vol. 27, Iss.6, pp.1039-1049.
- [59] Haus, H. and Wong, W. S., 1996: Soliton in optical communications, *Reviews of Modern Physics*, Vol. 68, Iss.2, pp.432–444.
- [60] Haus, H. A., 1993: Optical fiber solitons: Their properties & uses, *Proc. IEEE*, Vol. 81, Iss.7, pp. 970–983.
- [61] Hidetsugu, Sakaguchi and Malomed, Boris A., 2005: Matter-wave Solitons in nonlinear optical lattices, *Physical Review E*, Vol.72, Iss.4, pp.046610 .
- [62] Holst, Thornsten and Bindslev Hansen, 1991: Spatial dependence of plasma oscillations in Josephson tunnel junctions, *Journal of Physical Review B*, Vol.44, Iss.5, pp.2238-2245
- [63] Huepe, C., Tuckerman, L.S, Metens, S. and Brachet, M.E. , 2003:Stability and decay rates of nonisotropic attractive Bose- Einstein condensates, *Physical review A*, Vol. 68, Iss.2, pp. 023609.
- [64] Johansson, M. and Aubry Growth S. , 2000: Decay of nonlinear Schrodinger breathers interacting with internal modes or standing wave phonons, *Physical Review E*, Vol. 61, Iss.5, May, pp.5864.
- [65] Jordan, D. W., Smith, P., 2007: *Nonlinear Ordinary Differential Equations* (fourth ed.), Oxford University Press, ISBN 978-0-19-920824-1.
- [66] Josephson, B. D., 1962: Possible new effects in Superconducting tunneling , *Physics Letters*, Vol.1, Iss.7, pp.251-253.
- [67] Josephson, B. D., 1965: Supercurrents through barriers, *Advances in Physics*, Vol. 14, Iss.56, pp.419-451.
- [68] Julio, Sanchez-Curto., Pedro Chamotrrro-Posada and Graham S. McDonald, 2010: Dark Solitons at nonlinear interfaces, *Optics Letters*, Vol. 35, Iss.9, pp. 1347-1349.
- [69] Julio Sanchez-Curto., Pedro Chamotrrro-Posada and Graham S. McDonald, 2010: Dark Solitons at nonlinear interfaces, *Optics Letters*, Vol. 35, Iss.9, pp. 1347-1349.
- [70] Kac, M. and Helfand, 1963: Study of Several Lattice Systems with Long- Range Forces E, *Journal of Mathematical Physics*, Vol.4, Iss.8, pp.1078.

- [71] Karigiannis , Spiro, 1998: Minor thesis , *The inverse scattering transform and Inerrability of nonlinear evolution Equations*.  
<https://www.math.uwaterloo.ca/~karigian/papers/ist.pdf>
- [72] Kath, W.L and Smyth, N.F ., 1995: Soliton evolution and radiation loss for the nonlinear Schrodinger equation, *Physical Review E*, Vol. 51, Iss.2, pp.1484-1492.
- [73] Kaup, D.J. and El-sayed Osman, 1986: Motion of damped sine-Gordon kinks in the presence of thermal fluctuations, *Physical Review B*, Vol. 33, Iss. 3, pp. 1762.
- [74] Kaup, D.J.,1983: Thermal corrections to over damped soliton motion, *Physical Review B* Vol. 27, Iss.11, pp.6787
- [75] Kevorkian, J. and Cole, J. D., 1996: *Multiple Scale and Singular Perturbation Methods*, Springer-Verlag, New York.
- [76] Kevrekidis, P.G., Frantzeskakis, D.J., Carretero-González, R., Malomed, B.A. and Bishop, A.R., 2005: Discrete Solitons and Vortices on Anisotropic Lattices, *Physical Review E*, Vol. 72, Iss.4, pp.046613.
- [77] Kivshar, Yu S and Malomed, B A., 1989: Dynamics of Solitons in Nearly Integrable Systems. *Reviews of Modern Physics*, Vol.61, Iss.4, pp. 763–915.
- [78] Klaus, Kirsten and David, J. Toms, 1996: Bose-Einstein condensation of atomic gases in a general harmonic-oscillator confining potential trap, *Physical Review A*, Vol. 54, Iss.5, pp.4188-4206.
- [79] Kobayakov, A., Darmanyán, S., Pertsch, T. and Lederer, F., 1999: Stable discrete domain walls and quasirectangular solitons in quadratically nonlinear waveguide arrays, *JOSAB*, Vol.16, Iss.10, pp.1737-1742.
- [80] Krumhansl, J. A. and Schrieffer J. R., 1975: Dynamics and Statistical Mechanics of one Dimensional Model Hamiltonian for Structural Phase Transitions, *Physical Review B*, Vol.11, Iss.9, pp.3535-3545.
- [81] Lax, P.D, 1968: Integrals of nonlinear equations of evolution and solitary waves, *Communication on Pure and Applied Mathematics*, Vol. 21, Iss. 5, pp.467-490
- [82] Lazard, D., 2009: Thirty years of Polynomial System Solving, and now?, *Journal of Symbolic Computation*, Vol. 44, Iss.3, pp. 222–231.

- [83] Lebeau, Gilles ., João-PauloDias, Mário Figueira , 2010: Existence of bound states for the coupled Schrodinger-KdV system with cubicnonlinearity, *Comptes Rendus Mathematique*, Vol. 348, Iss.19–20, pp. 1079-1082.
- [84] Likharev, K.K. et.al., 1993: Single Electron tunnel junction array an electrostatic analog of the Josephson transmission line, *IEEE Transactions on Magnetics*, Vol. 25, Iss.2, pp.1436-1439.
- [85] Lomdahl, P. S., Sorensen, O.H., and Christiansen, P.L. Soliton Excitations in Josephson Tunnel junctions, *Physical Review B*, Vol. 25, Iss.9, pp.5737-5748.
- [86] Luke, G. M. et al., 1998: Time-reversal symmetry-breaking superconductivity in  $\text{Sr}_2\text{RuO}_4$ , *Nature*, Vol. 394, Iss.3, pp. 558–561.
- [87] Luz, H. L. F. da., Abdullaev, F. Kh., Gammal, A., Salerno, M., and Lauro Tomio, 2010: Matter-wave two-dimensional solitons in crossed linear and nonlinear optical lattices, *Physical Review A*, Vol. 82, Iss.4, pp.043618-1-043618-8.
- [88] Malomed, B.A and Kevrekidis, P.G., 2001: Discrete vortex solitons, *Physical review E*, Vol. 64, Iss.2, pp.026601.
- [89] Mason A. Porter, 2009: *Experimental Results Related to DNLS Equations*, Parts of the Springer Tracts in Modern Physics book series, Vol. 232, pp. 175-189.
- [90] Michael, Albiez, Rudolf Gati, Jonas Folling, Stefan Hunsmann, Matteo Cristiani, and Markus K. Oberthaler., 2005: Direct Observation of Tunneling and Nonlinear Self-Trapping in a Single Bosonic Josephson Junction, *Physical Review Letters*, Vol.95, Iss.1, pp. 010402-1-010402-4.
- [91] Michel, Remoissenet, 1994: *Waves Called Solitons: Concepts and Experiments*, Springer –Verlag, Berlin Heidelberg.
- [92] Miura, R.M., 1968: Korteweg-deVries Equation and Generalizations. I. A RemarkableExplicit Non-linear Transformation, *Journal of Mathematical Physics*, Vol.9, Iss.8, pp.1202-1204.
- [93] Miura, R. M, 1976: The Korteweg–de Vries Equation, A Survey of Results *SIAM Review* Vol. 18, Iss. 3, pp. 412–459.
- [94] Miura, R. M., 1968: Korteweg de Vries Equation and Generalizations I. A Remarkable Explicit Nonlinear Transformation, *Journal of Mathematical Physics*, Vol.9, Iss.8, pp.1202–1204.



- [95] Miura., Robert, M., Gardner, Clifford S., Kruskal, Martin D., 1968: Korteweg–de Vries equation and generalizations. II. Existence of conservation laws and constants of motion, *Journal of Mathematical Physics*, Vol. 9, Iss.8, pp.1204–1209.
- [96] Norman, J. Zabusky, 2005: Fermi–Pasta–Ulam, solitons and the fabric of nonlinear and computational science: History, synergetics, and visiometrics, *Chaos* 15, Vol.15, Iss.1.
- [97] Osborne, A.R and Bergamasco, L.,1986: The solitons of Zabusky and Kruskal revisited: Perspective in terms of the periodic spectral transform, *Physica D: Nonlinear Phenomena*, Vol.18, Iss.1–3, pp. 26–46.
- [98] Park, H.S and Liu, W.K., 2004: *An Introduction and Tutorial on Multiple Scale Analysis in Solids, Computer Methods in Applied Mechanics and Engineering*, Vol.193, Iss.17-20, pp.1733.1772.
- [99] Pelinovsky, D. E, Kevrekidis, P.G and Frantzeskakis, D.J., 2005: Stability of discrete solitons in nonlinear Schrödinger lattices, *Physica D: Nonlinear Phenomena*, Vol.212, Iss.1, pp.1-9.
- [100] Pelinovsky, D.E, Kevrekidis, P.G, Frantzeskakis, D.J.,1996: Nonlinear theory of oscillating, decaying, and collapsing solitons in the generalized nonlinear Schrödinger equation, *Physical Review E*, Vol. 53, Iss.2, pp.1940.
- [101] Pitois, S., Millot, G. and Wabnitz, S., 1998: Nonlinear polarization dynamics of solitons with counter propagating laser beams, *Physical Review Letters*, Vol.81, Iss.7, pp.1409-1412.
- [102] Pitois, S., Millot, G. and Wabnitz, S., 1998: Polarization domain wall solitons with counter propagating laser beams, *Physical Review Letters*, Vol. 81, Iss.7, pp.1409-1412.
- [103] Porter M A, Zabusky, N J, Hu, B and Campbell, D K ., 2009: Fermi, Pasta, Ulam and the Birth of Experimental Mathematics, *American Scientist* , Vol.97, Iss.6, pp. 214–222.
- [104] Porter, Mason A., 2009: Experimental Results Related to DNLS Equations, *Springer Tracts in Modern Physics*, Vol. 232, pp. 175-189.
- [105] Rajaraman, R., 1989: *Solitons and Instantons: An Introduction to Solitons and Instantons in Quantum Field Theory*. North-Holland Personal Library.

- [106] Remoissenet, Michel: 1996: *Waves Called Solitons: Concepts and Experiments*, Springer, Verlag, Berlin Heidelberg, pp. 259.
- [107] Rosenau, P., 2005: What is a Compacton?, *Notices of the American Mathematical Society*, Vol. 52, Iss.7, pp. 738–739.
- [108] Russell, J. Scott, 1845: Report on Waves. Report of the fourteenth meeting of the British Association for the Advancement of Science, York, September 1844 (PDF). London: John Murray, Plates XLVII–LVII., pp.311–390.
- [109] Russell, J S, 1844: Report on Waves, *Report of the 14th Meeting of the British Association for the Advancement of Science*, pp. 311–390.
- [110] Sakaguchi, Hidetsugu and Malomed, Boris A., 2016: Matter-wave soliton interferometer based on a nonlinear splitter, *New Journal of Physics*, Vol. 18, Iss.2, pp. 025020.
- [111] Sakaguchi, Hidetsugu and Malomed, Boris A., 2005: Matter-wave solitons in nonlinear Optical lattices, *Physical Review E*, Vol.72, Iss.4, pp.046610
- [112] Scalapino, D.J., Sears, M. and Ferrel, R. S., 1972: Statistical Mechanics of One-Dimensional Ginzburg-Landau Fields, *Phys. Rev. B*, Vol. 6, Iss. 9, pp. 3409.
- [113] Scott, A .C., 2005: *Encyclopedia of Nonlinear Science*, Routledge, Taylor & Francis Group, New York, NY.
- [114] Shalashilin, D.V and Child, M.S., 2000: Time dependent quantum propagation in phase space, *The Journal of Chemical Physics*, Vol. 113, Iss.22, pp.10028.
- [115] Sias, C., Lignier, H., Singh, Y. P., Zenesini, A., Ciampini, D., Morsch, O and E. Arimondo., 2008: Observation of Photon-Assisted Tunneling in Optical Lattices, *Physical Review Letters*, Vol.100, Iss.4, pp.040404 -040408.
- [116] Sias, C., Zenesini, A., Lignier, H., Wimberger, S., Ciampini, D., Morsch, O., 2008: Resonantly enhanced tunneling of Bose-Einstein condensates in periodic potentials, *Physical Review Letters*, Vol. 98, Iss.12, pp.120403.
- [117] Steven W. Smith, 1997: *The Scientist and Engineer's Guide to Digital Signal Processing*, 1<sup>st</sup> edition, ISBN-10: 0966017633.
- [118] Stiassnie, M.,1984: Note on the modified nonlinear Schroedinger equation for deep water waves, *Wave Motion*, Vol.6, Iss.4, pp. 431–433.

- [119] Su, W.P, Schrieffer, J.R and Heeger A.J., 1980: Soliton excitations in polyacetylene, *Physical Review B*, Vol. 22, Iss.4, 2099.
- [120] Susanto, H. , Daraminto, S. A., Van Gils, 2009: Static and Dynamic properties of Fluxons in a zig-zag  $0-\pi$  Josephson junctions, *Physics Letters A*, Vol.361, Iss.3, pp. 270-276.
- [121] Swartzlander Jr., G. A. and Law, C. T., 1992: Optical vortex solitons observed in Kerr nonlinear media, *Physical Review Letters*, Vol. 69, Iss.17, pp. 2503–2506.
- [122] Tang, Yi., Yan, Jia-ren, Chen, Zhen-hua., 1997: Direct Approach for Kink Solution of  $\phi - 4$  Equation Under Perturbation, *Chinese Physics Letters*, Vol.14, Number 11, pp.845.
- [123] Thiab, R. Aha, T and Ablowitz, Mark J., 1984: Analytical and Numerical Aspects of Certain Nonlinear Evolution Equations, *Journal of Computational Physics*, Vol. 55, Iss.2, pp.203-230.
- [124] Toda, M., 1967: Vibration of a Chain with Nonlinear Interaction, *Journal of the Physical Society of Japan*, Vol. 22, Number 2, pp. 431–436.
- [125] Tong, Bin., Jia, Man and Lou Sen-Yue, 2006: A New Coupled KdV Equation, *Communications in Theoretical Physics*, Vol.45, Number.6, pp. 965-968.
- [126] Tracy, E. R., Larson, J. W., Osborne, A. R and Bergamasco, L., 1988: On the Nonlinear Schroedinger limit of the Korteweg-deVries equation, *Physica D*, Vol. 32, Iss.1, pp. 83–106.
- [127] Tuyen The Nguyen, 1994: *Inverse scattering method via the Korteweg-De Vries equation and its applications* , University of California, Santa Cruz, 84 pages.
- [128] Wang A. et.al.,1979: Molecular Structure of a left-handed double helical DNA Fragment at atomic resolution, *Nature*, 282, pp. 680-686.
- [129] Weissert, T. P., 1997: *The Genesis of Simulation in Dynamics: Pursuing the Fermi–Pasta–Ulam Problem*, Springer-Verlag, Berlin, Germany.
- [130] Whitham, G. B., 1974: *Linear and Nonlinear Waves*, Wiley-Interscience, New York NY.

- [131] Zabusky, N.J. and Kruskal, M.D., 1965: Interaction of Solitons in a collisionless plasma and the recurrence of initial states, *Physical Review Letters*, Vol. 15, Iss.6, pp. 240-243.
- [132] Zabusky, N.J., 1984: Computational Synergetics, *Physics Today*, Vol.37, Iss.7, pp. 36–46.
- [133] Zakharov, V.E. and Shabat, A.B., 1972: Exact Theory of Two-Dimensional Self-Focusing and One-Dimensional Self-Modulation of Waves in Nonlinear Media, *Soviet Physics, JETP*, Vol.34, Number 1, pp. 62-69.
- [134] Zakharov, V.E. and Kuznetsov, E.A., 1986: Multiscale expansion in the theory of systems integrable by the inverse scattering transform, *Physica D*, Vol.18, Iss.1-3, pp.455-463.
- [135] Ziv Hermon, Eshel Ben-Jacob and Gerd Schon, 1996: Charge Solitons in one Dimensional arrays of serially coupled Josephson junctions, *Physical Review B*, Vol.54, Iss.2, pp. 1234.