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LITLE BLACK HOLE AND ELECTRIC CHARGE

Description of my LBH theory

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Oscillation with the speed of light is applied to a body. In this kind of oscillation, gravitation is important. Of the 7 hypotheses required, 5 may be assumed for a black body, such as that the electromagnetic wave is equivalent to heat.

Two hypotheses a) that gravitation is important b) electrical charge is equivalent to mass .

When the electric charge we introduce is that of a proton, the resulting mass approximates the Planck mass

The equations are general and include a hypothetical system with various values of electric charge of the masses, macroscopic or microscopic.

By importing the electric charge unit, the following result. A relationship similar to Wien's law with a double constant and wavelength, which involves here the gravitational oscillation length (1_g).
The important thing is that this relationship confirms Wien's law, giving i.e. the same wavelength for the same temperature in the CMBR.

The mass m_{eg} is equivalent to a proton mole, by angular momentum, of which the mass is the geometric mean.

For the CMBR, applies: We first find the lengths of emission with ratio $\lambda / l_c = 2\pi$ and then check the energy densities based on the two laws of Stefan-Boltzman (without diagram) and Plank and the ratio of temperatures is equal to 5.

HYPOTHESES (paper one)
At a point in space oscillation is applied. The oscillation is expressed on the basis of the sizes of length and acceleration. Each periodic or cyclical body motion can be expressed using a characteristic length and the acceleration of parts of the body, such as a string, the molecular vibration, the projection of a point of a cyclical motion.

The electric charge is proportional to a mass which in the equations has a positive value, as well as the charge, Q = k.m. The constant k^2 is proportional to the ratio of the constant of gravity over the constant of electricity and equal to $G/2\pi K_e$.

The constant k has two possible values: $k_{5.1a}$ and $k_{5.1b}$.

The constant $k_{5.1a}$ is equal to $(2\varepsilon_0 G)^{1/2}$, ε_0 = dielectric constant, G = constant of gravity.

The constant $k_{5.1b}$ equal to $(4\pi\varepsilon_0 G)^{1/2}$ was rejected.

The oscillation is applied to a medium, with a coefficient, which is in the form of the constant of elasticity. This is illustrated by the hypothesis required, in order to apply oscillation and of the diameter and circumference of the cycle of the oscillator, $\lambda = 2\pi.l_c$.

Finally, both the diameter and the perimeter radiate. The length λ is proved that corresponds to the emission of the equivalent mass (m_{eg}) of the electrical charge. l_c regards electrical oscillation.

There is gravitational oscillation with length $l_g = (2\pi)^{1/2}.l_c$

The first equations until the extraction of the constant π*= 3.1598 in units, including a hypothetical process, not mandatory, are dimensional. A system with cyclical currents and capacitor with leakage current was selected, where the charges can accelerate and gravitation is significant. The classical laws of gravity and electricity are modified, based on the density of charge and mass. In large bodies such a model is likely, since the rotation of the body takes place, there are static charges on poles and the vertical motion of charges in the internal layers is possible. However, the density of mass should increase the gravitational force.

The relativity and the coefficient of shape are introduced, but deleted by the equation of gravity, electricity, until the extraction of the constant π*.

The above assumptions about the relationship of the lengths were selected because the Planck mass (m_{planck}), the Planck temperature are extracted and agree with the equivalence of m_{eg} and Planck mass by moment of inertia, also selected to agree with the equivalence of m_{eg}, proton by an angular momentum relationship.

At first, two masses m_{eg} 5.1a and m_{eg} 5.1b were proposed .

From the two only the first was more suitable, it is greater than the second by the factor $(2\pi)^{1/2}$.

The length of gravity $l_g = (2\pi)^{1/2}.l_c$ is a product of the geometric relationship

$l_g^2 = \lambda.l_c$ with $\lambda = 2\pi l_c$

The gravitational oscillation is a product of the other two and its length is the geometric mean. It is clear from both the forces, and the wavelengths, that the system has a complex geometry.

The involvement of the Avogadro number in atomic radius, which divides, and results in equivalence between the moment of inertia of m_{eg} and Planck mass, as well as that, by dividing m_{eg} with Avogadro, results in the equivalence of proton with electron, shows that m_{eg} ,as equivalent mass of the electrical charge, comprises of distinct parts. This resembles

the theory of pixel space by Lee Smolin,

The next hypothesis regards the classical hypothesis of a black body where the electromagnetic wave heats the "walls" of the body, so there is equivalence of electromagnetic wave and heat. In this relationship there are degrees of freedom and number of quanta $n_1 = 10$, $n_2 = 12$
Their calculation was based on the Planck temperature, but more importantly, they were calculated separately based on physical constants.

The hypothesis of the equation of gravitational and electric force, starts with the classical laws from infinity and as we approach to the body, masses and charges are expressed by densities. The length of the electric force, however, interaction l_c and gravitational l_g are not equal, most writers equate the two lengths. Also there is a difference between most writers in the selection of k and the derivative m_{eg}. I selected $m_{eg5.1a}$ which contains 2π and not $m_{eg5.1b}$.

Most writers use as a coefficient ratio $k_{5.1b}$ which does not have an extra 2π in the denominator and the derivative of m_{eg} is twice the Hawking mass.

$m_{eg5.1b} = 2.M_{PH}$, apparently due to the introduction of relativity.

My equations are described to the limit of the speed of light.

The relativity, although not appearing after the extraction of the constant π^*, it is likely its presence to be necessary in the following equations, since we have a relationship similar to Wien's Law but with almost a double constant, and wavelength, the length of the gravitational wave. In these equations the Poisson equation was used for the electric field, where in the differential the minimum length was replaced by the small and constant length l_c (infinitism problem)
The solution required the existence of electric dipole without diferential of acceleration dg but only acceleration g. Alternatively it is used a modified law of Coulomb with density of electric charge , so we do not have infinitism problem.

Nevertheless, these equations give two basic results, which characterize their nature. a) They result in double Wien's Law constant, required in the CMBR (paper two). b) With proper handling of the equations they give the temperature of the core of the sun, if we introduce its radius as length (paper two). But obviously a different approach is required in handling the differential since the length is now great. But the important thing in this result is that the constant π^* can prove to be useful, it has i.e. physical meaning.

The papers include the relationship of the fine structure constant with the ratio of the squares of m_{eg} and Planck mass, so there is a relationship with the other coupling constants of the standard model. A fine texture constant was proposed for proton $2\pi/137{,}035 = 1/21{,}8$ and characteristic length of 4,9 fermi.

Finally there are independent interstitial papers on calculating the neutrino. Some relationships were also found, indicating the possibility of consolidation, in separate particles as well.

The equation, which gives the electron mass in CMBR, is tested, in the calculation of a hypothetical temperature, in the hadron-lepton colliders. However, temperatures there, are not real, but hypothetical. They may though, become a point of reference with other theories.

CONSTANTS OF MY THEORY

$\pi^{*4}= h^2.c^2.G/K_e^3.k_b^4$

h:plank constant , c:speed of light G:gravity Newton constant , $K_e=1/4\pi\varepsilon_0$: Coulomb constant , k_b: Boltznan constant

SI system

$\pi^{*2}= 3.1598^2.Cb^3.Kelvin^2.sec^4.kg^{-3}.m^4$

NIS system

$\pi^{*2}= 8.257x10^{-16}.GeV^{-1}.e^3$, $\pi^* = 2.87x10^{-8}.GeV^{-1/2}.e^{3/2}$, $\pi^{*4}= 68.182x10^{-32}.GeV^{-2}.e^6$

e: electric charge of positron

Density-Temperature constant under pressure of gravity

$\rho_m =DT.T^2/l_c$

$DT=(n_1/n_2)^3.N^3.\pi^{*-2}.(2\pi)^{1/2}.4\pi.\varepsilon_0{}^2.e^{-1}$

$n_1=10$, $n_2=12$, $N=1$

ρm: density of matter DT:constant , T:temperature(core of a star) ,l_c:some radius of the body

SI system

$DT = 8.928x10^{-4}.Kelvin^{-2}.kg.m^{-2}$

$1/DT = 0.112x10^4.Kelvin^2.kg^{-1}.m^2$

$(1/DT)^{1/2} =0.334x10^2.Kelvin.kg^{-1/2}.m$

NIS system

$DT = 2.626x10^{18}.GeV$

$1/DT = 0.38x10^{-18}.GeV^{-1}$

$(1/DT)^{1/2} = 0.616x10^{-9}.GeV^{-1/2}$

mass : $m_{eg\ 5.1a}$ $m_{eg} = e/k = e/(G/2\pi.K_e)^{1/2} = e/(2\varepsilon_0 G)^{1/2}$

e: electric charge of positron

$m_{eg\ 5.1b}$ $m_{eg} = e/(4\pi.\varepsilon_0.G)^{1/2}$

$m_{eg\ 5.1b}$ is about 2.Mass of Hawking $m_{eg\ 5.1a} = (2\pi)^{1/2}.m_{eg\ 5.1b}$

SI system

$m_{eg\ 5.1a} = 4.66x10^{-9}.kg$

NIS system

$m_{eg\ 5.1a} = 2.61x10^{18}.GeV/c^2$

$m_{eg\ 5.1b} = 1.041x10^{18}.GeV/c^2$

Function related with Wien's law

$T = (n_1/n_2)^{-3/2}.N^{-3/2}.1.085x10^{16}.e/l_c$

$n_1=10$, $n_2=12$,$N=1$, e : electric charge of positron

$1.085x10^{16}.Kelvin.Cb^{-1}.m = \pi^*.(4\pi)^{-3/4}.\varepsilon_0^{-5/4}.G^{-1/4}$

$T.l_c = 2.28x10^{-3}.m.Kelvin$

lengths of oscilators : $\lambda = (2\pi)^{1/2}.l_g = 2\pi.l_c$, $l_g = (2\pi)^{1/2}.l_c$

$T.l_g = 2.28x10^{-3}.(2\pi)^{1/2} = 5.727x10^{-3} = 1.976W$

$W = 2.898x10^{-3}.m.Kelvin$: Wien's constant

Fine structure of proton

$m_{plank}^2/m_{eg}^2 = 137.035/2\pi = 21.80995$

fine structure of proton : $2\pi/137.035 = 1/21.8 = 0.045$

Read a paper about LBH theory 2009 D.G.Coyne and D.C.Cheng
http://arxiv.org/ftp/arxiv/papers/0905/0905.1667.pdf

about this paper http://www.universetoday.com/2009/05/14/is-everything-made-of-mini-black-holes/

Ελληνικό άρθρο για το παραπάνω paper

http://physics4u.gr/news/2009/scnews3779.html

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