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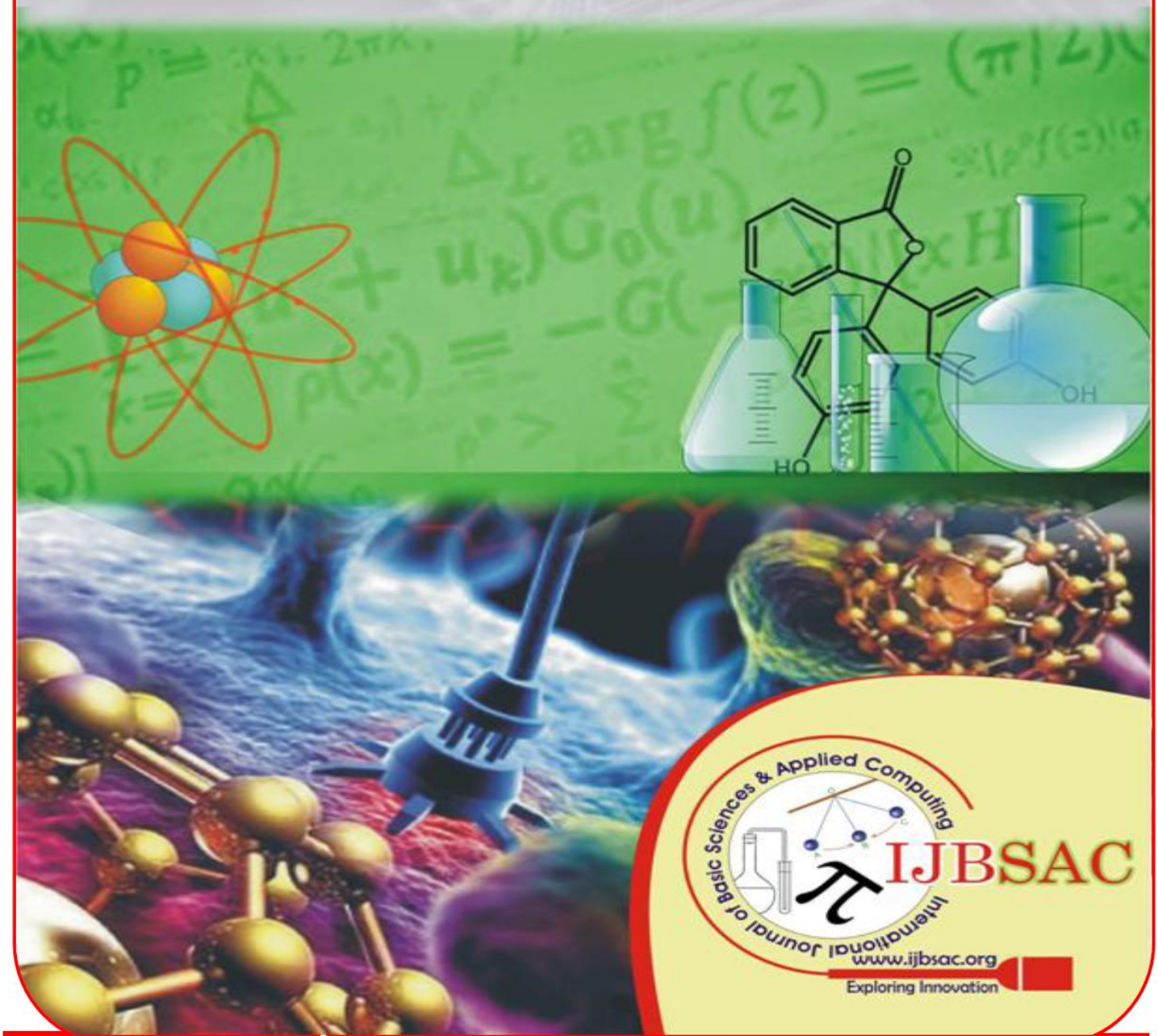

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	Authors:	**Md. Minhaj Ahmed**
	Paper Title:	**Physics of Optics and Time**

Abstract: A brief proposition on the nature of light waves and how it affects the measurement of observers. Imagine a stationary observer who is at a distance D, away from a stationary source of light that emits a light signal at a constant period t, and let's assume that both parties are provided with a clock. If the source of light emits a light signal that travels away to the observer for a period of time t, both parties will agree that there is no change in the wavelength of the light wave emitted. More also, both parties will agree that their respective clocks records same time t, for the period of the light signal. Now consider a similar instance where the source of light travels some meters during the same time t, as the period of the emitted light wave, the wavelength of the light wave recorded by a device attached to the source of the light will be different from the wavelength recorded by the stationary observer. Also, the clock attached to the moving source of light will disagree with the clock of the stationary observer over the period t, of motion of emitted light wave. The conclusion from the above instance is that: 1. There is No change in the measurement of the clocks of both parties when there is No change in the property of the light wave emitted.2. There is a change in the measurement of the clocks of both parties when there is a change in the property of the light wave emitted. It is clear that the motion of the light source creates a change in the physical property of the light wave. As I proceed in this article, I will show that the simple act of creating a change in the physical properties (wavelength) of the waves, automatically creates a difference in the measurements of observers of different frames. This change in the physical property of the light waves can make physical measurements of different frames to appear relative in nature depending on the magnitude of the disturbance produced in the waves of light.

Keywords: Optics, Law of Reflection, Refraction, Superposition, Diffraction, Dispersion, Polarization

References:

1. Sir Thomas Little Heath (1981). A history of Greek mathematics. Volume II: From Aristarchus to Diophantus. ISBN 978-0-486-24074-9.
2. Farin, Gerald; Hansford, Dianne (2005). Practical linear algebra: a geometry toolbox. A K Peters. pp. 191–192. ISBN 978-1-56881-234-2.
3. Comninos, Peter (2006). Mathematical and computer programming techniques for computer graphics. Springer. p. 361. ISBN 978-1-85233-902-9.
4. Scott M. Juds (1988). Photoelectric sensors and controls: selection and application. CRC Press. p. 29. ISBN 978-0-8247-7886-6.
5. P.Hanrahan and W.Krueger (1993), Reflection from layered surfaces due to subsurface scattering, in SIGGRAPH '93 Proceedings, J. T. Kajiya, Ed., vol. 27, pp. 165–174.
6. H.W.Jensen et al. (2001), A practical model for subsurface light transport, in 'Proceedings of ACM SIGGRAPH 2001', pp. 511–518
7. Only primary and secondary rays are represented in the figure.
8. Or, if the object is thin, it can exit from the opposite surface, giving diffuse transmitted light.
9. Paul Kubelka, Franz Munk (1931), Ein Beitrag zur Optik der Farbanstriche, Zeits. f. Techn. Physik, 12, 593–601, see The Kubelka-Munk Theory of Reflectance
10. Kerker, M. (1969). "The Scattering of Light". New York: Academic.
11. Mandelstam, L.I. (1926). "Light Scattering by Inhomogeneous Media". Zh. Russ. Fiz-Khim. Ova. 58: 381.
12. Knight, Randall D. (2002). Five Easy Lessons: Strategies for successful physics teaching. Addison Wesley. pp. 276–277
13. RCA Electro-Optics Handbook, p.18 ff
14. Modern Optical Engineering, Warren J. Smith, McGraw-Hill, p.228, 256
15. Pedrotti & Pedrotti (1993). Introduction to Optics. Prentice Hall. ISBN 0135015456.
16. Lambert, J H (1760). Photometria, sive de Mensura et gradibus luminis, colorum et umbrae.
17. Incropera and DeWitt, Fundamentals of Heat and Mass Transfer, 5th ed., p.710.
18. "The Law of Reflection". The Physics Classroom Tutorial. Retrieved 2008-03-31.
19. Sir Thomas Little Heath (1981). A history of Greek mathematics. Volume II: From Aristarchus to Diophantus. ISBN 978-0-486-24074-9.
20. Farin, Gerald; Hansford, Dianne (2005). Practical linear algebra: a geometry toolbox. A K Peters. pp. 191–192. ISBN 978-1-56881-234-2.
21. Comninos, Peter (2006). Mathematical and computer programming techniques for computer graphics. Springer. p. 361. ISBN 978-1-85233-902-9.
22. https://en.wikipedia.org/wiki
23. "Retroreflective Labels". MidcomData. Retrieved 2014-07-16.
24. "Optical Fiber". http://www.thefoa.org/. The Fiber Optic Association, Inc. Retrieved 17 April 2015.
25. Senior, John M.; Jamro, M. Yousif (2009). Optical fiber communications: principles and practice. Pearson Education. Retrieved 17 April 2015.
26. Optical fiber communications: principles and practice pp 7-9
27. Flores-Arias M T, Bao C, Castelo A, Perez M V, Gomez-Reino C, (2006). Optics Communications 266, 490-494
28. Hecht, Eugene (1987). Optics, 2nd ed., Addison Wesley, ISBN 0-201-11609-X.
29. Hensler J R, "Method of Producing a Refractive Index Gradient in Glass," U.S. Patent 3,873,408 (25 Mar. 1975).
30. Keck D B and Olshansky R, "Optical Waveguide Having Optimal Index Gradient," U.S. Patent 3,904,268 (9 Sept. 1975).
31. Luneberg, R K (1964). Mathematical Theory of Optics. Univ. of California Press, Berkeley.
32. Moore, D T (1980). Applied Optics. 19, 1035–1038
33. Pyotr Ya. Ufimtsev (9 February 2007). Fundamentals of the Physical Theory of Diffraction. John Wiley & Sons. ISBN 978-0-470-10900-7.
34. Umul, Y. Z. (October 2004). "Modified theory of physical optics". Optics Express 12 (20): 4959–4972. Bibcode:2004OExpr..12.4959U. doi:10.1364/OPEX.12.004959. PMID 19484050.
35. Quantum Mechanics, Kramers, H.A. publisher Dover, 1957, p. 62 ISBN 978-0-486-66772-0

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36. RS Longhurst, Geometrical and Physical Optics, 1968, Longmans, London.
37. Cajori, Florian "A History of Physics in its Elementary Branches, including the evolution of physical laboratories." MacMillan Company, New York 1899
38. John M. Cowley (1975) Diffraction physics (North-Holland, Amsterdam) ISBN 0-444-10791-6
39. Born, Max; Wolf, Emil (October 1999). Principles of Optics. Cambridge: Cambridge University Press. pp. 14–24. ISBN 0-521-64222-1.
40. Dispersion Compensation Retrieved 25-08-2015.
41. Rajiv Ramaswami and Kumar N. Sivarajan, Optical Networks: A Practical Perspective (Academic Press: London 1998).
42. Griffiths, David J. (1998). Introduction to Electrodynamics (3rd ed.). Prentice Hall. pp. isbn=0–13–805326–X.
43. Geoffrey New (7 April 2011). Introduction to Nonlinear Optics. Cambridge University Press. ISBN 978-1-139-50076-0.
44. Dorn, R.; Quabis, S. & Leuchs, G. (Dec 2003). "Sharper Focus for a Radially Polarized Light Beam". Physical Review Letters 91 (23): 233901±.

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Authors: **Md. Minhaj Ahmed, Sayyed Tajuddin**

Paper Title: **Rocket Net Force**

Abstract: Net force refers to what you get when you consider the total effect of all the forces acting on something. If two equal forces are acting in opposite directions, the net force is zero. A net force acting on an object causes the object to accelerate. The study of rockets is an excellent way for students to learn the basics of forces and the response of an object to external forces. The motion of an object in response to an external force was first accurately described over 300 years ago by Sir Isaac Newton, using his three laws of motion. Engineers still use Newton's laws to design and predict the flight of full scale rockets. Forces are vector quantities having both a magnitude and a direction. When describing the action of forces, one must account for both the magnitude and the direction. In flight, a rocket is subjected to four forces; weight, thrust, and the aerodynamic forces, lift and drag.

Keywords: Rocket Net Force, Newton's Laws of Inertia, Aeronautics force, Drag, Lift, Weight, Thrust, Rocket Design.

References:

1. Crosby, Alfred W. (2002). Throwing Fire: Projectile Technology Through History. Cambridge: Cambridge University Press. pp. 100–103. ISBN 0-521-79158-8.
2. NASA Spacelink - "A brief history of rocketry"". Retrieved 2006-08-19.
3. Hassan, Ahmad Y. "Transfer Of Islamic Technology To The West, Part III: Technology Transfer in the Chemical Industries". History of Science and Technology in Islam. Retrieved 2008-03-29.
4. History of the Rocket - 1804 to 1815 by Gareth Glover
5. Rockets and Missiles By A. Bowdoin Van Riper
6. HISTORY OF ROCKETRY: Verein für Raumschiffahrt (VfR)". Daviddarling.info. 2007-02-01. Retrieved 2012-06-14.
7. (Glenn Learning Technologies Project) Available: http://www.grc.nasa.gov/WWW/K-12/aboutltp/EducationalTechnologyApplications.html
8. National Aeronautics and Space Administration. Beginner guide to Rockets. [Online]. Available: https://spaceflightsystems.grc.nasa.gov/education/rocket/shortr.html
9. Available: http://wikipedia.org
10. von Braun, Wernher. The Redstone, Jupiter and Juno. Technology and Culture, Vol. 4, No. 4, The History of Rocket Technology (Autumn 1963), pp. 452-465.
11. "International Space Hall of Fame: Sergei Korolev". Nmspacemuseum.org. Retrieved 2012-06-14.
12. Rocket R-7". S.P.Korolev RSC Energia.
13. Hansen, James R. (1987) "Engineer in Charge: A History of the Langley Aeronautical Laboratory, 1917-1958." The NASA History Series, sp-4305. Chapter 12.
14. "A Rocket Drive For Long Range Bombers by E. Saenger and J. Bredt, August 1944" (PDF). Retrieved 2012-12-10.
15. Winter, Frank H; van der Linden, Robert (November 2007), "Out of the Past", Aerospace America, p. 39
16. "The Internet Encyclopedia of Science, history of rocketry: Opel-RAK". Daviddarling.info. Retrieved 2012-12-10.
17. Launius, Roger D.; Jenkins, Dennis R. (2012). Coming home : reentry and recovery from space (PDF). Washington, DC: National Aeronautics and Space Administration. p. 187. ISBN 978-0-16-091064-7. Retrieved 3 April 2015.
18. "Returning from Space: Re-entry" (PDF). Federal Aviation Administration. U.S. Department of Transportation. Washington, DC 20591. FOIA Library. pp. 4.1.7-335. Retrieved 7 April 2015.
19. "MLRS (Multiple Launch Rocket System), United States of America". army-technology.com. 2014 Kable, a trading division of Kable Intelligence Limited. Retrieved 3 July 2014.
20. "NASA's great observatories". Nasa.gov. Retrieved 2012-12-10.
21. "NASA History: Rocket vehicles". Hq.nasa.gov. Retrieved 2012-12-10.
22. Wade, Mark. "Soyuz T-10-1". astronautix.com. Encyclopedia Astronautica. Retrieved 24 June 2014.
23. "NASA- Four forces on a model rocket". Grc.nasa.gov. 2000-09-19. Retrieved 2012-12-10.
24. "Space Shuttle Use of Propellants and Fluids" (PDF). Nasa.gov. Retrieved 2011-04-30.
25. Huzel, D. K.; Huang, D. H. (1971), NASA SP-125, Design of Liquid Propellant Rocket Engines (2nd ed.), NASA
26. NASA (2006), "Rocket staging", Beginner's Guide to Rockets (NASA), retrieved 2009-06-28
27. MSFC History Office, "Rockets in Ancient Times (100 B.C. to 17th Century)", A Timeline of Rocket History (NASA), retrieved 2009-06-28

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3.

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Paper Title: **Practical Implementation of Newton's Method Tested on Quadratic Functions**

Abstract: In this work we give a detailed look to the Practical implementation of Newton's method tested on quadratic functions. Section (1) speak about the theory of optimization problems, introduce definitions and theorems of linear programming problems , definitions and theorems of quadratic programming problems . Section (2) introduce some methods that has a relationship with our method . In section(3) we look at a method for approximating solutions to equations, solving unconstrained optimization problems. The general theory of the problem is described. Section(4) gives practical implementation of Newton's method tested on quadratic functions to test the theoretical results shown in the work. Section (1)

Keywords: linear programming problems, Practical implementation of Newton's, quadratic functions.

References:

1. Bonnans, J. Frédéric; Gilbert, J. Charles; Lemaréchal, Claude; Sagastizábal, Claudia A. (2006). Numerical optimization: Theoretical and practical aspects. Universitext (Second revised ed. of translation of 1997 French ed.). Berlin: Springer-Verlag. pp. xiv+490. doi:10.1007/978-3-540-35447-5. ISBN 3-540-35445-X. MR2265882.
2. C. T. Kelley, Solving Nonlinear Equations with Newton's Method, no 1 in Fundamentals of Algorithms, SIAM, 2003. ISBN 0-89871-546-6.
3. Endre Süli and David Mayers, An Introduction to Numerical Analysis, Cambridge University Press, 2003. ISBN 0-521-00794-1
4. Kaw, Autar; Kalu, Egwu (2008). Numerical Methods with Applications (1st ed.)
5. M. A. EL siddieg Awatif(2015)The Davidon Fletcher Powel Method Tested on Quadaratic Programming functions
6. P. Deuflhard, Newton Methods for Nonlinear Problems. Affine Invariance and Adaptive Algorithms. Springer Series in Computational Mathematics, Vol. 35. Springer, Berlin, 2004. ISBN 3-540-21099-7.
7. Press, WH; Teukolsky, SA; Vetterling, WT; Flannery, BP (2007). "Chapter 9. Root Finding and Nonlinear Sets of Equations Importance Sampling". Numerical Recipes: The Art of Scientific Computing (3rd ed.). New York: Cambridge University Press. ISBN 978-0-521-88068-8.. See especially Sections 9.4, 9.6, and 9.7.
8. Tjalling J. Ypma, Historical development of the Newton-Raphson method, SIAM Review 37 (4), 531–551, 1995. doi:10.1137/1037125
9. J. M. Ortega, W. C. Rheinboldt, Iterative Solution of Nonlinear Equations in Several Variables. Classics in Applied Mathematics, SIAM, 2000. ISBN 0-89871-461-3.