

Wave-Particles

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Abstract: Standing half wave particles at light speed twice in expansion-contraction comprise a static universe where two transverse fields 90° out of phase are the square of distance from each other. The universe has a static concept of time since the infinite universe is a static universe without a beginning or end. The square of distance is a point of reversal in expansion-contraction between the fields as a means to conserve energy. Expansion of photon energy in the electro field creates matter while contraction in the magnetic field creates light energy and gravitational pull toward the higher frequency energy. Also, the universe with matter has a moving physical concept of time from gravitational pull on expansion-contraction.

1. Introduction

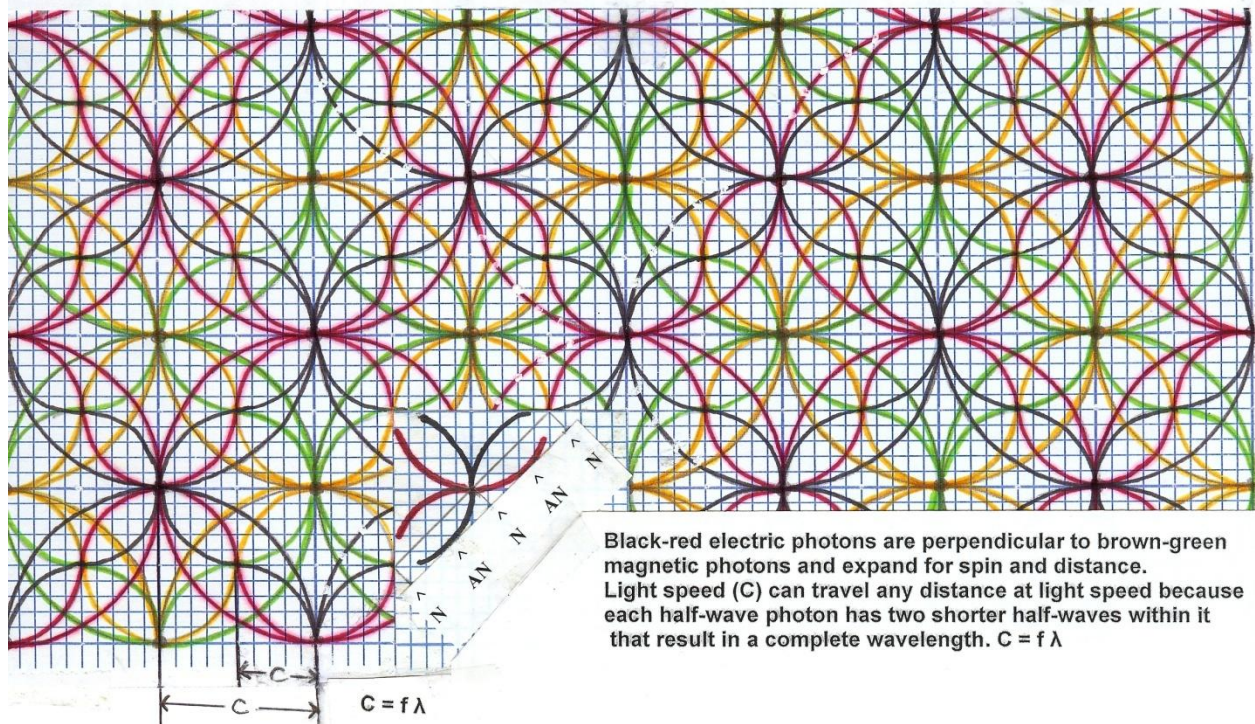
Expansion of the electromagnetic field occurs at light speed in half wavelengths and contraction occurs at light speed in half wavelengths so the full expansion-contraction oscillation occurs at twice light speed in half wavelengths 90° out of phase. The driving force in the electro field is expansion while the driving force in the magnetic field is contraction. The universe is comprised of half wave photon infinite energy on expansion-contraction at twice light speed having half wave photon finite energy with two shorter half wave photons within each photon resulting in complete wavelengths at light speed.

A metaphor to motion-picture Theater: the screen is the universe, the pictures are the stars and galaxies and the projector is energy at twice light speed. We come from finite energy and see the moving pictures in mass-time. Mass as finite energy is receding due to expansion in the field evidenced by the redshift and distance. Mass-energy equivalence is an equal function where mass is not the same as energy but equal to it when finite. Matter can neither be created nor destroyed because the mass-energy equivalence is finite at light speed. The link between infinite and finite energy is twice light speed and a universe without a beginning is a universe without mass-time. Standing half wave photons are ether at twice light speed on expansion-contraction that permeates everything as medium.

In Figure 1A, half wave photons are open-ended where anti-nodes are in the middle and nodes at ends such that each half wave is multiplying into full wavelengths. Half wave photons in infinite energy at twice light speed are standing waves without matter and time since there is no gravitational pull for momentum and distance. Photon half waves are twice Planck's constant on expansion-contraction having very high energy levels that create matter in a quantum field cone. Black-red electro photons are transverse waves perpendicular to brown-green magnetic photons. In Figure 1A, it should be noted in the area outlined at "C" that the shorter full wave black-red electro photons (center of half waves) are in phase at the nodes with the shorter full wave brown-green magnetic photons but 180° or twice 90° out of phase perpendicular at the anti-nodes.

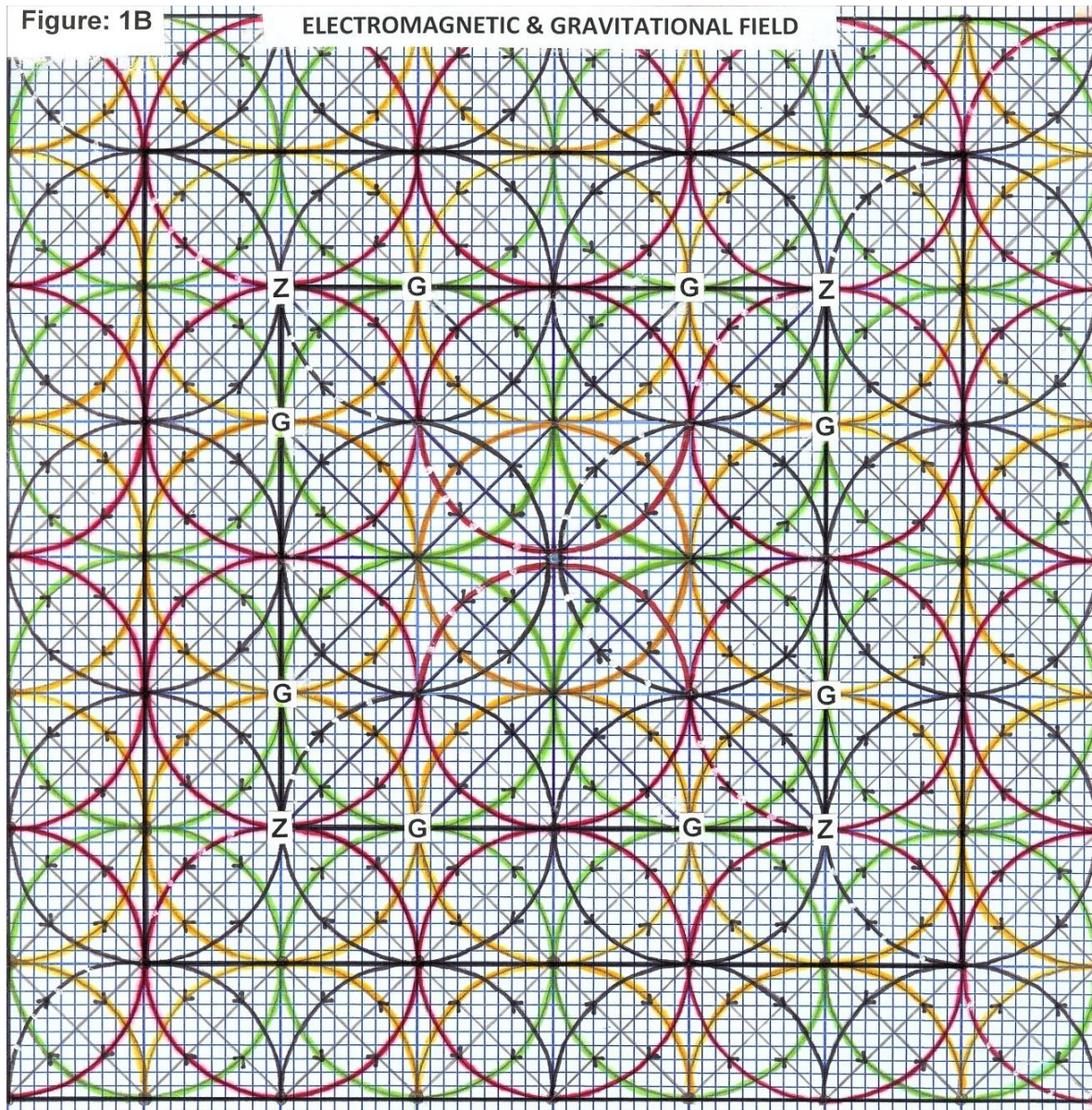
Figure: 1A

OPEN-ENDED STANDING WAVES



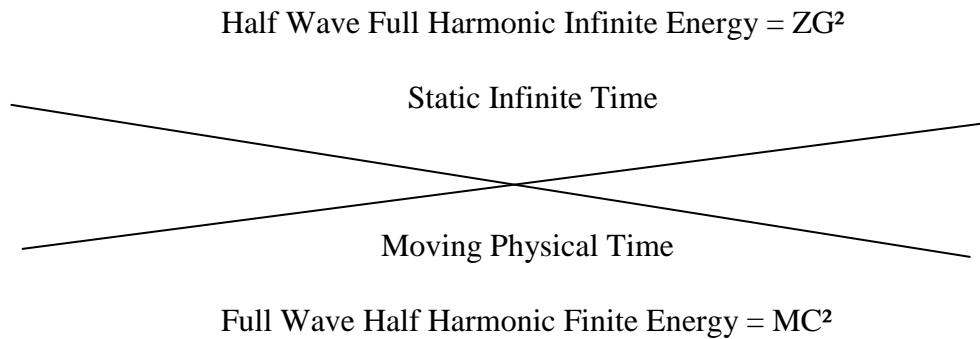
2. Report

Electromagnetic waves are comprised of photons on expansion-contraction. Figure 1B below depicts half waves on expansion-contraction where matter is created from photon energy at twice light speed. Moving two half waves from center in direction Z and squaring, there are four complete green magnetic circles in the square. Moving three half waves from center and squaring, there are nine complete brown magnetic circles in the outer square and so on at the inverse square distance from center. The square of the distance is from mass center with the four corners Z between the two fields. Mass at center in the electro field Z coupled with momentum G in the magnetic field is matter with gravitational pull after breakout from an expanding field cone. Black-red electro photons and brown-green magnetic photons are perpendicular to each other with black-red expanding in direction Z and brown-green magnetic photons on contraction in direction G. When black-red electro photons are expanding in direction Z, then the brown-green magnetic photons are rotating as momentum in direction G with the electro photons in Z. Expansion of matter energy in the electro field already includes part of the magnetic field as subatomic gravitational forces; the remaining magnetic field spectrum is light energy and gravitational pull on contraction toward the higher frequency energy, the remaining electro field spectrum not subject to light energy and gravitational pull is dark energy and dark matter.



In Figure 1B above, the magnetic field photons in G rotation coupled with the electro photons in Z direction needs clarity. Start with the left corner of the Z square to see how the G photons move from all four sides of the square that form a circle inside the black-red photons perpendicular in direction Z. Similar to Faraday's Law of induction, the magnetic field photons moving in a circle in direction G will cause momentum inside the electro field photons when there is a change in the fields. Magnetic waves in direction G rotating inside the electro waves perpendicular are the inverse square distance from mass center. For an increase/decrease in amplitude of electro photons moving in direction Z, the magnetic field photons will always be out of phase at the anti-nodes. .

From direction of arrows in Figure 1B, the black electro and brown magnetic propagate as circular and sine waves while the red electro and green magnet propagate only as sine waves. Quarks deep in the apex of circular field cones include the black electro circular waves, the black electro sine waves and green magnetic sine waves as the proton while brown magnetic circular waves, brown magnetic sine waves and red electro sine waves are the neutron. Gluons are the amplitude of half waves and much stronger in the cone apex holding protons and neutrons together. Beta decay is interaction of black-red electro half waves between protons and neutrons. Note: - all half wave photons in finite energy have two shorter half waves within from the prior higher frequency. Electrons expand outwardly in the quantum field cone where amplitude of the red/brown electrons and black/green positrons interact with the brown-green photons. [The e coupling constant as the inverse of its square: about 137.03597 is the amplitude for a real electron to emit or absorb a real photon.][1]. Electricity and Magnetism is the rapid motion of the red electrons in a wire coupled with the brown circular magnetic waves from the right hand rule. $I^2 R$ is inverse square distance of magnetic field current on a wire coupled with resistance of the wire for wattage. Voltage is frequency of the G photon rotation (momentum) in the EM field.



3. Conclusion

$E = ZG^2$ where ZG^2 is half wave photon energy expanding in the electro field in direction Z at light speed and returning at square of distance in the magnetic field on contraction at light speed which is twice light speed for a full expansion-contraction oscillation. This is twice Planck's constant: $E = 2(\hbar f)$ at twice light speed from full oscillation. Standing wave infinite energy have infinite standing time as opposed to finite energy with matter having moving physical time from gravitational pull toward infinite time. Photon energy can extend to any distance at light speed because of frequency and wavelength and timeless without mass. Time is not another dimension but rather mass energy in the electro field driven by gravitational pull in the magnetic field. When matter is created in the electromagnetic field from energy at twice light speed on expansion-contraction, distance comes into the picture at the inverse of its square between centers of mass. Everything in expansion-contraction with matter is finite energy coupled with gravitational pull in the magnetic field. This brings to mind Heisenberg's uncertainty principle where the standing position of an electron in the electro field cannot be measured simultaneously with momentum in the magnetic field. The reason is because the two fields are out of phase.

C^2 is numerically one (1) as multiplier and offset to mass due to reciprocity between fields in complete wavelengths 180° out of phase. Thus: $E = M(1)$ is mass in phase at light speed in the electro field with moving time from gravitational pull at light speed in the magnetic field. Mass as a reciprocal of gravitational pull is outlined as follows:

$E = M C^2$ Einstein's equation on mass and energy.

$E = M (1)$ Electro Photons "C" divided by Magnetic Photons "C" = (1) in phase light speed.

$E = G (1)$ One (1) is a multiplier and offset to mass and gravitation in phase at light speed.

$1 = MG$ Mass and Gravitational pull are reciprocal from full wave base photons in phase at nodes and 180° out of phase at anti-nodes on expansion-contraction.

Photons in the electromagnetic field have transverse electro half waves 90° out of phase with magnetic half waves. The half wave photons serve as the "particle" function. Half wave base particle photons in the magnetic field 90° out of phase with the electro field provide the total spectrum of electromagnetic waves and usage properties including light energy. The rotating half wave photons in the magnetic field inside the transverse half wave photons of the electro field provide momentum change in electromagnetic energy. [A star is formed when a large amount of gas (mostly hydrogen) starts to collapse in on itself due to its gravitational attraction.][2].

Full wave base photons serve as the "wave" function (two shorter half waves within) since the wave photons are twice 90° or 180° out of phase between the electro and magnetic fields. Full wave base photons provide matter in the electro field on expansion while full wave base photons in the magnetic field provide gravitational pull on contraction. Gravitational pull in the magnetic field 180° out of phase with mass in the electro field have very weak forces because the fields are completely out of phase on expansion-contraction at twice light speed. General Relativity is curvature of the electromagnetic field photons by mass in the electro field on expansion-contraction. [Space-time in general relativity is not flat but curved by the distribution of mass and energy in it.][3].

In summary: Photons on expansion in the electro field in infinite energy at twice light speed will become weaker on expansion and become more dense helping to take on properties of mass as protons, neutrons and electrons while photons in the magnetic field will not become weaker on contraction but act as an offset to mass for equilibrium in the form of gravitational pull. Photons at very high energy levels provide the different elements in the periodic table due to change of momentum frequency and wavelength in the electro field on expansion and magnetic field on contraction.. The fundamental frequency of open-ended standing waves (static infinite cause of action) in infinite energy is connected to everything finite where the frequency pictures in expansion-contraction are past, present and future. God and science are infinite since static time is infinite time.

References

- [1] Feynman, R.P. (1988). *QED, The Strange Theory of Light and Matter*, Princeton University Press p129.
- [2] Hawking, S. (1996). *The Illustrated A Brief History of Time*, Bantam Books, p105.
- [3] Ibid, pp 40-42. General Relativity background field in Figure 2.16 p41 is similar to the diamond squares (rhombus) foreground in Figure 1B above.

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