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Title : The connection of fine structure constant and proton (mass and length) with gravity and 1,052mm cosmic microwave background radiation from unified theory

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Abstract

By the below analysis arises the substance of fine structure constant and the connection of mole of proton with gravity , also prediction of neutrino energy . using the law of Stefan-Boltzman and our function , we have results in agreement with MCB radiation while Wien's law cannot. We can propose a model for universe in extra dimension and the connection of proton and positron in a process of particle creation

INTRODUCTION

We use the functions of paper with title :

Electromagnetic interaction of gravity. Proposal for unified field theory.
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Main article

Symbols

meg = $4,66.10^{-9}$.kg = $2.61\text{x}10^{18}$.GV/C2 of 5.1a), function 108 of paper: $m=e/k > 0$
e : electron charge , K_e: Coulomb constant , $k = (G/K_e)^{1/2} = 8,6164\times10^{-11}$ C/Kg , G: gravity constant , function (106) ,π=3.14..,c:velocity of light ,λplank:length of plank , h: plank constant , le:length of charge $5.29\text{x}10^{-11}$.m , Na:avogadro's number , k_b: Boltzman's constant .

The following analysis gives us the character or the nature of the fine structure constant and its connection with a mole of protons and with gravity. From the same analysis also arises a prediction of neutrino energy. The application of the law of Stefan-Boltzman and our Equation, offers results which are in agreement with MCB radiation while Wien's law cannot. We can propose a model for universe in extra dimension and the connection of proton and positron in a process of particle creation

It is usefull to study some of the basic subjects of our work and try the application of the proposed equations.

Function 8 : electric potential Ue=Um/k and $Ue=c^2/k$, $Um=c^2$, k=q/m ,

q : electrical charge , m : equivalent mass of the electric charge , c : speed of light, k : a constant .

These equations are referred to some kind of equivalence between the electric charge and a mass having some specific properties. The potential cannot be of the form $Ue=v^2/2k$ because it is not relativistic; the charge remains constant with velocity and its equivalent mass of the charge too. This mass follows the Principle of charge conservation.

This mass has been called meg . The meg exists into the laws of the Nature as a simple factor; it has the property of gravity mass but it has not the property of the inertial mass.

The meg is introduced into Newton's, Coulomb's, and Einstein's laws. The absence of the relativistic variation of the meg is compensated by the relativistic length variation.

Function (2): The ½ factor in the energy of the self-induction E= (1/2) $L.i^2$ is found in the $8\pi^2$ of function (16) or as $\theta o^2/2$ (θo is the coefficient of the shape); the factor ½ is seen in the functions (38) and (46) as parameter of β (disappearing from the final equations).

The ½ in function (18) does not affects the function (20) i.e. $\tau=Cgx^2/k^2$. The relativity exists into the equations but the results remain the same.

Function (63): The energy Ec in the energy at rest and the potential energy mglc is the total energy which is relativistic due of the length l_c with $\gamma \cdot E_c = mgl_c$. Thus in (63) we have $\gamma \cdot E_c / l_c$, $\gamma = \left(\sqrt{1-\frac{\upsilon^2}{c^2}}\right)^{-1} = 1+\frac{\upsilon^2}{2c^2}+..$

Function (64) The Energy Eλc is equivalent with the total energy and thus in relativity is valid the relation Eλc= $\gamma.(n_1.N.hc/n_2.\lambda)$ and the rest energy is $(n_1.N.hc/n_2.\lambda)$; and the product $\lambda^2.\ lc^2$ in (66) becomes $(\lambda^2.\ lc^2)/\gamma^2$. Although and the relation (66) is not used here for the production of (102) are the same lengths in equivalent equations. This means that the (102) for λ=lc has the length $(lc^2/\gamma^2)^{1/2}$ = lc/γ. For small velocities υ<<c the γ=1/2 and the length is duplicated 2lc and the constant of the (102) takes the half of the original value; thus the (102) gives Wien's law for N=1, $n_1=10$, $n_2=12$.

For the proof of the (102) we use the (81) (Poisson law). Introducing in (81) the relativity $a_p=\gamma.\varepsilon_0/k.lc$ and in the (94), in the charge density $\rho= \gamma^3.q/\lambda.lc^2$ we will get the (102) with relativity which for low velocities is the Wien's law.

The (102) and the (171) can be compatible with relativity and this makes more difficult the detection of the coefficients n_1,n_2 as the meg. The relativity describes a continuous variation. When the particles disintegrate the relativity is unable to give an explanation of the particle wavelength – temperature giving the hope for the detection of the n_1,n_2 and the meg .

175 function $A=2,5041x10^{-24}.J.m$, is valid for $T.lg = 5,755x10^{-3}.m.K$:171 function and $n_1=10,5$ and $n_2=12,6$, but for $n_1=10$ and $n_2=12$, $A=2,383x10^{-24}.J.m$: 177 function so we call this factor $A_{177}=2,383x10^{-24}.J.m$
From 172,174 functions $A= n_1.N.k_b(l_g.T)$ arises in Wien's law system:
$A_{wien}= n_1.N.k_b(l_g.T)/2 = 1,1918x10^{-24}.J.m$, $n_1=10$, N=3
We believe that we can use the squares of energies (179,180 functions) in variable lengths , for atom of hydrogen (H) and proton wile in former paper we used the function 179 for lengths close to Plank lengths .
The approximation in 176,178 can be zero by the following analysis :
Function (179) $E_{cge}^2 = -4.E_c^2- E_g^2 +9.E_e^2$
$E_c =-3.h.c/ l_c$, $E_g= -3.G.m^2 / l_g$, $E_e=3.(K_e.(k.m)^2 /l_c$, $l_g=l_c.sqrt(2\pi)$
From (158) function : $m = m_{cge} = 1,7209\times10^{-7}.kg$ and this mass comes from function 155 : $f_c^2.f_G^1= f_e^3$ the relation of forces : electromagnetic , gravitational and electrical force . We rename the E_{cge} to $E_{sqrt} =sqrt(-4.E_c^2- E_g^2 +9.E_e^2)$

$E_{sqrt} =6,5963x10^{-14}.J$
From 162,172 could be : $E_{cge} = A_{175}/sqrt(2). l_c$, $E_{sqrt} / E_{cge} = 1,97$ or
for A_{177} sqrt(2). l_c , we have :$E_{sqrt} / E_{cge} = 2,07$,
thaus $E_{cge} = 2.A/sqrt(2). l_c$ or
$E_{cge} = A/(sqrt(2)/2). l_c = A/(sqrt(2)/2). l_c = A/cos45^o. l_c$
so $E_{cge} = A/cos45^o. l_c$

Applications :

1. cosmic radiation CMB
2. Fine structure constant analysis with proton and neutrino

1.cosmic radiation CMB

Function 171 of paper

The relation of length and temperature incites us to examine whether the system works at low temperatures $T.lg = 5,755x10^{-3}$ .m.K . The system seems to work at the Planck temperature as the proton's temperature in a range between 10^{32} .K- 10^{12} .K - why not lower even at temperature than these ?
It is interesting that we can get values near the cosmic irradiation (CMB).

Function 171 of paper
$T.lg = 5,755x10^{-3}.m.K$, this constant is the double the Wien's constant (1893)and it is the same for N=6 .
lg=sqrt(2.π).lc ,
n1/n2=10/12 , N=3 if lg=1mm then T=5,75K
if radiation comes from lc=1mm Then T=2K
The Wien's constant is half and for lg=1mm , T=2,73K in Wien's law
Function 102 in the paper gives the Wien's law for
Wien's constant = (constant102/2).sqrt(2π)

$T = (n_1/n_2)^{-3/2}. N^{-3/2}.1{,}085\times10^{16}.Q/ (\lambda.l_c)^{1/2}$, $\lambda = l_c$, $a = a_p$

for N=1 , n1/n2=10/12 , Q = e
sqrt(2.π) comes from values of length λ=lc=lg/sqrt(2π), hypothesis 5

and 2 comes from 2.lg
the functions 102 and 171 are not the same but they give the same constant for N=1 (102)and N=3 (171)
in function 171
constant171=2.Wien's constant
also the law of Stefan-Boltzman for P/S = $1{,}9\text{x}10^{-3}$.w/m2 , function 166 , gives 13,52K then in function 171 , l=0,42mm

The application of the Boltzmann law presupposes that the sky acts or is equivalent as one black –body since we don't know the origin of the MCB radiation.

if l=lc=0,42mm then lg=sqrt(2π)=1,052mm , the cosmic background radiation (CMB). We get the same results by using 102 function with N=1
The mathematical error of approximation will be in any method sqrt(2π) =N.(n1/n2) =5/2 , with N=3 n1=10,n2=12

Using the law of Stefan-Boltzman , function 102 or 171 for an appropriate length and N we have results in agreement while Wien's law cannot .
Wien's law is a case without gravity but has gravity . Gravity affects to Wien's law and calculations are in disagreement with the law of Stefan - Boltzman
the function 102 also gives the Tplank for lplank without sqrt(2π). The Wien's constant is not valid.

We get the same results by using 102 function with N=1
The same result we have for volume
V= $(3/4).l^3$ in the law of Stefan-Boltzman as a mathematical solution of both function 166 and 171
This give an idea about the shape of the system and what is sqrt(2π).
1.The shape of particle or
2.microcell structure of space
In conclusion all black bodies in nature seems to have n1=10 and n2=12 numbers and gravity is not zero
If that happens the extra dimensions exist around us.

Fine structure constant

All the method of the above paper includes a mathematical extraction of Stefan-Boltzman

(T4)law of irradiation of a black body .

2π.(5meg).c.λplank/h=1.071 (1)
2π.(6meg).c.(le/Na)/h=6.986 (2)
2π.(5meg).c.λplank/h = 2π.(6meg).c.(le/Na)/7.h so (3)

137,3134.(6/7).meg = Na.me , me = mass of electron also , (4)

for proton
Mp:mass of proton , Lp: length of proton
From function 195 of previous paper we have :

$(Na.mp.meg/(2\pi)^{½})^{1/2}.c.\lambda plank=10,0067.h$
$Na.mp = 100.h^2.(2\pi)^{1/2}/meg.c^2.\lambda plank^2$
Na.mp =A.meg and (5)
$A=100.h^2.(2\pi)^{1/2}/meg^2.c^2.\lambda plank^2$ (6)
From function 5 : A_5= 216110,057
And from function 6 : A_6= 215826,3357 , A_5/A_6=1.0013 (7)
Also for electron :

Na.me = B.meg (8)
And $B=137,3134.(6/7)=(6/7).(E1/E2)^2$ (9)
$E1/E2 = (137,3134)^{½}=137^{1/2} = 11,7$ (10)
11,7.(6/7)=10,04 (11)
so B=10.(E1/E2)=(6/7).(1/a) (12)
Na.me = 10.(E1/E2).meg (13)
For proton $Eplank/Emeg = 4,670113 = (1/ap)^{½}$ (14)
Structure constant of proton : ap = 0,04585
$Eplank^2/Emeg^2=21,80995$
This number comes from angular momentum of electron or positron without 2π

$Eplank^2/Emeg^2=Je/h=21,80995$,

so positron ,electron and proton are linked

We need to refer the 194 function of previous paper :

$m_{eg}.l_e^2.N_A^{-2} = M_{Planck}.l_g^2$, charge and length of charge are connected by meg and length of plank
A.ap = 9895,71
and **ap/a=2π or ap=2π.a , a=1/137,035** (15)
An other way to analyse the fine structure constant of electron is :

(6/7).160,1989.(6/7).meg= Na.me (16)
$p.(6/7)^2.5.2^5.meg = Na.me$, with p=1,0012 and $160= 5.2^5$ (17)
that's mean the fine structure constant is :
$1/137.14 = (7/6)/5.\ 2^5$, (18)
6/7 belongs to temperature : $(7/12)/5.\ 2^4$, 12/7 page 9 case 6 of paper .

137,14-137,035 = 0.1

We propose for angular momentum of electron in meg system :

Jemeg=137,035.h/2π + h/10.2π or Jemeg=137.h/2π + 0,14h/2π (19)

(18) function gives the fine structure 1/137.14 , that's mean
energy : $E = 0.14.h.c/2\pi.le = 8.36\text{x}10^{-17}.J = 522.eV/c2$ so
for one level the energy is : E/137 = 3.81eV
also h/10.2π gives energy : E = 0.10.h.c/2π.le = 372,8.eV, E/137 = 2,72.eV

There are relations with sub-cores s,p,d,f
also the 5 forces of the above analysis $5.2^4 = 5x\ 4x4$

I remind you that meg and proton are linked , and these empirical types will give us the potential of spectrum verification .

Proton

Mp:mass of proton , Lp: length of proton

From function 195 of previous paper and function 1 we have :

$(Na.mp.meg/(2\pi)^{½})^{1/2}.c.\lambda plank=10,0067.h$
$2\pi.(5meg).c.\lambda plank=1.071.h$, we have
$(Na.mp.meg/(2\pi)^{½})^{½}.c.\lambda plank/10=2\pi.(5meg).c.\lambda plank$ (20)

arises :

$p.Na.mp = 10^4.\pi 2.(2\pi)^{½}.meg$, $p = 1,1447$ (21)

Function (1) : $2\pi.(5meg).c.\lambda plank/h=1.071$ (22)
With the angular momentum of proton :

$mp.c.Lp = np.h$ and $2\pi.(5meg).c.\lambda plank=h$ (23)
$mp.c.Lp/np = 2\pi.(5meg).c.\lambda plank$ (24)

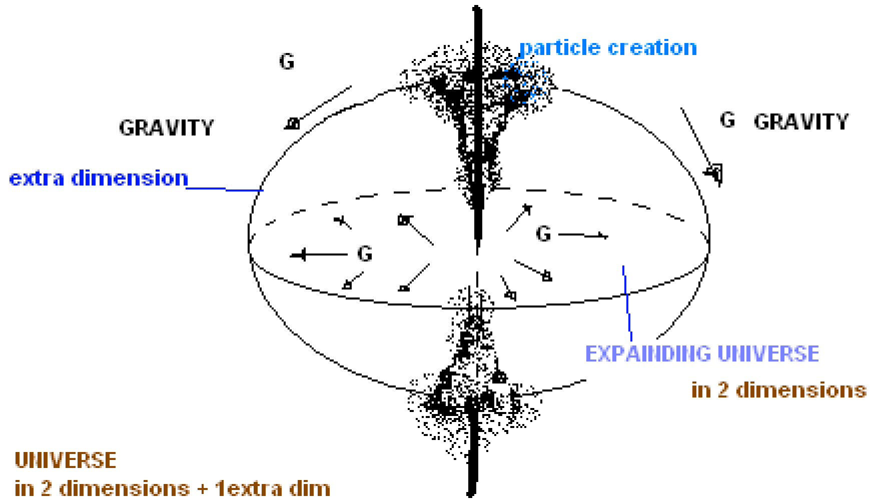
arises : $Lp/np = 10.\pi.meg.\lambda plank/mp = 1.4147$ fermi

for np=1 without 2π (25)
with 2π $Lp/np = 0.225$ fermi (26)
The length in 25 function could arise from a dynamic of meg $c^2/2$
so Lp/np=1fermi (27)
if we use the approximation 1,1447 of 21 function
1.4147 fermi/1,1447 =1,2358 fermi
The same result we have h/(mp.c)=1,321fermi and 1,321/1,1447=1,2358 fermi
These values of proton's length λ=lc : 0,2f , 1f , 1,2f , 1,4f must use in 102 function of temperature to examine if n1/n2 is 10/12 .

$$T = (n_1/n_2)^{-3/2}.\ N^{-3/2}.1,085\times 10^{16}.Q/\ (\lambda.l_c)^{1/2}\ ,\ N = 1,2,3\ ,\ Q = e\ ,\ \lambda = l_c$$

UNIVERSE

We will do a proposition for the universe compatible with the increased dimensions and its extension. One more dimension can be the carrier of the gravitational force in a two-dimensional horizon of the universe and to distribute homogeneously the gravitational forces in the flat expanding universe. Similarly is distributed the MCB radiation. In the Fig bellow is presented a model of the universe resembling the "two dipole model". In an other presentation the universe can be similiarized as two-bubbles



PARTICLE CREATION

In the (15) is seen the relation of the electron - positron and of proton by means of the angular momentum. We can assume that the positron forms a proton as in Fig. bellow:

Radiation γ → 3e- → 3e+

charge=0 charge=0

spin=0 spin=+3/2-3/2=0

(p+,e-):energy(1e-,1e+) + anti-atom:energy(1e-,1e+)

charge=0 charge=0

spin=3/2 ± ½ spin=-1 or -2

baryon number B=1 B=-1

END

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