

LIGHT CONVERTED TO GRAVITY

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Albert Einstein (1879-1955) proposed a counter force as a resolution of the Black Hole paradox, but only as a possibility in accordance with mathematical integration. However, its acceptance was countered with the discovery of redshift in starlight per distance in relation to the Doppler principle whereby light and sound reflected from a receding mass become of less energy, as to increase the speed of the mass they are reflected from.

Contrary to the Doppler principle is containment radiation of internal energy due to its not allowing relative motion in free space to continue as such according to theory. However, starlight need not be the same as containment radiation, and there is a paradox of a relativistic increase in mass along with decrease in length in relation to increase in speed. The increase in mass is absorbed from a greater amount of mass in order to present acceleration of the lesser mass from exceeding light speed, and relativistic contraction of length along with relativistic increase in mass is consistent with Big Bang theory.

Such possible results are comparable to other aspects of theory in various ways. Containment radiation, for instance, can be related to the Higgs mechanism whereby mass can either be massive or massless. Explanation of it is according to wave theory whereby light provides wave action through mass. Waves are massless in the since momentum of a particular surface of water remains the same after waves pass over it, but can also be massive in the since something else on the surface interacts with the waves to result in change of momentum.

Waves themselves can be comprised of various forms, and Einstein was rewarded the Nobel Prize for his theoretical support regarding their mathematical probability.

According to wave theory, waves mainly form into mass by various means of superimposing. For the superimposing to maintain of a particular form, other waves are reflected away. The reflection further relates to kinetic energy whereby momentum mv of mass m become $(\frac{1}{2})mv^2$. For waves moving at light speed c , their kinetic energies are $(\frac{1}{2})mc^2$. Two impacts of waves from opposite directions add up as internal mass energy mc^2 .

The one-half factor seems unique in various ways. Consider, for instance, mass m moving at speed $c/2$. For containment radiation to apply in manner consistent with conservation of momentum, the same amount of it needs to be reflected in opposite directions. It can result as such if part of containment radiation from the opposing direction of relative speed is able to superimpose through the mass.

The momentum conservation of containment radiation can relate in the manner $(c + v) - (c - v) = 2v$. Light speed c cancels out for differences of its speeds moving in opposite directions of mass moving at velocity v . If $v = c/2$, then $2v = c = 1$ as unity. If $v = c/3$, then $(4/3 - 2/3 = 2/3)$. If $v = 2c/3$, then $(5/3 - 1/3) = 4/3$. Of significance is that velocities below one-half light speed becomes less than unity whereas velocities above one-half light speed is more than unity. Indication is that there is more energy lost than gained above the one-half

light speed condition. However, there is also the possibility that the more superimposing of light allows more reflection in the opposite direction of relative motion for lesser amount of need of superimposing of radiation moving in that direction.

A similar result consistent with the former is of gravitation effect in accordance with the Schwarzschild singularity and its paradoxical interpretation of the Black Hole condition. The singularity is in relation to light speed being able to escape from a gravitational field. Escape speed itself is of the square-root of $2GM/R$. G is Newton's gravitational constant. M and R represent mass and its radius, and $GM/R = v^2$ is gravitational potential equal to rotational surface speed squared. The Schwarzschild metric equates the slowing of light speed from c to c' for less escaping in the manner of c being reduced to c' . Calculation is according to the relativistic factor squared in the manner: $c' = c(1 - 2GM/Rc^2)$.

Significant is that $c' = c/2$ if escape-speed-square equals one-half light-speed-squared. As for ratios of one-third and two-thirds, c' differences become $2c/3$ and $c/3$. The former is greater than one-half and the latter is smaller than it, indicating more energy is lost above the one-half level condition.

Orbital-speed-squared equates as GM/R , which is one-half escape-speed-squared, or one-fourth in comparison to one-half escape speed squared. Orbital speed itself is the square-root of GM/R , thus being one-half light speed. However, clocks of local observers are relatively slower along with length being contracted by the relativistic factor. Local perception is thus also according to the same relativistic factor squared for nullification of both orbital speed and light speed being perceived as c instead of c' .

This one-half light speed upper limit does not refute the black hole condition. With both orbital speed and light speed being half as much, there is no escape. Only of significance is resolution of such paradoxes as increase in mass resulting in zero length within an infinite time interval.

Orbital speed is of relative motion. Further interrelation with relative motion is of linking it to the invisibility of containment radiation. As with gravity, it relates to vacuum effect as gravitational effect that is further consistent with Tired Light theory. The decrease in light energy by either slowing or as invisible radiation can simply be interpreted as light converting to gravitational effect in manner of vacuum effect. Invisible radiation as massless light escapes to gradually becoming less energetic as visible light that becomes more redshifted per distance.

Light also interrelates with electromagnetism. By it, electric charge maintains of the same magnitude if increase in mass is the same as its decrease in radius whereas gravity increases according to both increase in mass and decrease in radius. Such results are consistent with electromagnetic light energy converting to gravity.

Electromagnetism is also consistent the Planck Constant of atomic theory being of the parameters $m \cdot v \cdot r$. Since v itself is constant, being the fine-structure-constant about 137 times slower than light speed, the parameters $m \cdot r$ a constant where a increase or decrease in m is countered by a decrease or increase in r .

An electromagnetic formula was proposed in relation to an upper limit of electromagnetic scattering by Joseph John Thomson (1856-1942) and J. Lamor (1857-1942). They

related acceleration of electric charge to internal energy of mass in relation to two-thirds the product of electron mass m_e , its radius r_e , and acceleration squared a^2 per light speed squared. Incidentally, the ratio $2/3$ multiplied by the relativistic factor squared for a one-half light speed condition calculates as $(2/3)[1 - (1/2)^2] = (2/3)(3/4) = 1/2$, thus being consistent with the one-half light speed upper limit.

Further consideration is according to how containment radiation is either visible or invisible at the atomic level. There is matter and antimatter for conversion into other particles of mass and radiation. It could be of differences between visible and invisible radiation occurring in accordance with particular circumstances. For instance, converting to invisible radiation could also result in vacuum effect with the condition of it being able to convert back to visible radiation.

This invisibility condition is also somewhat consistent with a proposal of dark energy and mass for explaining inconsistent observation of cosmology being of less mass needed in compliance with Newton's inverse square law. Dark matter and energy have also been proposed for explaining an inconsistency of an expanding universe supposedly determined to be at a faster rate of expansion than it had been in the past. Furthermore, incandescence of light at higher temperature is part of the historical development of quantum theory.

In comparing proton mass and radius density to electron mass and radius density, the former is to the fourth power. It is because of smaller volume being to the third power of radius along with twice more mass.

Experiments by Jean Bernard Leon Foucault (1819-1868) and Armond Hippolyte Louis Fizeau (1819-1896) confirmed wave properties of radiant heat by means of splitting rays of infrared light for allowing them to superimpose in producing alternating bands of hot and cold in analogy to light and dark fringes of ordinary light. James David Forbes (1800-1861) then discovered heat polarizes similar to that of light, and he advanced a concept of continuous radiation spectrum being consistent with the theory of electromagnetism proposed by James Clerk Maxwell (1831-1879).

Leonard Euler (1707-1783) proposed a particular substance of mass can absorb light of any frequency that its smallest particle is able to vibrate. More development of theory was according to how matter can absorb light. William Wollaston (1766-1825) discovered light spectra emitted from matter includes dark lines. It was eventually explained how atoms absorb waves of light according to resonance. It had become evident that poor absorbers of heat are poor emitter of it, whereas better absorbers are better emitters, such that what is emitted is the same as absorbed within an equilibrium state of existence. Gustav Kirchhoff (1824-1887) proposed in 1859 a particular condition of "black-body" radiation applies to all bodies regardless of their material composition.

It is assumed systems obtain a state of thermal equilibrium at a sub-temperature below incandescence. If X denotes the total radiation per surface area on each body of mass, and x is the fractional amount of radiation actually absorbed, and E is permissible radiation emitted, then the result is mathematically expressed as either $Xx = E$ or $X = E/x$.

The study of temperature and light intensity by John Tyndall (1820-1893) and Joseph Stefan (1835-1893) of an electric current through a platinum wire resulting in heating the

wire to a state of incandescence was found of different measure of temperature to be about twelve times greater with difference in temperature of 1200 and 525 degrees centigrade. If 273 degrees centigrade is added to both 1200 and 525 degrees centigrade, then their ratio is to the fourth power consistent with how mass density of the proton is to the electron.

The above analysis does not result as a completely proven theory. Many unified field theories have been proposed. One endorsed by me is of a book written by a physicist of the name Harold Aspden (1927–2011). His last book titled *Physics United* and published in 2016 by his wife's submission, to SABBERTON PUBLICATIONS, is consistent with historical development of theory. It even refers to a condition of one-half light speed, includes the Thomson-Lamor formula along with deriving the fine-structure-constant.