((In the name of God))

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((Gravity))

Abstract

In this article we want to say about the gravity between the atoms to the new and special way. We know that the atom and the gravity between them are stable by moving the electron on the circuits around the nucleus(from the past articles) and know in this article we want to point to some interesting and new methods (at the new theory) to explain the events happened between the atoms and some materials in the gravity system. For this calculate some equation about the gravity.

From the past articles we know that we can explain many events to system about moving the very small materials around a big matter. And also we considered that when the electron or another classical particle is moving around the nucleus or the central mass further more that it self has a acceleration to out of the circuit an other acceleration is making from the particle and then we put this ,the fundament and origin of many events for explaining(like electromagnetism or…). Now we want use from another property of this theory. When the particle makes a velocity or sometimes an acceleration, exactly it had made a force to out of the atom or any special circuit. Now we ask us that how we can explain this force .The answer is look like the before answer that we said the gravity force has created by the moving and….it means that we go into the system of the particles and again…(of course we should consider that it isn't necessary to consider the stationary or statistics circuit. If we consider the gravity force to this way we can explain many events. We can write it mathematically :(for the electron and the circle circuit)

$$E=\frac{1}{2}mv^2-Gm_{\mathrm{p}}m_{\mathrm{e}}\left(\frac{1}{r^2}-\frac{1}{r^2}\right)=\frac{1}{2}mv^2=\frac{1}{2}(0.5eV)v^2 \qquad (1)$$

Here we inferred that the total energy depended to the (v) and the (a) also depended to the (v). so we can infer that the (E_{tot}) depended to the (a). It is a simply picture of the gravity for calculation that we arrive to the acceleration. Also we saw that the total energy for a system like atom or a particle in depended to the potential energy and it means that almost say that the different electrons in the different circuits have an energy that is the kinematic energy. In the past articles we inferred that when we want to speak about the atom or the light or the other electromagnetism waves we should consider two constants for calculating for example the angular momentum or…. That they are:

The const (ω) → 456603773.9 (cm^2/t) (2)

The const (∂τ) → 0.0031521562 (1/Mev) (3)

For remember should say that the (ω) is the angular velocity for the atom that we can calculate it from the easily calculation that we calculated that (with the ∂τ that is the total torque of the atom) in the past article and we inferred that we should calculate them in almost all of the calculation about the atom or some other things about the classical mechanics for the electromagnetism fields. Here because we said that the gravity between the materials has the essence like this that has come from moving the electron, so we should calculate the gravity field with the (ω) and (∂τ). Also we should pay attention that we must calculate them in the angular momentum system because we took it from the angular momentum of the electrons (for example) around the nucleus and the torque of that. So we write:

$$E = \frac{1}{2}mv^2\frac{\partial\tau}{\partial r} - (F.dr)d\omega = \frac{1}{2}mv^2\frac{\partial\left(\frac{dL}{dt}\right)}{\partial r} - F.\left(\hat{\imath}\frac{dx}{dt} + \hat{\jmath}\frac{dy}{dt} + \hat{k}\frac{dz}{dt}\right) \qquad (4)$$

And we'll infer that: (here we should consider the slight derivative of the L)

$$E = \frac{1}{2}mv^2\frac{\partial^2 L}{\partial r^2} - F.\nabla V \qquad (5)$$

Here we product F to V in the scalar way but it isn't completely right because for example the torque of the electron has direction and we should do vector product about them. So we have:

$$F \times \nabla V = \begin{vmatrix} i & j & k \\ F_x & F_y & F_z \\ V\frac{\partial}{\partial x} & V\frac{\partial}{\partial y} & V\frac{\partial}{\partial z} \end{vmatrix} = \hat{\imath}\left(V\left(\frac{\partial F_y}{\partial z} - \frac{\partial F_z}{\partial y}\right)\right) + \hat{\jmath}\left(V\left(\frac{\partial F_z}{\partial x} - \frac{\partial F_x}{\partial z}\right)\right) +$$

$$\hat{k}\left(V\left(\frac{\partial F_x}{\partial y} - \frac{\partial F_y}{\partial x}\right)\right) \qquad (6)$$

(Here because the force was important for us we should take V constant and take the slight derivative of the force.)

Know we can get calculate the total energy with numbers and scalar way. So we write: (we should consider the constant number of ∂τ to multiple of the L)

$$E = \frac{1}{2}mv^2\partial\tau\frac{\partial(r \times p)}{\partial r} - E_{pot} = \frac{1}{2}mv^2\partial\tau\left(p \times \left(\frac{\partial r}{\partial r}\right) + r \times \left(\frac{\partial p}{\partial r}\right)\right) - E_{pot}$$

$$= \frac{1}{2}mv^2\partial\tau\left(0 + r \times m\frac{\partial}{\partial r}\left(\frac{dr}{dt}\right)\right) - E_{pot}$$

$$= \frac{1}{2}mv^2\partial\tau\left(r \times \frac{m}{\partial t}\right) - E_{pot} \qquad (7)$$

As we see the mass of electron (or m) is changing on the time but it doesn't mean that the mass of that is decreasing or increasing. It means that because there are many particles that are moving in the atom, they are beating so fast to each other and when we consider a part of the atom or society of the electrons the masses of the electrons are exiting or entering in that part and at the all we can say that the mass is changing but not at the little times because we are saying about the ∂t. in the quantum mechanics and in the uncertainty principle this subject proof to other way but here we should consider that there are the statistic electrons circuits and differ to now. Now we write:

$$E = \frac{1}{2}(0.5)(1.2)^2(0.0031521562\,)\left(1\text{ fermi}\,.\frac{\mathrm{m}}{\partial \mathrm{t}}\right) - \omega\mathrm{F} =$$

$$(0.001134776232)\left(10^{-15}.\frac{m}{\partial t}\right) - (456603773.9)\mathrm{F} \qquad (8)$$

Now because we want to take it easy we take the ∂t=1s and take F=ma=$\frac{mv^2}{r}$ and write:

$E = (0.0000000000000000001134776232)(0.5) - (456603773.9)(0.5)(1.2)^2/$

10^{-15}=-328754717208000000000000eV (9)

We saw that there is a big energy in the electron and is negative (to the proton).

Now we can get the gravity force:

$$F = -\nabla E = \left(i\frac{\partial E}{\partial x} + j\frac{\partial E}{\partial y} + k\frac{\partial E}{\partial z}\right) = i\left(F_x\frac{\partial(r)}{\partial x}\right) + j\left(F_y\frac{\partial r}{\partial y}\right) + k\left(F_z\frac{\partial r}{\partial z}\right) \quad (10)$$

Or to not vector way we can write:

$$dE = F.dr \Longrightarrow |F| = \frac{dE}{|dr|} \quad (11)$$

And from this we can calculate the force. And we'll have:

$$\frac{dE}{dr} = \frac{GMm}{r^2} \Rightarrow \int dE = \int GMmr^{-2}dr \Rightarrow E = -\frac{GMm}{r} \quad (12)$$

And we can put the numbers and calculate it in the small size that can make the big size. From this that we can take the gravity force in the big size we can say the reason for many events but we should consider the constants.

Now we want to say that when a pulse of light want to emission to the around place of that and we want to consider it to electromagnetism wave and we want calculate some equation of that to this way we should consider this gravity between the particles. Of course we should consider another ways like the electromagnetism's equations for calculating some equation of that or for example we should consider the $Poynting$ vector or….but here we want to consider some part of the theory of the electromagnetism of the light that depend to the gravity as the title of this article. We know that when we want to talk about the complex of the particle or some materials we can talk about the round position of them and then we extent that on the all of the system with a good statistic. We know that in the classical mechanics we have:

$$T = E_k = \frac{1}{2}mv^2 = \frac{1}{2}mR^2\omega^2 = \frac{1}{2}I\omega^2 \quad (13)$$

And we can write (I) to tensor way because there lots of position for a system that we want to round it so we write the diagonal tensor and we have:

$$I = \begin{vmatrix} I_x & 0 & 0 \\ 0 & I_y & 0 \\ 0 & 0 & I_z \end{vmatrix} \rightarrow (or\ for\ the\ complex\ axises) \begin{vmatrix} I_{xx} & 0 & 0 \\ 0 & I_{yy} & 0 \\ 0 & 0 & I_{zz} \end{vmatrix} \quad (14)$$

Here because the $(I_{xy}, I_{xz}, I_{yx}, I_{yz}, I_{zx}, I_{zy})$were zero we didn't consider them. And we cant write:

$$I = \begin{vmatrix} 0 & 0 & I_{xz} \\ 0 & I_{yy} & 0 \\ I_{zx} & 0 & 0 \end{vmatrix} \quad (15)$$

So we can notice them and take that the equations that we're writing is correct about the first system from first frame and when we want to go to the other frame we should add another number or prim to the letters and we write for example the (I_{xx}) to (I_{xx}') and then calculate the equations for energy or the force. When the (I) is changing for stabling the physics laws (stable of momentum) we should change the (ω) to the other frame likely the (I). so we'll have (ω⟹ω´) and after that we should calculate the equations. Now we want to calculate the gravitational constant between two materials (G):

$$|F| = \frac{Gm_p m_e}{r^2} \Longrightarrow G = \frac{|F|r^2}{m_p m_e} \quad \& \quad F = ma \quad \& \quad \frac{dL}{dt} = \tau = r \times F = r \times ma \quad (16)$$

$$\int dL = \int r \times mdv \Rightarrow mr^2\dot{\theta} = mrv \Rightarrow mr\omega = mv = |p| \quad (17)$$

$$\frac{dp}{dt} = F \Rightarrow m\omega\dot{r} = F \Rightarrow G = \frac{m_e \omega r^2 \dot{r}}{m_p m_e} \Rightarrow G = \frac{\omega r^2 \dot{r}}{m_p} =$$

$$\frac{(456603773.9)(10^{-15})^2\dot{r}}{m_p} \quad (18)$$

$$\dot{r} = \frac{dr}{dt} = v_r \quad \& \quad spin\ of\ electron\ is\ 0.5 \Rightarrow L = 0.5 = mrv_r \Rightarrow v_r = \frac{1}{2mr} \quad (19)$$

$$\dot{r} = \frac{1}{2m_e 10^{-15}} = \frac{1}{2(0.511)10^{-15}} = 978473581213307.24070450097847358 \quad (20)$$

Here we didn't use the ($\dot{r}$) because we didn't enter the time because the period time from the different circuits is different. Know we try this way:

$$G = \frac{|F|r^2}{m_p m_e} = \frac{\alpha r^2}{m_p} = \frac{d\omega}{dt}\frac{r^2}{m_p} \tag{21}$$

$$\int G dt = \int \frac{r^2}{m_p} d\omega \quad (at\ the\ const\ r) \Longrightarrow Gt = \frac{rv}{m_p} \tag{22}$$

$$|L| = mr^2\dot{\theta} = mr^2\omega = mrv \ \ \Rightarrow G = \frac{L}{m_e m_p t} \tag{23}$$

As you saw we arrived to the time and it means that on the different circuits there are there are different times for turning or in the other word the different particles or small materials like electrons on the different circuits have different period times. But all of them at the end will arrive to a unit product.

In the uncertainly principle we say that at the all of the time we cant define the electron's or particle's place on their circuits and we should consider the statistic of for example this place that: is there any electron here or no?(in their special circuits.)so we can see we should add another correctly sentence that correct eq.23 that we should export that sentence from uncertainly principle. In the wavy method we'll have (we know that for a volume):

$$\psi^2 dx = \psi_m^2 \sin^2 \tfrac{n\pi x}{l} x\ cos^2\omega t\ dx \tag{24}$$

That ($\psi^2 dx$) is for calculating the volume and the other statement are for moving the electron. For take the average we should take the ($cos^2\omega t$)=$\frac{1}{2}$ so we'll have:

$$\bar{\psi}^2 = \frac{1}{2}\psi_m^2 \sin^2 \frac{n\pi x}{l} \tag{25}$$

But on the other hand we know that when we want to take the average of a function we should:

$$f(x)_{ave} = \frac{1}{\tau}\int_0^\tau f(x)dx$$

And we'll have in the eq.23 :(here we took the G=f(x) because we want get it for the different circuits

$$G_{ave} = \frac{1}{\tau}\frac{|L_{ave}|}{(m_e m_p)_{ave}} \tag{26}$$

That:

$$(m_e m_p)_{ave} = \frac{\sum_i m_{ei}.m_{pi}}{\sum_i m_{ei} + m_{pi}} \tag{27}$$

So we have:

$$\int_0^\tau f(x)dx = \frac{\sum_i m_{ei} + m_{pi}}{\sum_i m_{ei}.m_{pi}}|L_{ave}| \quad \& \quad |L_{ave}| = |L_{e,ave}| + |L_{p,ave}| \tag{28}$$

That almost we have:

$$|L_{ave}| = \frac{1}{2} + \frac{1}{2} = 1 \quad \textit{because the spin of the electronand proton is}\,\frac{1}{2}$$

But here we didn't calculate these equations to the vector way and if we want to enter the vectors we'll have:

$$\overrightarrow{L_{ave}} = \frac{1}{2} - \frac{1}{2} = 0 \Longrightarrow \int_0^\tau f(x)dx = 0 \tag{29}$$

That it means the (x) is constant or the sum of the (f(x))s are constant or the sum of the f(x)s are zero that it gives us the (G_{ave}=0) but it is wrong answer because we know that the G isn't zero. If we want to say a reason that we can say when we say that (L_{ave}=0) it is possible we said it for a unit of the coordinates like $(i, j, k)$and as we have told about it in this article we can write:

$L_{ave} = (mr^2\dot{\theta})_{ave} = (mr^2\omega)_{ave}$ And when we say (L_{ave}=0)we write:

$$[(L_{ave})_x \ \& \ (L_{ave})_y \ \& \ (L_{ave})_z] = 0 \tag{30}$$

And we write for example:

$$L_{ave} = \begin{vmatrix} i & j & k \\ mr_x^2\omega_x & 0 & 0 \\ 0 & mr_y^2\omega_y & 0 \\ 0 & 0 & mr_z^2\omega_z \end{vmatrix} \quad (diagonal\ matrix)\ \ (tensor) \Rightarrow$$

$$L_{ave} = \begin{vmatrix} I_x\omega_x & 0 & 0 \\ 0 & I_y\omega_y & 0 \\ 0 & 0 & I_z\omega_z \end{vmatrix} \tag{31}$$

Or for the other unit vectors we can use from this method to the other ways and we get an vectorial answer. Now from eq.28 we have:

$$f(x) = \frac{1}{2}\frac{d}{dx}\left(\frac{\sum_i m_{ei}+m_{pi}}{\sum_i m_{ei}.m_{pi}}\right) \tag{32}$$

Know we want to enter the ψ in these equations: (because the f(x) depend to the ψ):

$$\bar{\psi}^2 f(x) = \frac{1}{2}\bar{\psi}^2\frac{d}{dx}\left(\frac{\sum_i m_{ei}+m_{pi}}{\sum_i m_{ei}.m_{pi}}\right) \tag{33}$$

We know that the ($\bar{\psi}^2$) is a correctly sentence. So because we want to take this equation from easily way, we take ($\bar{\psi}^2 f(x) = (f(x))_\psi$) and we have:

$$\left(f(x)\right)_\psi) = \frac{1}{2}\bar{\psi}^2\frac{d}{dx}\left(\frac{\sum_i m_{ei}+m_{pi}}{\sum_i m_{ei}.m_{pi}}\right)$$

And we know that:

$$\left(f(x)\right)_\psi) = \frac{1}{4}\psi_m^2 \sin^2\frac{n\pi x}{l}\frac{d}{dx}\left(\frac{\sum_i m_{ei}+m_{pi}}{\sum_i m_{ei}.m_{pi}}\right) \tag{34}$$

From the Fourier theorem that(x=f(t)) now we take f(x) instead of the f(t) because we have:

$$\int_0^\tau f(x)dx \quad and\ we'll\ have\ \int f(\tau)dx - \int f(0)dx = \int f(\tau)dx \tag{35}$$

And we find f(τ) or f(t) so we write f(x) and write :(because the particles have a period for turning)

$$f(x) = a_0 + a_1 \cos \omega t + a_2 \cos 2\omega t + a_3 \cos 3\omega t + \cdots + a_n \cos n\omega t + \cdots + b_1 \sin \omega t + b_2 \sin 2\omega t + b_3 \sin 3\omega t + \cdots + b_n \sin n\omega t \tag{36}$$

For the particles. We get the a_n and b_n from this method:

$$a_n = \frac{2}{\tau}\int_0^\tau f(x) \cos n\omega t \, dx \tag{37}$$

$$b_n = \frac{2}{\tau}\int_0^\tau f(x) \sin n\omega t \, dx \tag{38}$$

And we have:

$$G_{ave} = \frac{1}{\tau}\int_0^\tau f(x) dx \Longrightarrow G = \frac{1}{\tau}\int \frac{1}{4}\psi_m^2 \sin^2 \frac{n\pi x}{l} d\left(\frac{\sum_i m_{ei} + m_{pi}}{\sum_i m_{ei}.m_{pi}}\right) \tag{39}$$

$$G_{ave} = \frac{1}{\tau}\int a_0 dx + a_1 \cos \omega t \, dx + a_2 \cos 2\omega t \, dx + a_3 \cos 3\omega t \, dx + \cdots + a_n \cos n\omega t \, dx + \cdots + b_1 \sin \omega t \, dx + b_2 \sin 2\omega t \, dx + b_3 \sin 3\omega t \, dx + \cdots + b_n \sin n\omega t \, dx \tag{40}$$

And from this method we can get G or G_{ave} or correctly G in the atom between the particles and nucleus. But we should put numbers in the parameters of these equations. For example we want to calculate these equations for nth circuit or on the nth circuit. In the quantum mechanics we should get the ψ also in the other equations that the original is:

$$\psi = \sqrt{\frac{2}{\pi a^3}} e^{-\left(\frac{r}{a}\right)} \cos \omega t$$

That:

$$a = \frac{h^2 \epsilon_0}{\pi m e^2}$$

But here(in this article) we didn't use from them because we didn't need them.

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