The Onduscular Equations

The suppositions that I make in the papers:

The onduscular equation $\frac{2m}{\hbar^2}(E-U(r))f(r,t)+\frac{R}{r}\frac{\partial^2(f(r,t))}{\partial r^2}=\frac{1}{V^2}\frac{\partial^2 f(r,t)}{\partial t^2}$ (1) is valid in both spherical and cylindrical coordinates it emerges from a combination of Schrodinger which is the first degree atemporal and Klein-Gordon temporal equation of the second degree with parameters R chosen so for a small radius $r_{Bohr,}$ for atomic value to coincide with the Schrodinger equation exactly and predict the evolution of wave function to huge values of r about the galactical distances. The wave function of the Schrodinger equation has the supposition that is null at infinity, is normed, has the dimension of [$L^{-3/2}$], and predicts the probability of the existence of the microparticle in volume dV. Schrodinger's equation is (2):

$\frac{2m}{\hbar^2}(E-U(r))f(r,t)+\frac{\partial^2(f(r,t))}{\partial r^2}=ih\frac{\partial f(r,t)}{\partial t}$ & Klin-Gordon is $\frac{2m}{\hbar^2}f(r,t)+\frac{\partial^2(f(r,t))}{\partial r^2}=\frac{1}{c^2}\frac{\partial^2 f(r,t)}{\partial t^2}$ (3) thus eq (1) for m = 0 is a wave equation with variable parameters and seems to be true. $\frac{R}{r}\frac{\partial^2(f(r,t))}{\partial r^2}=\frac{1}{V^2}\frac{\partial^2 f(r,t)}{\partial t^2}$ (4) but all 3 equations are different also wave equation is not satisfactory $\frac{\partial^2(f(r,t))}{\partial r^2}=\frac{1}{c^2}\frac{\partial^2 f(r,t)}{\partial t^2}$ (5),

$\frac{2m}{\hbar^2}(E-U(r))rf1(r,t)+\frac{R\partial^2(rf1(r,t))}{r\partial r^2}=\frac{\partial^2 rf1(r,t)}{V^2\partial t^2}$ and f1(r,t)= g(r)u(t) thus

$\frac{2m}{\hbar^2}\big(E-U(r)\big)rg(r)u(t)+\frac{R\partial^2\big(rg(r)u(t)\big)}{r\partial r^2}=\frac{\partial^2\big(rg(r)u(t)\big)}{V^2\partial t^2}$

$\frac{2m}{\hbar^2}\big(E-U(r)\big)rg(r)u(t)+u(t)\frac{R\partial^2 rg(r)}{r\partial r^2}=\frac{rg(r)\partial^2 u(t)}{V^2\partial t^2}$ and separating variables

$\frac{2m}{\hbar^2}(E-U(r))+\frac{R}{g(r)r^2}\frac{\partial^2(r\cdot g(r))}{\partial r^2}=\frac{1}{u(t)\cdot V^2}\frac{\partial^2 u(t)}{\partial t^2}$ thus $\frac{1}{u(t)\cdot V^2}\frac{\partial^2 u(t)}{\partial t^2}=\ k^2$ with the solution:

$u(t)=\sinh\,(Vkt)$ (7) $\frac{2m}{\hbar^2}(E-U(r))+\frac{R}{g(r)r^2}\frac{\partial^2(r\cdot g(r))}{\partial r^2}=k^2$

$\frac{2m}{\hbar^2}[(E-U(r))-\frac{\hbar^2}{2m}k^2]\cdot g(r)+\frac{R}{r^2}\frac{\partial^2(r\cdot g(r))}{\partial r^2}=0$ thus

$\frac{2m}{\hbar^2}[(E-U(r))-\frac{h^2}{2m}k^2]\cdot g(r)+\frac{R}{r^2}\frac{\partial^2(r\cdot g(r))}{\partial r^2}=0$ & $u(t)=\sinh\,(Vkt)$ thus we calculate k so should will be for any small r almost equale to Schrodinger $\frac{2m}{\hbar^2}(E-U(r))\cdot g(r)+\frac{1}{r}\frac{\partial^2(r\cdot g(r))}{\partial r^2}=0$ & $u(t)=e^{-\left(\frac{i}{h}\right)Et}$

Thus we have substitute rg(r)u(t) = f(r,t) and going back: $\frac{2m}{\hbar^2}(E-U(r))f(r,t)+\frac{R}{r}\frac{\partial^2(f(r,t))}{\partial r^2}=\frac{1}{V^2}\frac{\partial^2 f(r,t)}{\partial t^2}$

This is the equation for any microparticle that we take for granted we obtain equation (1) also for v = c thus m = 0 we have equation (5)

The effective wave function of onduscular equation has the supposition as null at R (or 2R) is normed, has the dimension of [$L^{-3/2}$], and predicts the probability of the existence of the microparticle in volume dV. Also, a condition of the derivate = R in origin verifies the condition that the speed of interaction has the velocity V whatever will be that. The value of $R = 3.566642397 \cdot 10^{22}$ m is calculated in OndSLP.pdf

OndSLP.pdf (geocities.ws)

As you can see function $f_1(r,t) = rf(r,t) = rg(r)u(t)$ is the Onduscular Wave Function (OWF) multiplied by r denoted f(r,t) in the case of graviton equation and other particles that travel with the speed of light so we call it Effective Onduscular Wave Function or EOWF. The EOWF has the dimension of $[L^{-1/2}]$, and OWF has the dimension of $[L^{-3/2}]$ with separate variables and g(r) has dim of $[L^{-3/2}]$, u(t) is adimensional as in the Schrodinger equation. Both equations Onduscular and Schrodinger have almost the same value of the function that depends on r, g(r) multiplied by an adimensional exponential factor that depends on time t. The relation between f1(r,t) EOWF and f(r,t) OWF is $f_1(r,t) = rf(r,t) = rg(r)u(t)$ thus we calculus EOWF which is easier, and we return to the OWF by dividing by r the function $f_1(r,t) \Rightarrow f(r,t) = f_1(r,t)/r$.

The initial derivate = R, the boundary condition f(R)=0 or f(2R)=0, or another initial condition was determined by dowsing. The suppositions that I make are in the file Supposition.pdf

The Onduscular Wave Function (OWF) is the value of particle into space-time at instant t into spherical, cylindrical, or Cartesian cords specific for every particle in particular: for the graviton is for a spatial wave function $[L^{-3/2}]$ and of the function of graviton f (r,t) is $[L^{-3/2}]$ ...and is related to the probability to find the graviton in the local space from 0 to 2·R (where $R = 3.567 \cdot 10^{22}$ m) these are onduscular wave function concrete value ("valori concrete ale functiei de unda onduscularа" in Romanian language) as you can see the f is bounded function ("marginita") and we can normalize that function. Besides these values 0 to 2·R for the graviton the wave function has improper virtual values ("Valori improprii virtuale") and the function is not bordered in fact for r over 2R the force of attraction change sign, goes to infinity when r->-∞ (repulsion) and extremely high but not ∞ in origin. At the normalization condition that is integral with respect to r and for t fix, $t = t_0$ we have: $4\pi \int_0^{2R} \psi(r,t_0)^2 dr = 1$ where $\psi(r,t)=f(r,t)/r$.

In the graviton equation $f(r,t)= u(t)\cdot g(r)$; where $[L]^{-3/2}$ and the probability to find the graviton into the volume dV is $P(r,t) = |\psi(r,t)^2| dV$ in 3-dimensional space as in Bohm's Quantum Potential. To and from the condition that the velocity of all the below particles, except the electron, is c we recalculate the basis-separated solution and the singular solution of onduscular equation each satisfying a set of four singular conditions. We mention that the below-denoted k_1, k_2, k_3, k_4, k_5 are real constants, which are specific to the particle. We supposed that all the functions are separable into a produced single function by one variable. The theory of everything should describe all of the characteristics of the moving particle into the space coordinate and temporal determination, introducing the Effective Onduscular Wave Function which is the value of particle into the space-time at instant t into spherical, cylindrical, or Cartesian cords:

The duality wave-particle is generated by the fact that all atoms and particles receive energy from stars and are one-time quanta particles and one-time quanta waves of probability and have the definition $p(x,t) = |\psi(x,t)|^2$ as in Bohm's Quantum Potential and between states executes an instant quantum jump from the successive position in space due to the granularity

of time. Also suppose that force-mediating particles of these interactions are electronic neutrinos for gravity which is a Majorana particle with spin quantum number s = 0, photons for light, magnetrons for magnetic forces, and tau neutrino for time which is a Dirac particle with spin quantum number s = -½ ... Space has a special treatment but we bearly say that muon neutrino is the place-mediating particle which is a Dirac particle with spin quantum number s = -½. The other elementary stable particle is the electron, proton, neutron, and audion which are treated as an equation in TOnduscular.pdf;
https://www.geocities.ws/michaelvio/TOnduscular.pdf

The initial derivate = R, the boundary condition f(R)=0 or f(2R)=0, or another initial condition was determined by dowsing.
The flux conservation and continuity equation of the first degree $\frac{\partial p(x,t)}{\partial t}+\frac{\partial(p(x,t)\cdot V(x))}{\partial x}=0$ is known in the literature to see Brian Green's "The Elegant Universe" but the second degree $\frac{\partial^2 P(r,t)}{c^2\partial t^2}-\frac{\partial^2 P(r,t)}{\partial r^2}=0$ and graviton, tau neutrino and muon neutrino but the electron & proton $\frac{\partial^2 P(r,t)}{\partial t^2}+\frac{\partial^2(P(r,t)\cdot V^2)}{\partial r^2}=-\frac{V^2}{R}P(r,t)$ are also dowsing measured.

For the electron equation, we start from the Onduscululaire theory ("onde" and "corpuscle" in French) is referring to an elementary particle with no mass and which are moving with the light speed and acts like wave and particle: photon, graviton, magnetron, particle$_T$, etc…and particle that has mass and a speed smaller than light (atoms nucleus, positron, electron, particle$_M$…). The Effective Wave Function is the value of particle into space-time at instant t into spherical, cylindrical or Cartesian cords specific for every particle in particular: for the graviton is for a spatial wave function $[L]^{-3/2}$ and of the function of graviton f (r,t) is $[L]^{-3/2}$ ...and is related to the probability to find the graviton in the local space from 0 to 2·R (where R = $3.566\cdot10^{22}$ m) these are Effective wave function concrete value ("valori concrete ale functiei de unda Efectiva") as you can see the f is bounded function ("marginita") and we can normalize that function. Besides these values 0 to 2·R for the graviton the wave function has improper virtual values ("valori improprii virtuale") and the function is not bordered in fact for r over 2R the force of attraction change sign, goes to infinity when r->-∞ (repulsion) and extremely high but not ∞ in origin. At the normalization condition that integral with respect to r and for t fix, t = t_0 we have: $4\pi\int_0^{2R}\psi(r,t_0)^2dr=1$ where ψ(r,t)=f(r,t)/r.

In the graviton equation f(r,t)= u(t)·g(r); where $[L]^{-3/2}$ and the probability to find the graviton into the volume dV is P(r,t) = $|\psi(r,t)^2|$dV in 3 dimensional space as in Bohm's Quantum Potential. To and from the condition that the velocity of all the below particles, except the electron, is c we recalculate the basis separated solution and the singular solution of onduscular equation each satisfying a sat of four singular conditions. We mention that the below-denoted k_1, k_2, k_3, k_4, k_5 are real constants, which are specific to the particle. We supposed that all the functions are separable into a produced by single-function of one variable. The theory of everything should describe all of the characteristics of the moving particle into the space coordinate and temporal determination, introducing the Effective Wave Function which is the value of particle into the space-time at instant t into spherical, cylindrical, or Cartesian cords:

1) The Graviton-Equation

Starting from the onduscular equation we will particularize for graviton, tau neutrino, photon, magnetron, and electron into the potential field U(r) depending on the radius. It's not important to have the exact general solution as shown, we need the structure of the general solution of the onduscular equation

$$\frac{\mathrm{R}}{\mathrm{r}}\Delta \mathrm{f}(\mathrm{r},\mathrm{t})=\frac{1}{\mathrm{c}^2}\frac{\partial^2 \mathrm{f}(\mathrm{r},\mathrm{t})}{\partial \mathrm{t}^2} \tag{1}$$

where R= is a constant of distance first we search for the basis of solutions that have separated variables, thereafter we impose the initial conditions for the graviton such as to sort out the singular solution of interest:

A) [f(r,t) = 0 for r=2·R for any t] that can be replaced with g (2·R) = 0;

B) g'(0) = R for r = 0 the initial derivate;

C) and that verifies the condition that the speed of interaction is the velocity of light c.

The above 4 conditions imposed onto the Graviton Effective Wave Function f(r,t) uniquely determine the basis of separated solutions of interest. Condition C) can be expressed employing the divergence operator in general coordinates r and c·t thus obtaining the simple equation div[f(r,c·t)]=1, expanded to

$$\frac{df(r,t)}{dt}=\frac{\partial[u(t)g(r)]}{\partial t}+\frac{\partial[u(t)g(r)]}{\partial r}\cdot\frac{dr}{dt}=c. \tag{2}$$

Since the graviton speed will be "c" regardless of the length of the radius r, which means that $\frac{dr}{dt}=c$ for any r, we obtain that for any r and c·t:

$$g(r)\frac{\partial u(t)}{\partial t}+u(t)\frac{\partial g(r)}{\partial r}\cdot c=c \tag{3}$$

2) The Tau Neutrino-Equation

Starting from the onduscular equation particularized for Tau Neutrino we have:

$$\frac{\mathrm{R}}{\mathrm{r}}\Delta \mathrm{f}(\mathrm{r},\mathrm{t})=\frac{1}{\mathrm{c}^2}\frac{\partial^2 \mathrm{f}(\mathrm{r},\mathrm{t})}{\partial \mathrm{t}^2} \tag{1bis}$$

where R= is a constant distance first we search for the basis of solutions that have separated variables, thereafter we impose the initial conditions for the tau neutrino such as to sort out the singular solution of interest:

A) [f(r,t) = 0 for r = R for any t] that can be replaced with g (R) = 0;

B) g'(0) = R for r = 0 the initial derivate;

C) and that verifies the condition that the speed of interaction is the velocity of light c.

The above 4 conditions imposed onto the Tau Neutrino Effective Wave Function f(r,t) uniquely determine the basis of separated solutions of interest. Condition C) can be expressed employing the divergence operator in general coordinates r and c·t thus obtaining the simple equation div[f(r,c·t)]=1, expanded to

$$\frac{df(r,t)}{dt}=\frac{\partial[u(t)g(r)]}{\partial t}+\frac{\partial[u(t)g(r)]}{\partial r}\cdot\frac{dr}{dt}=c. \tag{2bis}$$

Since the graviton speed will be "c" regardless of the length of the radius r, which means that $\frac{dr}{dt} = c$ for any r, we obtain that for any r and c·t:

$$g(r)\frac{\partial u(t)}{\partial t} + u(t)\frac{\partial g(r)}{\partial r} \cdot c = c \qquad \text{(3bis)}$$

3) The Muon Neutrino-Equation

Starting from the onduscular equation particularized for Muon Neutrino which is a Dirac neutrino with spin quantum number s = -1/2 thus we have:

$$\frac{R_s}{\mathrm{r}}\Delta \mathrm{f(r,t)} = \frac{1}{\mathrm{c}^2}\frac{\partial^2 \mathrm{f(r,t)}}{\partial \mathrm{t}^2} \qquad \text{(1bis)}$$

where Rs= is a constant ~15.25 billion Lightyears distance first we search for the basis of solutions that have separated variables. (probably 15.25 billion lightyears… R*dimension neutron/dim quark thus is 3.566·2·0.87/0.43·10^{25} m=14.42986·10^{25} m=15.25 billion Light Years) thereafter we impose the initial conditions for the muon neutrino such as to sort out the singular solution of interest:

A) [f(r,t) = 0 for r=R_s for any t] that can be replaced with g (R_s) = 0;

B) g'(0) = R for r = 0 the initial derivate;

C) and that verifies the condition that the speed of interaction is the velocity of light c.

The above 4 conditions imposed onto the Muon Neutrino Effective Wave Function f(r,t) uniquely determine the basis of separated solutions of interest. Condition C) can be expressed employing the divergence operator in general coordinates r and c·t thus obtaining the simple equation div[f(r,c·t)]=1, expanded to

$$\frac{df(r,t)}{dt} = \frac{\partial[u(t)g(r)]}{\partial t} + \frac{\partial[u(t)g(r)]}{\partial r} \cdot \frac{dr}{dt} = c. \qquad \text{(2bis)}$$

Since the graviton speed will be "c" regardless of the length of the radius r, which means that $\frac{dr}{dt} = c$ for any r, we obtain that for any r and c·t:

$$g(r)\frac{\partial u(t)}{\partial t} + u(t)\frac{\partial g(r)}{\partial r} \cdot c = c \qquad \text{(3bis)}$$

4) The Photon-Equation

A specific solution of the onduscular equation for the photon where R is a constant distance is

$$\frac{\mathrm{R}}{\mathrm{r}}\Delta \mathrm{H}(\mathrm{r},\theta,\mathrm{z},\mathrm{t}) = \frac{1}{\mathrm{c}^2}\frac{\partial^2 \mathrm{H}(\mathrm{r},\theta,\mathrm{z},\mathrm{t})}{\partial \mathrm{t}^2}\ . \qquad (5)$$

Considering that the photon is invariant of θ (z-axis symmetry) in cylindrical coordinate with z-axis symmetry, we are interested in searching for the separable solutions f(r,z,t) = H_3(r) H_4(z) u(t) with z axial symmetry z-axis, which satisfy the following four singular conditions for the photon

A) [f(r,z,t) = 0 for r=R for any t and z] that can be replaced with H_3(R) = 0;

B) H_3(1/R) = R for r = 1/R the initial value at the limit.

C) and that verifies the condition that the speed of a photon is the velocity of light “c”.

Since $H_4(z) = -(\sin(kz) + \cos(kz))$, the wave pulsation is $k = \nu = \frac{E}{h}$, where E is the photon energy and h is the Planck constant.

Condition C) is referring to the velocity of the photon which is c, the speed of light, irrespective of r and c·t.

Considering that H(r,z,θ,t) is, in fact, f(r,z,t) we have

$$\frac{df(r,z,t)}{dt} = \frac{\partial[u(t)H3(r)H4(z)]}{\partial t} + \frac{\partial[u(t)H3(r)H4(z)]}{\partial r}\cdot\frac{dr}{dt} + \frac{\partial[u(t)H3(r)H4(z)]}{\partial z}\cdot\frac{dz}{dt} = c \tag{6}$$

By dividing with c, we obtain

$$\frac{\partial[u(t)H3(r)H4(z)]}{\partial ct} + \frac{\partial[u(t)H3(r)H4(z)]}{\partial r} + \frac{\partial[u(t)H3(r)H4(z)]}{\partial z}\cdot\frac{dz}{dt}\frac{dt}{dr} = 1 \tag{7}$$

And $$\frac{\partial[u(t)H3(r)H4(z)]}{\partial ct} + \frac{\partial[u(t)H3(r)H4(z)]}{\partial r} + \frac{\partial[u(t)H3(r)H4(z)]}{\partial z}\cdot\frac{dz}{dr} = 1 \tag{8}$$

But $\frac{dz}{dr} = 0$, therefore,

$$\frac{\partial[u(t)H3(r)H4(z)]}{\partial ct} + \frac{\partial[u(t)H3(r)H4(z)]}{\partial r} = 1, \tag{9}$$

Thus $$H4(z)H3(r)\frac{\partial u(t)}{\partial ct} + u(t)H4(z)\frac{\partial[H3(r)]}{\partial r} = 1, \tag{10}$$

where the constant distance R is about $3.566\cdot10^{22}$ m, which is slightly below 4 million light-years, the same value as for the equation’s cases for the graviton, the tau neutrino, the magnetron, and the electron. Only the R_s constant from the quantic space is around (probably 15.25 billion lightyears… R·dimension neutron/dim quark thus is: $2\cdot3.566639512\cdot0.841419/0.43\cdot10^{25}$ m = $14.12253295\cdot10^{25}$ m = 14.928 billion Light Years Thus 2·Rs~14.928 billion Light-years and differs from the constant R for the magnetron, photon, electronic neutrino & tau neutrino. A simple observation towards the star-sky shows that there exists no galaxy larger in diameter than 2R, simply because after that distance occurs the rejection of the star, a circumstance that explains why the universe is accelerating expanding only within R_s radius that is Local Universe.

5) The Magnetron-Equation

A specific solution of the onduscular equation for the photon where R is a constant distance is

$$\frac{R}{r}\Delta H(r,\theta,z,t) = \frac{1}{c^2}\frac{\partial^2 H(r,\theta,z,t)}{\partial t^2} \tag{5bis}$$

Considering that the magnetron is invariant of θ (z axis symmetry) in cylindrical coordinate with z axis symmetry, we are interested in searching for the separable solutions f(r,z,t) = $H_3(r)$ $H_4(z)$ u(t) with z axial symmetry z axis, which satisfy the following four singular conditions for the magnetron;

A) [f(r,z,t) = 0 for r=2R for any t and z] that can be replaced with $H_3(2R) = 0$;

B) $H_3(1/R) = R$ for r = 1/R the initial value at the limit.

C) And that verifies the condition that the speed of a photon is the velocity of light "c"

The function for the z-axis is $H_4(z) = -(\sin(kz) + \cos(kz))$

Considering the magnetron quanta has the same energy as photon energy, h_m but with a higher value as Planck constant $E=h_m \cdot \nu$ were $h_m = 1.79 \cdot 10^{-8}$eV the constant of minimum interaction of the magnetron which is 4347064 greater than Planck constant.

We have the wave pulsation of k·z of the axis of propagation thus $\frac{E}{h_m} = k$ since

$H_4(z) = -(\sin(kz) + \cos(kz))$, the wave pulsation is $k = \nu = \frac{E}{h_m}$, where E is the magnetron energy and h_m is the magnetron quanta of energy (constant of minimum interaction of magnetron).

Also, for the magnetron, we have equations (6)(7)(8)(9)(10).

And the other condition for the equation is referring to the velocity of the magnetron V which is into equation (10).

6) The Electron-Equation

For the electron, we have an equation that ignores the relativistic mass effect, namely

$$2m\frac{E-U(r)}{h}f(r,t) + \frac{R}{r^2}\frac{\partial^2(r \cdot f(r,t))}{\partial r^2} = \frac{1}{V^2}\frac{\partial^2 f(r,t)}{\partial t^2} \qquad (11)$$

Where m, E, and V is the electron mass, energy, and velocity into the potential field U(r),

This equation is an approximation of the Schrodinger equation radius small. That is for ~ Bohr radius there is a linear transformation that for a certain R the equation (1) and r<<R there is a linear transformation that for the change of variable $r = r_{Bohr}\,\rho$ and

$g(r) = h(\rho)\frac{2R - \rho \cdot rb}{2R}$ That equivalent to $\frac{1}{\rho}\frac{d^2}{d\rho^2}\left(\rho h(\rho)\right) + \frac{2m}{h^2}\left(E + \frac{e^2}{\rho} - \frac{l(l+1)h^2}{2m\rho^2}\right)h(\rho)$

Thus the onduscular theory includes all the classical Schrodinger equations and the calculus of the orbital of the atoms with angular dependence which is for general solution for hydrogen.

Thus equation (1) is a Quantum Torsion Field Equation of electric, magnetic, light, and gravitational quantic field for the microscopic world.

We search for the separated solutions $f_{(r,t)}=g(r)u(t)$ of this equation, that satisfies the following four singular conditions

A) g'(0) = R for r = 0 the initial derivate;

B) The boundary condition g(R)=0 and g(rb)=0 where rb is radius Bohr;

C) And that verifies the condition that the velocity of the electron is $V= \frac{\partial f(r,t)}{\partial t}$.

According to Einstein's relativity, the mass is multiplied by a factor of $\sqrt{1-\frac{V^2}{c^2}}$ therefore we have: $2m\frac{E-U(r)}{h}\sqrt{1-\frac{V^2}{c^2}}f(r,t)+\frac{R}{r^2}\frac{\partial^2(r\cdot f(r,t))}{\partial r^2}=\frac{1}{V^2}\frac{\partial^2 f(r,t)}{\partial t^2}$ (12)

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7. Graviton-Equation explicit

I propose a graviton equation starting from the wave equation slightly altered as it is supposed to be a particle without rest mass which moves with the speed of light and confirmed of the experiment at the end of the article and explicated at the bottom. The graviton is electronic neutrino which is a Majorana neutrino with spin quantum number s = 0, so electronic neutrino is his on antiparticle. The electronic neutrino is the graviton and now the reaction of Fermi's theory we have neutron decay into a proton, electron and electronic neutrino: $n \xrightarrow{decay} p+e+\nu$; At the nucleus the reactions are continuous and the transformations are as follows where the abbreviations are: the sign $\hat{|}$ is emission and $\check{|}$ is absorption posit is positron and the brackets are for grouping decay:

$$p+\check{|}\nu \xrightarrow{transf} n+posit+\mu\hat{|} \xrightarrow{decay} (p+e+\nu\hat{|})+posit=p+(e+posit)=p \qquad (24)$$

$$p+\check{|}\tau \xrightarrow{trans} (n+posit+\nu\hat{|}+\mu\hat{|}) \xrightarrow{decay} (p+e+\nu\hat{|})+posit=p+(e+posit)=p \; (25)$$

As you can see from the initial proton in atom nucleus emits a ν neutrino and a μ neutrino absorbs a ν neutrino also a τ neutrino may trigger the reaction and results in the initial proton. The electric field E and the equation of the magnetic field (B) satisfy the wave equation having the expressions:

$$\Delta E(x,y,z,t)=\frac{1}{c^2}\frac{\partial^2 E(x,y,z,t)}{\partial t^2} \qquad (1)$$

$$\Delta B(x,y,z,t)=\frac{1}{c^2}\frac{\partial^2 B(x,y,z,t)}{\partial t^2} \qquad (2)$$

In spherical coordinates the Laplacian for the function $r\cdot h(r)$ (see the specific literature [1]):

$$\Delta h(r,\theta,\phi)=\frac{1}{r}\frac{\partial^2(r\cdot h(r))}{\partial r^2}+\frac{1}{r^2}\left(\frac{1}{sin\theta}\frac{\partial}{\partial\theta}\left(sin\theta\frac{\partial h(r)}{\partial\theta}\right)+\frac{1}{sin^2\theta}\frac{\partial^2 h(r)}{\partial\phi^2}\right) \qquad (3)$$

Spherical symmetry and considering the amplitude is invariance to the rotation of the coordinate system (amplitude does not depend on the angles ϕ and φ) replacing the Laplacian equations in spherical coordinates become:

$$\Delta E(r,t)=\frac{1}{c^2}\frac{\partial^2 E(r,t)}{\partial t^2} \qquad (4)$$

$$\Delta B(r,t)=\frac{1}{c^2}\frac{\partial^2 B(r,t)}{\partial t^2} \qquad (5)$$

And introducing the Effective Wave Function which is the value at instant t into the space-time and spherical cords we demonstrate the equation: $\frac{R}{r}\Delta f(r,t)=\frac{1}{c^2}\frac{\partial^2 f(r,t)}{\partial t^2}$ (6)

At the bottom of the file, we demonstrate that for a small radius a couple of hundred radii Bohr the equation (6) and Schrodinger equation are equivalent and there is a change of variable that transforms between equations.

For the graviton, equation starting from the equations (4), (5) and we assume the hypothesis that $f_{(r,t)}$ is an effective graviton function which is the value at instant t and spherical cords not a probabilistic wave function but proportional with the gravitational potential so we have:

$$\frac{R}{r}\Delta f(r,t) = \frac{1}{c^2}\frac{\partial^2 f(r,t)}{\partial t^2} \tag{6bis}$$

Where R is a fix distance equal to R = $3.566 \cdot 10^{22}$ m, the equation that assuming spherical symmetry, invariance to the rotation of the coordinate system, becomes making a substitution: f(r,t)=g(r)u(t) were f(r,t) is the wave function of the graviton depending on time and space.

In the equation (6) with separated variables f(r,t)=g(r)u(t) we consider that u(t) and g(r) depending on radius r is the gravitational potential and satisfy the equations below:

$$\mathrm{u}(t) \cdot k = \frac{1}{c^2}\frac{d^2u(t)}{dt^2} \tag{7}$$

$$g(r) \cdot k = \frac{R}{r}\frac{d^2g(r)}{dr^2} \tag{8}$$

Solution $f_{(r,t)}$ with separations of variables will be: $f_{(r,t)}=g_{(r)}u_{(t)}$ (9)

Equation (7) has the solution in the form of a hyperbolic type,

Thus: $u(t) = C_1 e^{ck_1 t} + C_2 e^{-ck_1 t}$ (10)

Where k real positive and respectively C_3, C_4 are real constant.

Thus the solution is: $u(t) := \frac{1}{R} + C1 \cdot\ e^{\frac{Rct}{g(0)}}$ see the argument at (19)

Equation (8) can be solved with a computer algebra program, for example, Maple, in Airy is expressed:

$$g(r) = C_1 AiryAi\left(r \cdot \sqrt[-3]{R}\right) + C_2 \cdot AiryBi\left(r \cdot \sqrt[-3]{R}\right) \tag{12}$$

And the Dirichlet conditions are g(R) = 0 for τ neutrino and g(2R) = 0 for electronic neutrino. The second condition for booth particle is g’(0) = R thus minces the initial value of derivation is R. Thus, we have:

$$g_1(r)k_1 = \frac{R}{r}\frac{d^2 g_{1(r)}}{dr^2} \tag{13}$$

$$u(t) := \frac{1}{R} + C1 \cdot\ e^{\frac{Rct}{g(0)}} \tag{14}$$

But the velocity of the graviton is “c” all the time hence so the only clue that remains was the k_2 which depend on (r,t) after we have a structure of it supposing that

$\frac{df(r,t)}{dt} = \frac{\partial[u(t)g1(r)]}{\partial t} + \frac{\partial[u(t)g1(r)]}{\partial r} \cdot \frac{dr}{dt} = c$ and replacing $\frac{dr}{dt} = c$ into the equation So we have $g1(r)\frac{\partial u(t)}{\partial t} + u(t)\frac{\partial g1(r)}{\partial r} \cdot c = c$ with the assumption that

$k_2(r,t) = v(t)h(r)$ it's a variable separation and I put again in the equation with the assumption that differential over time of graviton function is equal to c so we have graphics and the final formula of gravitational field regardless of time f(r,t) which is ψ(r), see the graviton equation file.

Where $\_C_1$ is a constant to be settled from the normed condition in spherical cords: $\int_0^{2R} |f(r,t_0)^2| dV = 1$ where dV is the elementary volume $\_C_1$ a normed constant. Thus : $\int_0^{2R} |f(r,t_0)^2| dV = \_C_1^2 \int_0^{\pi} sin\theta \cdot d\theta \cdot \int_0^{2\pi} dy \int_0^{2R} \frac{r^2\psi(r,t_0)^2}{r^2} dr = \_C_1^2 \cdot 4\pi \int_0^{2R} \psi(r,t_0)^2 dr$ The elementary volume at time t_0 so the condition is: $\_C_1^2 4\pi \int_0^{2R} \psi(r,t_0)^2 dr = 1$.

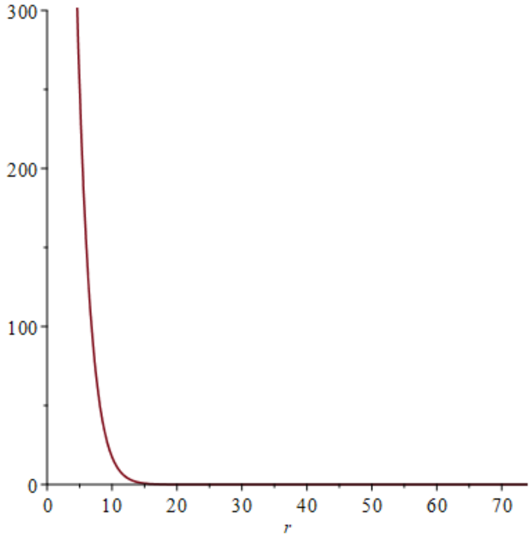
For R=49 from the normalized condition: $\_C_1^2 \cdot 4\pi \int_0^{2R} \psi(r)^2 dr = 1$

Thus _C1=0.01204107697

But the stationary state is for constant t and therefore $t_0=0$ thus Ψ(r) is (15):

$$\psi(r) = \left(\frac{1}{R} + C1\right) \cdot \left(\frac{2 \cdot R \cdot \pi \cdot \mathrm{AiryAi}\left(2R \cdot \left(\frac{1}{R}\right)^{1/3}\right) \cdot \mathrm{AiryBi}\left(\left(\frac{1}{R}\right)^{1/3} \cdot r\right)}{\Gamma\left(2/3\right) \cdot \left(\frac{1}{R}\right)^{1/3} \cdot \left(3^{2/3} \cdot \mathrm{AiryAi}\left(2R \cdot \left(\frac{1}{R}\right)^{1/3}\right) + 3^{1/6} \cdot \mathrm{AiryBi}\left(2R \cdot \left(\frac{1}{R}\right)^{1/3}\right)\right)} - \frac{2 \cdot R \cdot \pi \cdot \mathrm{AiryBi}\left(2R \cdot \left(\frac{1}{R}\right)^{1/3}\right) \cdot \mathrm{AiryAi}\left(\left(\frac{1}{R}\right)^{1/3} \cdot r\right)}{\Gamma\left(2/3\right) \cdot \left(\frac{1}{R}\right)^{1/3} \cdot \left(3^{2/3} \cdot \mathrm{AiryAi}\left(2R \cdot \left(\frac{1}{R}\right)^{1/3}\right) + 3^{1/6} \cdot \mathrm{AiryBi}\left(2R \cdot \left(\frac{1}{R}\right)^{1/3}\right)\right)} \right) \quad (15)$$

Ψ(r) the Gravitational Field plot which didn't vary with time (obviously):



The Graviton-Equation into Newton law explicit:

It’s not important to have the exact general solution as shown; we need the structure of the general solution of the onduscular equation

$$\frac{\mathrm{R}}{\mathrm{r}}\Delta \mathrm{f}(\mathrm{r},\mathrm{t}) = \frac{1}{\mathrm{c}^2}\frac{\partial^2 \mathrm{f}(\mathrm{r},\mathrm{t})}{\partial \mathrm{t}^2}$$

where R is a constant distance of value equal to $3.566 \cdot 10^{22}$ m first we search for the basis of solutions which have separated variables f(r,t)=g(r)u(t) and g(r) depending on radius r is the gravitational potential, thereafter we impose the initial conditions for the graviton such as to sort out the singular solution of interest:

A) [f(r,t) = 0 for r=2·R for any t] that can be replaced with g (2·R) = 0;

B) g’(0) = R for r = 0 the initial derivate;

C) and that verifies the condition that the speed of interaction is the velocity of light c.

The above 3 conditions imposed onto the Graviton Effective Wave Function f(r,t) uniquely determine the basis of separated solutions of interest. Condition D) can be expressed employing the divergence operator in general coordinates r and c·t thus obtaining the simple equation div[f(r,c·t)]=1, expanded to

$$\frac{df(r,t)}{dt} = \frac{\partial[u(t)g(r)]}{\partial t} + \frac{\partial[u(t)g(r)]}{\partial r} \cdot \frac{dr}{dt} = c$$

Since the graviton speed will be “c” regardless of the length of the radius r, which means that $\frac{dr}{dt} = c$ for any r, we obtain that for any r and c·t:

$$g(r)\frac{\partial u(t)}{\partial t} + u(t)\frac{\partial g(r)}{\partial r} \cdot c = c \qquad (16)$$

But the velocity of the graviton is “c” all the time hence so the only clue that remains was the k_2 and supposing that:

$\frac{df(r,t)}{dt} = \frac{\partial[u(t)g(r)]}{\partial t} + \frac{\partial[u(t)g(r)]}{\partial r} \cdot \frac{dr}{dt} = c$ and replacing $\frac{dr}{dt} = c$ into the equation So we have $g(r)\frac{\partial u(t)}{\partial t} + u(t)\frac{\partial g(r)}{\partial r} \cdot c = c$ with the assumption that (17)

For r = 0 equation (15) become: $g(0)\frac{\partial u(t)}{\partial t} + u(t) \cdot R \cdot c = c$ (18)

Thus the solution is: $u(t) \coloneqq \frac{1}{R} + C1 \cdot e^{\frac{Rct}{g(0)}}$ (19)

As you can see the Newtonian force decrease parabolic this is the Newton law explicit, annulated in 2R and change sign, goes to infinity when r->-∞ (repulsion) and extremely high but not ∞ in origin. A better and accurate Newton low is starting from flux equation (20)

The flux equation for electronic neutrino considering and spherical cords symmetry & the speed of graviton equal to light speed is for (electronic neutrino) Flux second-order equation is: $\frac{\partial^2 P(r,t)}{c^2 \partial t^2} - \frac{\partial^2 P(r,t)}{\partial r^2} = 0$ (20)

With initial condition P(2R,t)=0 si diff(P(0,0),r)=-R=$-3.566 \cdot 10^{22}$;
Thus the gravitational force F_G~flux/ surface unit = P(r,t) /$4\pi r^2$:

$$\frac{Fgflux}{4\cdot\pi\cdot r^2}=\frac{(\_c_2\cdot t^2+4\cdot R^2-2\cdot R\cdot r+2\_C3\cdot t)\cdot c^2+(-4R^2+r^2)\_c_2}{8\cdot\pi\cdot r^2\cdot c^2}$$

Considering the initial value of time t = 0, the value of Earth gravitational force is proportional with

$F_{g1}\sim\frac{R^2}{2\cdot\pi}\left(1-\frac{\_c_2}{c^2}\right)\frac{1}{r^2}-\frac{R}{4\cdot\pi}\frac{1}{r}+\frac{\_c_2}{8\pi c^2}$

and with boundary condition P(2R,0) = 0 we have: $\_c_2=\frac{4\cdot c^2}{7}$
The coupling constant is $\alpha_g=\frac{R^2}{2\cdot\pi}\left(1-\frac{\_c_2}{c^2}\right)=\frac{3R^2}{14\cdot\pi}=M\cdot\gamma$
Where “M” is Earth-mass and γ the Newton gravitational constant $\gamma=6.673\cdot10^{-11}$ N·m^2/Kg^2, R a distance R=$3.566\cdot10^{22}$ m and “c” the speed of light.

Thus, the force between two nucleons that change ν neutrino equation:

$$F_{g1}\sim\frac{3R^2}{14\cdot\pi}\cdot\frac{1}{r^2}-\frac{R}{4\cdot\pi}\cdot\frac{1}{r}+\frac{1}{14\cdot\pi}$$

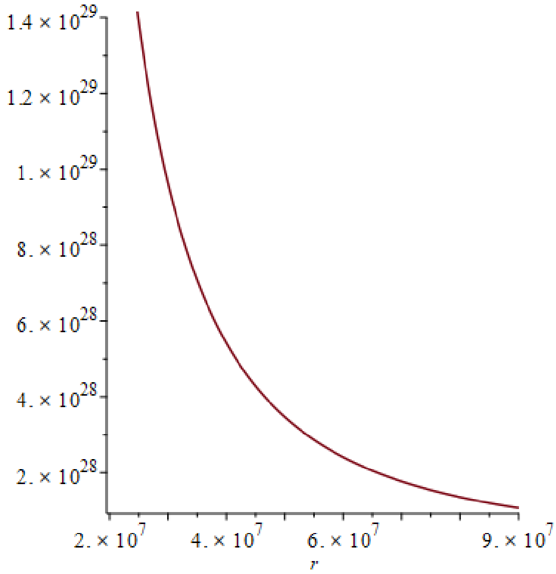
As in the equation into FluxG.mw calculus.
Thus 1 Newton (102g) of trust means the attraction between ~$6.14244\cdot10^{25}$ nucleons and Earth. The quantic gravitational attraction force between nucleons that change electronic neutrino at 2.4fm is Fgq~$1.78\cdot10^{-48}$ Newtons at r_0 according to grav.mw.
Thus, the quantic gravitational forces in Newtons between 2 neutrons at r in meters that change ν neutrino (gravitons) are:

$$\mathrm{F_{g1}}=\frac{1.00762\cdot10^{-77}}{r^2}-3.29565\cdot\frac{10^{-100}}{r}+2.6398\cdot10^{-123}\sim\frac{10^{-77}}{r^2}$$

Thus, the quantic gravitational attraction force in Newton between 2 nucleons at radius r (in meters) may be approximate: Fgq~$10^{-77}/r^2$ (Newton). As you can see at r exceedingly big the order of 2·R, the force is equal to 0. Over that distance of $7.14\cdot10^{22}$ m, there is only rejection, but the model must be rewritten.

For example, we take 2 identical atoms, with the nucleus of unit 1 diameter, located at a distance “d” one from another. The atoms change particles according to the graviton equation, considering that each atom emits particles in space with an equally distributed random distribution. If we consider the effective section of the nucleus of 2 atoms at distance “d” represented by the solid conical angle Ω at distance 2d, the surface will be ~ 4 times smaller. More exactly, α_0 = arctg l / d respectively α_1 = arctg l / (2d), where I have noted the circle arc corresponding to the solid conical angle Ω with α. Extending the two-atom model to a model of three atoms and considering that the distance between atoms is very large relative to the section of the nucleus, one atom will be attracted by the other two atoms that are at distance “d” (considering that the 2 atoms are close - in a solid body) 2 times more than a single body. Extrapolating, an atom is attracted by the other N atoms at the distance “d”, N times stronger than that of a single pair of atoms. We apply the superposition and thus we have M atoms attracted by N atoms (in the first stage atoms of the same type). From the above considerations, we can conclude that two rigid bodies at distance “d” are attracted by a force proportional to the product M · N and inversely proportional to d^2. Taking this into consideration, the way I framed the problem naturally explains Newton's formula. The exact formula can be calculated starting from the premise of quantum gravity theory. The classic graviton forces between two nucleons that change gravitons are as above considering the force of 1 Newton between 102 grams of the substance $6.14244 \cdot 10^{25}$ nucleons and Number of Earth $1.61566 \cdot 10^{51}$ nucleons. So the attraction between 2 nucleons at Earth's radius should be in Newton, around the $\sim 10^{-77}$ N (Newton) in the approximation that all nucleons are rp = 6371000 m.

The plot of gravitational Earth force is from ground level $6.38 \cdot 10^6$ to $9 \cdot 10^7$ m:



Also, there are 3 forces electromagnetic, strong nuclear and generalized gravity force in nature that obey the field equation provided by Quantum Torsion Field. As you can see at r exceedingly small the first fix term of FG1 with sign negative give the strong and weak force and at radius big, order of 2·R, the force is equal to 0. Over that distance of $7.1 \cdot 10^{22}$ m, there is only rejection, but the model must be rewritten.
And for $g_2(2 \cdot R) = 0$ and the first derivate in origin $d(g_2(0))/dr = R$ the initial value of the derivate is R.

$$g_2(r)k_2 = \frac{R}{r}\frac{d^2 g_{2(r)}}{dr^2} \qquad (21)$$

Where $g_1(r)$ is the graviton function depending on radius and k is a constant of integration to be set of the above condition the speed of graviton is the velocity of light “c”.

So this is the wave equation of graviton ψ(r):

$$\psi(r) = \left(\frac{1}{R} + C1\right) \cdot \left(\frac{2 \cdot R \cdot \pi \cdot \mathrm{AiryAi} \cdot \left(2R \cdot \left(\frac{1}{R}\right)^{1/3}\right) \cdot \mathrm{AiryBi}\left(\left(\frac{1}{R}\right)^{1/3} \cdot r\right)}{\Gamma\left(2/3\right) \cdot \left(\frac{1}{R}\right)^{1/3} \cdot \left(3^{2/3} \cdot \mathrm{AiryAi}\left(2R \cdot \left(\frac{1}{R}\right)^{1/3}\right) + 3^{1/6} \cdot \mathrm{AiryBi}\left(2R \cdot \left(\frac{1}{R}\right)^{1/3}\right)\right)} - \frac{2 \cdot R \cdot \pi \cdot \mathrm{AiryBi} \cdot \left(2R \cdot \left(\frac{1}{R}\right)^{1/3}\right) \cdot \mathrm{AiryAi}\left(\left(\frac{1}{R}\right)^{1/3} \cdot r\right)}{\Gamma\left(2/3\right) \cdot \left(\frac{1}{R}\right)^{1/3} \cdot \left(3^{2/3} \cdot \mathrm{AiryAi}\left(2R \cdot \left(\frac{1}{R}\right)^{1/3}\right) + 3^{1/6} \cdot \mathrm{AiryBi}\left(2R \cdot \left(\frac{1}{R}\right)^{1/3}\right)\right)} \right) \tag{23}$$

Where c is the speed of light R space constant (in meter) and k is a constant of normalization and in spherical coordinates.

We can solve equation (6) a partial differential equation with pdsolve $f_{(r,t)}$ in Maple 2016 in Airy function, (but the initial value of derivate can't be set to R and because of that we don't A link to solve differential equation with boundary condition free is Wolfram Alfa with command line g''(r) = r/R· g(r); g(2·R) = 0; g' (0) = R; R>0; at this link: http://www.wolframalpha.com/widgets/view.jsp?id=e602dcdecb1843943960b5197efd3f2a

We have for electron neutrino:

$$g(r) = \frac{3^{5/6} \cdot \Gamma\left(1/3\right) \cdot \left(\mathrm{Ai}\left(\frac{2}{\left(\frac{1}{R}\right)^{2/3}}\right) \cdot \mathrm{Bi}\left(r \cdot \sqrt[3]{\frac{1}{R}}\right) - \mathrm{Bi}\left(\frac{2}{\left(\frac{1}{R}\right)^{2/3}}\right) \cdot \mathrm{Ai}\left(r \cdot \sqrt[3]{\frac{1}{R}}\right) \right)}{\left(\frac{1}{R}\right)^{4/3} \cdot \left(3 \cdot \mathrm{Ai}\left(\frac{2}{\left(\frac{1}{R}\right)^{2/3}}\right) + \sqrt[3]{3} \cdot \mathrm{Bi}\left(\frac{2}{\left(\frac{1}{R}\right)^{2/3}}\right) \right)} \tag{24}$$

we need the structure of the solution and a particular solution of (6) with condition $g_{(2 \cdot R)} = 0$, $g'_{(0)} = R$; and that verifies the condition that the speed of interaction is the velocity of light c so:

$$\frac{df(r,t)}{dt} = \frac{\partial[u(t)g(r)]}{\partial t} + \frac{\partial[u(t)g(r)]}{\partial r} \cdot \frac{dr}{dt} = c \tag{25}$$

$$g(r)\frac{\partial u(t)}{\partial t} + u(t)\frac{\partial g(r)}{\partial r} \cdot c = c \tag{26}$$

$$g(r)\frac{\partial u(t)}{\partial ct} + u(t)\frac{\partial g(r)}{\partial r} = 1 \quad \text{Because:} \frac{dr}{dt} = c \tag{27}$$

So, we need an identity so the graviton speed will be "c" regardless of radius r or into divergence operator of general coordinate r and c·t we have the equation

$$1 = div[\psi(r, c \cdot t)] \tag{28}$$

8. Tau Neutrino equation explicit

The Wave Function of a tau neutrino in local space into the space volume dV at the moment of time t into spherical cords, for τ it is a spatial wave function $[L]^{-3/2}$ and of the function of f(r,t) is $[L]^{-3/2}$ it is related to the probability to find the τ in the local space from 0 to R (where $R = 3.566 \cdot 10^{22}$ m). These are Wave Function concrete values as you can see the f is a bounded function and we can normalize that function. Besides these values, 0 to R for the wave function has virtual values and the function is not bordered. At the normalization condition that is integral upon r and for t fix, $t = t_0$ we have:

$A \cdot 4\pi \int_0^R \psi(r, t_0)^2 dr = 1$ Where dr is the elementary spherical volume and A a normed constant. In the τ equation f(r,t)= u(t) ·g(r), where $[L]^{-3/2}$ and the probability to find the τ into the volume dV is p = $|f(r,t)^2|$dV in 3D space. The divergence operator for general coordinate r and c·t thus we have equation (22): $1 = div[\psi(r, c \cdot t)]$ resulted from the speed of interaction of gravity is the velocity of light “c”. I propose τ equation starting from the wave equation slightly altered as it is supposed to be a particle without rest mass which moves with the speed of light and confirmed of the experiment from the draft article not yet published at UPB Bulletin.

Introducing the Wave Function, which is the value at instant t into the space-time and spherical cords, we popup the equation:

$$\frac{R}{r}\Delta f(r,t) = \frac{1}{c^2}\frac{\partial^2 f(r,t)}{\partial t^2} \tag{1}$$

For τ, equation starting from the equations (4), (5) and we assume the hypothesis that $f_{(r,t)}$ is an effective τ function which is the value at instant t and spherical cords proportional with the temporal potential. So we have (1). Where R is a fixed distance equal to R = $3.566 \cdot 10^{22}$ m approx. 3.77 million Light Year or 1.15 million Parsec. The equation that assuming spherical symmetry, invariance to the rotation of the coordinate system, starts making a substitution: f(r,t)=g(r)u(t), where f(r,t) is the wave function of the τ depending on time and space.

In the equation (1) with separated variables f(r,t)=g(r)u(t), we consider that u(t) and g(r) depending on radius r is the gravitational potential and satisfy the equations below:

$$\mathrm{u}(t) \cdot k_1 = \frac{1}{c^2}\frac{d^2 u(t)}{dt^2} \tag{2}$$

$$g(r) \cdot k_1 = \frac{R}{r}\frac{d^2 g(r)}{dr^2} \tag{3}$$

Solution $f_{(r,t)}$ with separations of variables will be: $f_{(r,t)}=g_{(r)}u_{(t)}$ (4)

Equation (7) has the solution in the form of a hyperbolic type,

Thus: $u(t) = C_1 e^{ck_1 t} + C_2 e^{-ck_1 t}$ (5)

Where k real positive and respectively C_3, C_4 are real constant.

Equation (8) can be solved with a computer algebra program, for example, Maple, in Airy is expressed:

$$g(r) = C_1 AiryAi\left(r \cdot \sqrt[-3]{R}\right) + C_2 \cdot AiryBi\left(r \cdot \sqrt[-3]{R}\right) \tag{7}$$

And the Dirichlet conditions are g(R) = 0 for τ neutrino which is a Dirac neutrino with spin quantum number s = -1/2. The second condition for booth particle is g’(0) = R thus minces the initial value of derivation is R. And so, we have:

g(R) = 0, g’ (0) = R for τ neutrino the equation become:

$$g(r)k_1 = \frac{R}{r}\frac{d^2 g_{(r)}}{dr^2} \tag{8}$$

But the velocity of the τ is “c” all the time hence so the only clue that remains was the k_2 which depend on (r,t) after we have a structure of it supposing that $\frac{df(r,t)}{dt} = \frac{\partial[u(t)g(r)]}{\partial t} + \frac{\partial[u(t)g(r)]}{\partial r} \cdot \frac{dr}{dt} = c$ and replacing $\frac{dr}{dt} = c$ into the equation So we have $g(r)\frac{\partial u(t)}{\partial t} + u(t)\frac{\partial g(r)}{\partial r} \cdot c = c$ with the assumption that (10)

$k_2(r,t) = v(t) \cdot h(r)$ it’s a variable separation and I put again in the equation with the assumption that differential over time of τ function is equal to c so we have graphics and the final formula of gravitational field f(r,t). For g(R) = 0 and the first derivate in origin d(g (0))/dr= R the initial value of the derivate is R.

$$g(r)k_2 = \frac{R}{r}\frac{d^2 g_{(r)}}{dr^2} \tag{11}$$

So, the tau neutrino is the τ and has the function:

$$f(r,t) = g(r) \cdot u(t) \tag{12}$$

Where $g_1(r)$ is the τ function depending on radius and k is a constant of integration to be set of the above condition the speed of τ is the velocity of light c.

A link to solve differential equation with boundary condition free is Wolfram Alfa with command line g''(r) = r/R· g(r); g(R) = 0; g' (0) = R; R>0; at this link: http://www.wolframalpha.com/widgets/view.jsp?id=e602dcdecb1843943960b5197efd3f2a

We have for τ neutrino:

$$g(r)=\frac{3^{5/6}\cdot\Gamma(1/3)\cdot\left(\operatorname{Ai}\left(\frac{1}{\left(\frac{1}{R}\right)^{2/3}}\right)\cdot\operatorname{Bi}\left(r\cdot\sqrt[3]{\frac{1}{R}}\right)-\operatorname{Bi}\left(\frac{1}{\left(\frac{1}{R}\right)^{2/3}}\right)\cdot\operatorname{Ai}\left(r\cdot\sqrt[3]{\frac{1}{R}}\right)\right)}{\left(\frac{1}{R}\right)^{4/3}\cdot\left(3\cdot\operatorname{Ai}\left(\frac{1}{\left(\frac{1}{R}\right)^{2/3}}\right)+\sqrt[3]{3}\cdot\operatorname{Bi}\left(\frac{1}{\left(\frac{1}{R}\right)^{2/3}}\right)\right)} \tag{13}$$

we need the structure of solution and a particular solution of (6) with condition $g_{(R)} = 0$; $g'_{(0)} = R$; that verifies the condition that the speed of interaction is the velocity of light c so:

$$\frac{df(r,t)}{dt}=\frac{\partial[u(t)g(r)]}{\partial t}+\frac{\partial[u(t)g(r)]}{\partial r}\cdot\frac{dr}{dt}=c \tag{14}$$

$$g(r)\frac{\partial u(t)}{\partial t}+u(t)\frac{\partial g(r)}{\partial r}\cdot c=c \tag{15}$$

$$g(r)\frac{\partial u(t)}{\partial ct}+u(t)\frac{\partial g(r)}{\partial r}=1 \quad \text{Because: } \frac{dr}{dt}=c \tag{16}$$

So, we need an identity so the τ speed will be "c" regardless radius r or into divergence operator of general coordinate r and c·t we have the equation

$$1=div[\psi(r,c\cdot t)] \tag{17}$$

And the value of f(r,t) is as below:

$$\Bigg(\frac{1}{R}$$

$$-\Big(3\,c\,\Gamma\left(\tfrac{2}{3}\right)^2\left(-\tfrac{1}{R}\right)^{1/3}\Big(3^{2/3}\,\mathrm{AiryAi}\Big(-\Big($$

$$+\ \mathrm{e}$$

$$-\tfrac{1}{R}\Big)^{1/3}R\Big)+\mathrm{AiryBi}\Big(-\Big(-\tfrac{1}{R}\Big)^{1/3}R\Big)\,3^{1/6}\Big)\,t\Big)\Big/\Big(2\,\pi\Big($$

$$-\mathrm{AiryAi}\Big(-\Big(-\tfrac{1}{R}\Big)^{1/3}R\Big)\,3^{5/6}+\mathrm{AiryBi}\Big(-\Big(-\tfrac{1}{R}\Big)^{1/3}R\Big)\,3^{1/3}\Big)\Big)$$

$$C1\Bigg)\Bigg(\Big(2\,R\,\pi\,\mathrm{AiryBi}\Big(-\Big(-\tfrac{1}{R}\Big)^{1/3}R\Big)\,\mathrm{AiryAi}\Big(-\Big($$

$$-\tfrac{1}{R}\Big)^{1/3}r\Big)\Big)\Big/\Big(\Gamma\Big(\tfrac{2}{3}\Big)\Big(-\tfrac{1}{R}\Big)^{1/3}\Big(3^{2/3}\,\mathrm{AiryAi}\Big($$

$$-\Big(-\tfrac{1}{R}\Big)^{1/3}R\Big)+\mathrm{AiryBi}\Big(-\Big(-\tfrac{1}{R}\Big)^{1/3}R\Big)\,3^{1/6}\Big)\Big)$$

$$-\Big(2\,\mathrm{AiryAi}\Big(-\Big(-\tfrac{1}{R}\Big)^{1/3}R\Big)\,R\,\pi\,\mathrm{AiryBi}\Big(-\Big(-\tfrac{1}{R}\Big)^{1/3}r\Big)\Big)\Big/\Big(\Gamma\Big(\tfrac{2}{3}\Big)\Big(-\tfrac{1}{R}\Big)^{1/3}\Big(3^{2/3}\,\mathrm{AiryAi}\Big(-\Big(-\tfrac{1}{R}\Big)^{1/3}R\Big)+\mathrm{AiryBi}\Big(-\Big(-\tfrac{1}{R}$$

$$^{3}R\Big)\,3^{1/6}\Big)\Big)\Big)$$

Where _C₁ is a constant to be settled from the normed condition in spherical cords: $\_C_1^2 \cdot \int_0^R |f(r,t_0)^2| dV = 1$ where dV is the elementary volume _C₁ a normed constant.
Thus we have:
$\int_0^R |f(r,t_0)^2| dV = \_C_1^2 \int_0^\pi sin\theta \cdot d\theta \cdot \int_0^{2\pi} dy \int_0^R \frac{r^2\psi(r,t_0)^2}{r^2} dr = \_C_1^2 \cdot 4\pi \int_0^R \psi(r,t_0)^2 dr$ The elementary volume at time t_0 so the condition is: $\_C_1^2 \cdot 4\pi \int_0^R \psi(r,t_0)^2 dr = 1$. But the stationary state is for constant t and therefore $t_0=0$ thus Ψ(r) is equation (18):

$$\psi := \left(\frac{1}{R} + e^0 C1\right)\Bigg(\Bigg(2 R \pi \operatorname{AiryBi}\left(-\left(-\frac{1}{R}\right)^{1/3} R\right) \operatorname{AiryAi}\Bigg($$

$$-\left(-\frac{1}{R}\right)^{1/3} r\Bigg)\Bigg) \Big/ \Bigg(\Gamma\left(\frac{2}{3}\right)\left(-\frac{1}{R}\right)^{1/3}\Bigg(3^{2/3} \operatorname{AiryAi}\Bigg($$

$$-\left(-\frac{1}{R}\right)^{1/3} R\Bigg) + \operatorname{AiryBi}\left(-\left(-\frac{1}{R}\right)^{1/3} R\right) 3^{1/6}\Bigg)\Bigg)$$

$$- \left(2 \operatorname{AiryAi}\left(-\left(-\frac{1}{R}\right)^{1/3} R\right) R \pi \operatorname{AiryBi}\left(-\left(-\frac{1}{R}\right)^{1/3} r\right)\right) \Big/ \left(\Gamma\left(\frac{2}{3}\right)\left(-\frac{1}{R}\right)^{1/3}\left(3^{2/3} \operatorname{AiryAi}\left(-\left(-\frac{1}{R}\right)^{1/3} R\right) + \operatorname{AiryBi}\left(-\left(-\frac{1}{R}\right.\right.\right.\right.$$

$$^{3} R\Big) 3^{1/6}\Big)\Big)\Big)$$

For R=39 from the normed condition $\_C_1^2 \cdot 4\pi \int_0^R \psi(r,t)^2 dr = 1$ thus _C₁=0.01636068213 (But for the real value of R you must use a dedicated application, see the file TauNeut.m

The Tau Neutrino-Equation explicit:

It's not important to have the exact general solution as shown; we need the structure of the general solution of the onduscular equation:

$$\frac{\mathrm{R}}{\mathrm{r}}\Delta\mathrm{f}(\mathrm{r},\mathrm{t}) = \frac{1}{\mathrm{c}^2}\frac{\partial^2\mathrm{f}(\mathrm{r},\mathrm{t})}{\partial\mathrm{t}^2}$$

where R= is a constant distance of value equal to $R = 3.566\cdot10^{22}$ m, first we search for the basis of solutions that have separated variables f(r,t)=g(r)u(t) and g(r) depending on radius r is the gravitational potential, thereafter we impose the initial conditions for the τ such as to sort out the singular solution of interest:

A) [f(r,t) = 0 for r=R for any t] that can be replaced with g (R) = 0;
B) g'(0) = R for r = 0 the initial derivate;
C) and that verifies the condition that the speed of interaction is the velocity of light c.

The above 4 conditions imposed onto the Tau Neutrino Effective Wave Function f(r,t) uniquely determine the basis of separated solutions of interest. Condition D) can be expressed employing the divergence operator in general coordinates r and c·t thus obtaining the simple equation div[f(r,c·t)]=1, expanded to

$$\frac{df(r,t)}{dt} = \frac{\partial[u(t)g(r)]}{\partial t} + \frac{\partial[u(t)g(r)]}{\partial r}\cdot\frac{dr}{dt} = c$$

Since the τ speed will be "c" regardless of the length of the radius r, which means that $\frac{dr}{dt} = c$ for any r, we obtain that for any r and c·t:

$$g(r)\frac{\partial u(t)}{\partial t} + u(t)\frac{\partial g(r)}{\partial r}\cdot c = c \qquad (19)$$

The solution of Tau Neutrino equation as in the file TauNeut.mw

As you will see the Temporal dynamics decrease during a long amount of space 3.77mil lightyears (for the plot above it decrease almost to zero of initial value), annulated in R, as a consequence the travel in the local universe between two-point must not exceed this distance, otherwise is very probable to enter a wormhole loop back in time. On Mars, for each second the passing of time will decrease with ΔT= 0.000000001328 sec. We have $T_{\mathrm{Earth}} = T_{\mathrm{Mars}} + \Delta t$ where Δt equal to ~ $\Delta T = 7.5238\cdot10^{9}\cdot 1.765\cdot10^{-19} = 1.328\cdot10^{-9}$ sec.
Thus, per day, the time shift is daily 0.114-0.0784ms between Mars and Earth relative to the distance from the Sun measurable with an atomic clock. The more accurate value is given by the flux equation (see the link equation MarsE.pdf)

For time flow Flux Tau neutrino, we have the second order $\frac{\partial^2 P(r,t)}{c^2\partial t^2} - \frac{\partial^2 P(r,t)}{\partial r^2} = 0$ (20)
With initial condition P(R,t)=0 and diff(P(0,0),r)=-R and spherical cords symmetry
Time flow ~ flux/ surface unit $P(r,t)/4\pi r^2$: (21)

$$Tflow = \frac{(-R^3\cdot r + (c^2\cdot t^2 + \_C3\cdot t + \_C2)R^2 - (c^2\cdot t^2 + r^2)\_C2)}{4\cdot\pi\cdot r^2\cdot R^2}$$

And for t0 = 0 the flux is:

$$TF = \frac{(-R^3\cdot r + (r^2 + \_C2)R^2 - r^2\_C2)}{4\cdot\pi\cdot r^2\cdot R^2}$$

Thus, the perception of time on Mars is slower than on Earth, and considering the initial value of time t = 0.

Thus, each second on Mars time loses ~10^{-9} sec, and time is slow on a Martian per day about 1.328-0.9 ns per second depending on the distance to Sun (249 mil. Km or 206 mil. Km).
For the plot above with parameter: R=39. The τ neutrino is responsible for the temporal process and has the equation $f(r,t) = g(r) \cdot u(t)$ (23)
Where g(r) is the tau neutrino function depending on radius and C2 is a constant of integration to be set of the above condition the speed of τ is the velocity of light c.
Ψ(r) is the Temporal Potential which depends on space distance to the Sun the source of τ neutrino.
The value of C2 = -1.150667733·10^{25} of dim $m^2[L^2]$. The flux increment relatively to the Sun with r in meters is:

$$\Delta TF \sim -9.156722878 \cdot \frac{10^{23}}{r^2} + 2.83852841 \cdot \frac{10^{21}}{r} - 0.07957747152$$

The atom must be excited with a quantity of energy in the UV spectral domain of energy precisely: E = 3.5 eV, with a laser beam on an object. Considering the experimental evidence and the calculatory estimations, we draw the novel and surprising conclusion that beams of continuous coherent light of wavelength 354nm +/-1% with the power of 2.95 – 3.3 W/mol of substance will annulated temporal process exerted for any evolution process.

9. Photon-Equation explicit

For the photon equation we assume the hypothesis that the instant value of light quanta H(r.z,t) is proportional to light intensity and satisfies the equation:

$$\frac{R}{r}\Delta H(r,\theta,z,t) = \frac{1}{c^2}\frac{\partial^2 H(r,\theta,z,t)}{\partial t^2} \qquad (1)$$

Where R is a fixed distance, the same as in the graviton equation. With the initial condition for photon H(z=R) = 0 with z cylindrical symmetry so the initial value is null for a cylindrical surface of a cylinder of radius R, a constant of distance equal to R = 3.567·10^{22} m. In cylindrical coordinates with z-axis symmetry the Laplacian for the photon is considered that be invariant of θ (z-axis symmetry):

$$\Delta H_2(r,z) = \frac{1}{r}\frac{\partial}{\partial r}\left(r\frac{\partial\left(H_2(r,z)\right)}{\partial r}\right) + \frac{\partial^2 H_2(r,z)}{\partial z^2} \qquad (2)$$

$$\frac{R}{r}\left(\frac{1}{r}\frac{\partial}{\partial r}\left(r\frac{\partial\left(H_2(r,z)\right)u(t)}{\partial r}\right) + \frac{\partial^2 H_2(r,z)u(t)}{\partial z^2}\right) = \frac{1}{c^2}\frac{\partial^2 H_2(r,z)u(t)}{\partial t^2} \qquad (3)$$

With the method of separation of variables H_2(r,t) not null $H(r,z,t) = H_2(r,z) \cdot u(t)$ (4)

$$\frac{R}{rH_2(r,z)}\left(\frac{1}{r}\frac{\partial}{\partial r}\left(r\frac{\partial\left(H_2(r,z)\right)u(t)}{\partial r}\right) + \frac{\partial^2 H_2(r,z)u(t)}{\partial z^2}\right) = \frac{1}{c^2}\frac{\partial^2 u(t)}{\partial t^2}$$

Thus we split it into two equations: $\frac{R}{r}\left(\frac{1}{r}\frac{\partial}{\partial r}\left(r\frac{\partial\left(H_2(r,z)\right)}{\partial r}\right) + \frac{\partial^2 H_2(r,z)}{\partial z^2}\right) = b^2 H_2(r,z)$ (5)

And $\frac{1}{c^2}\frac{\partial^2 u(t)}{\partial t^2} = b^2,$ (6)

$$\left(\frac{1}{r}\frac{\partial}{\partial r}\left(r\frac{\partial\left(H_2(r,z)\right)}{\partial r}\right) + \frac{\partial^2 H_2(r,z)}{\partial z^2}\right) - \frac{rb^2 H_2(r,z)}{R} = 0 \qquad (7)$$

With the initial value at the limit H_3(1/R)=R and H_3(R)=0;

$$\left(\frac{1}{r}\frac{\partial}{\partial r}\left(r\frac{\partial\left(H_3(r)H_4(z)\right)}{\partial r}\right) + \frac{\partial^2 H_3(r)H_4(z)}{\partial z^2}\right) - \frac{rb^2 H_3(r)H_4(z)}{R} = 0 \qquad (8)$$

$$\frac{1}{r}\frac{\partial}{\partial r}\left(r\frac{\partial\left(H_3(r)H_4(z)\right)}{\partial r}\right) - \frac{rb^2 H_3(r)H_4(z)}{R} = -\frac{\partial^2 H_3(r)H_4(z)}{\partial z^2} \qquad (9)$$

$$\frac{1}{rH_3(r)}\frac{\partial}{\partial r}\left(r\frac{\partial\left(H_3(r)\right)}{\partial r}\right)-\frac{rb^2}{R}=-\frac{\partial^2 H_4(z)}{H_4(z)\partial z^2}$$

(10)

$$\frac{1}{rH_3(r)}\frac{\partial}{\partial r}\left(r\frac{\partial\left(H_3(r)\right)}{\partial r}\right)-\frac{rb^2}{R}=-\nu^2$$

(11)

Hence $\frac{1}{r}\frac{\partial}{\partial r}\left(r\frac{\partial\left(H_3(r)\right)}{\partial r}\right)+H_3(r)(-\frac{rb^2}{R}+\nu^2)=0$

(12)

$$r\frac{\partial^2\left(H_3(r)\right)}{\partial r^2}+\frac{\partial\left(H_3(r)\right)}{\partial r}-(\frac{r^2b^2}{R}-\nu^2 r)H_3(r)=0$$

(13)

And $\frac{\partial^2 H_4(z)}{\partial z^2}=-\nu^2 H_4(z)$

(14)

With sinusoidal solution $H_4(z)=\sin(\nu z+\varphi)=\sin\left(\frac{E}{h}z+\varphi\right)$ where ν is pozitive constant(15)

Considering the photon energy E=h·ν and we have the wave pulsation of ν·z thus $\frac{E}{h}=\nu$

(16)

So we have: $H_4(z)=\sin\left(\frac{E}{h}z+\varphi\right)$

(17)

with dependence on z-axis: $H_4(z)=\sin\left(\frac{E}{h}z+\varphi\right)$ where h = Planck constant, E photon energy, and φ the phase **with $H_4(z)$ and u(t) a dimensional function**;

The other initial value for equation (7) is referring to the initial velocity of the photon which is c the speed of light all the time hence d = 1· [$L^{-3/2}$]for the dimensional reason we have:

$$\frac{df(r,z,t)}{dt}=\frac{\partial[u(t)H_3(r)H_4(z)]}{\partial t}+\frac{\partial[u(t)H_3(r)H_4(z)]}{\partial r}\cdot\frac{\partial r}{\partial t}+\frac{\partial[u(t)H_3(r)H_4(z)]}{\partial z}\cdot\frac{\partial z}{\partial t}=c\cdot d \qquad (19)$$

$$c\cdot d=\frac{\partial[u(t)H_3(r)H_4(z)]}{\partial ct}+\frac{\partial[u(t)H_3(r)H_4(z)]}{\partial r}+\frac{\partial[u(t)H_3(r)H_4(z)]}{\partial z}\cdot\frac{\partial z}{\partial t} \qquad (20)$$

Divide by “c” both members of the equation:

$$\frac{\partial[u(t)H_3(r)H_4(z)]}{\partial ct}+\frac{\partial[u(t)H_3(r)H_4(z)]}{c\partial r}\cdot\frac{\partial r}{\partial t}+\frac{\partial[u(t)H_3(r)H_4(z)]}{c\partial z}\cdot\frac{\partial z}{\partial r}\frac{\partial r}{\partial t}=d \qquad (21)$$

But $\frac{\partial z}{\partial r}=0$ and $\frac{\partial r}{\partial t}=c$, so: $\frac{\partial[u(t)H_3(r)H_4(z)]}{\partial ct}+\frac{\partial[u(t)H_3(r)H_4(z)]}{\partial r}=d$ (22)

$H_4(z)H_3(r)\frac{\partial u(t)}{\partial ct}+u(t)H_4(z)\frac{\partial[H_3(r)]}{\partial r}=d$ for t = 0 and d = 1· [$L^{-3/2}$] (23)

$$H_3(r)\frac{\partial u(t)}{\partial ct}+u(t)\frac{\partial[H_3(r)]}{\partial r}=\frac{1}{H_4(z)} \qquad (24)$$

Thus as above according to (10-13) we have to solve the equation:

$$r\frac{d^2\left(H_3(r)\right)}{dr^2}+\frac{d\left(H_3(r)\right)}{dr}+(-\frac{r^2b^2}{R}+\left(\frac{E}{h}\right)^2 r)H_3(r)=0 \qquad (25)$$

With the initial value at the limit $H_3(1/R)=R$ and $H_3(R)=0$;

$$\frac{d^2\left(H_3(r)\right)}{dr^2}+\frac{d\left(H_3(r)\right)}{r\cdot dr}+(-\frac{r\cdot b^2}{R}+\left(\frac{E}{h}\right)^2)H_3(r)=0 \qquad (26)$$

The equation $r\,y'' + y' + r\,y = 0$ cannot be solved in terms of elementary functions. Where: $\nu=\frac{E}{h}$

But for R=3.567·10^{22} m and wavelength of 300nm frequency of 10^{15} Hz and r between 1/R < r < R we can neglect them $\frac{rb^2}{R}$ and we have approximately the equation: $\frac{d^2\left(r\cdot H(r)\right)}{dr^2}+\nu^2 H(r)=0$ equation (27);

With boundary condition can be solved with Maple bc:= $H_3(R)=0$, $\frac{d\left(H(\frac{1}{R})\right)}{dr}=R$ Thus the solution is$H_3(r)$ (28)

$$H3(r) := -\big(R\,\mathrm{BesselY}(0,\nu R)\,\mathrm{BesselJ}(0,\nu r)\big) \Big/ \Big(\nu\Big(\mathrm{BesselJ}\Big(1,\frac{\nu}{R}\Big)\mathrm{BesselY}(0,\nu R) - \mathrm{BesselY}\Big(1,\frac{\nu}{R}\Big)\mathrm{BesselJ}(0,\nu R)\Big)\Big) + \big(\mathrm{BesselJ}(0,\nu R)\,R\,\mathrm{BesselY}(0,\nu r)\big) \Big/ \Big(\nu\Big(\mathrm{BesselJ}\Big(1,\frac{\nu}{R}\Big)\mathrm{BesselY}(0,\nu R) - \mathrm{BesselY}\Big(1,\frac{\nu}{R}\Big)\mathrm{BesselJ}(0,\nu R)\Big)\Big)$$

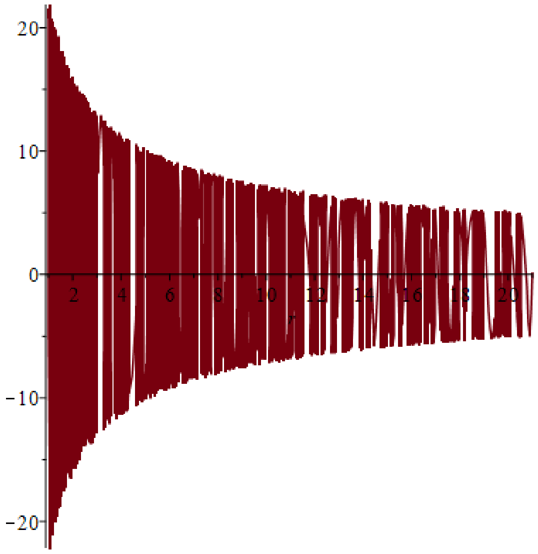
$$H(r,z,t) = -H_3(r)\Big(\sin\big(\frac{E}{h}z + \varphi\big)\Big)u(t) \qquad (29)$$

From (23) we have $H_4(z)H_3(r)\frac{\partial u(t)}{\partial ct} + u(t)H_4(z)\frac{\partial[H_3(r)]}{\partial r} = 1$ (d unitary) where we know all the functions except u(t). Thus equation (24): $H_3(r)\frac{\partial u(t)}{\partial ct} + u(t)\frac{\partial[H_3(r)]}{\partial r} = \frac{1}{H_4(z)}$
Thus, we solve the equation, and we have EOWF hence Photon => we divide $H_3(r)/r$ with d unitary of dimension $[L^{-3/2}]$ the final solution approximative of the photon onduscular wave function $H_3(r)H_4(z)\cdot u(t)/r$ of
dim $[L^{-3/2}]$ with C2 normed constant and _C1 as in file PhotonA.pdf
http://www.geocities.ws/michaelvio/PhotonA.pdf

Thus we solve equation (30). Thus the final solution of the photon is approximative:

$$Photon := \frac{1}{r}\Bigg(\Bigg(-\frac{R\,\mathrm{BesselY}(0,\nu R)\,\mathrm{BesselJ}(0,\nu r)}{\nu\Big(\mathrm{BesselJ}\Big(1,\frac{\nu}{R}\Big)\mathrm{BesselY}(0,\nu R) - \mathrm{BesselY}\Big(1,\frac{\nu}{R}\Big)\mathrm{BesselJ}(0,\nu R)\Big)} + \frac{\mathrm{BesselJ}(0,\nu R)\,R\,\mathrm{BesselY}(0,\nu r)}{\nu\Big(\mathrm{BesselJ}\Big(1,\frac{\nu}{R}\Big)\mathrm{BesselY}(0,\nu R) - \mathrm{BesselY}\Big(1,\frac{\nu}{R}\Big)\mathrm{BesselJ}(0,\nu R)\Big)}\Bigg) C2\sin(\nu z + \varphi)$$

$$\Bigg(\Bigg(\mathrm{e}^{-\frac{c\,\nu\,(\mathrm{BesselY}(0,\nu R)\,\mathrm{BesselJ}(1,\nu r) - \mathrm{BesselJ}(0,\nu R)\,\mathrm{BesselY}(1,\nu r))\,t}{\mathrm{BesselY}(0,\nu R)\,\mathrm{BesselJ}(0,\nu r) - \mathrm{BesselJ}(0,\nu R)\,\mathrm{BesselY}(0,\nu r)}}\Big(\mathrm{BesselJ}\Big(1,\frac{\nu}{R}\Big)\mathrm{BesselY}(0,\nu R) - \mathrm{BesselY}\Big(1,\frac{\nu}{R}\Big)\mathrm{BesselJ}(0,\nu R)\Big)\Bigg) \Big/ \big(\big(\mathrm{BesselY}(0,\nu R)\,\mathrm{BesselJ}(1,\nu r) - \mathrm{BesselJ}(0,\nu R)\,\mathrm{BesselY}(1,\nu r)\big)\,C2\sin(\nu z + \phi)\,R\big) + \_C1\Bigg)\,\mathrm{e}^{\frac{c\,\nu\,(-\mathrm{BesselY}(0,\nu R)\,\mathrm{BesselJ}(1,\nu r) + \mathrm{BesselJ}(0,\nu R)\,\mathrm{BesselY}(1,\nu r))\,t}{-\mathrm{BesselY}(0,\nu R)\,\mathrm{BesselJ}(0,\nu r) + \mathrm{BesselJ}(0,\nu R)\,\mathrm{BesselY}(0,\nu r)}}\Bigg)$$



Plot for R=370 and k=100 with 90 points.

10. Electron-Equation explicit

The Quantum Torsion Field Equation should describe all of the characteristics of the moving particle into the space coordinate and temporal determination, introducing the Effective Wave Function which is the value of particle into the space-time at instant t and spherical cords:

$$2m\frac{E-U(r)}{h^2}f1(r,t)+\frac{R}{r^2}\frac{\partial^2(r\cdot f1(r,t))}{\partial r^2}=\frac{1}{V^2}\frac{\partial^2 f1(r,t)}{\partial t^2} \tag{1}$$

With U(r)= $-e^2/r$ and total orbital angular magnetic moment L^2 we have

$$\frac{2m}{h^2}\left(E+\frac{e^2}{r}+\frac{L^2}{2mr^2}\right)f1(r,t)+\frac{R}{r^2}\frac{\partial^2(r\cdot f1(r,t))}{\partial r^2}=\frac{1}{V^2}\frac{\partial^2 f1(r,t)}{\partial t^2} \tag{2}$$

Or with $E=E_0\cdot E_R$ where Rydberg energy E_R is: $E_R=\frac{me^4}{32\pi^2\varepsilon^2h^2}$ and $L^2=l\cdot(l+1)\cdot\hbar^2$ azimuthal magnetic number l we have:

$$\frac{2m}{h^2}\left(E_0+\frac{8\cdot\pi\cdot\varepsilon}{r}+\frac{l\cdot(l+1)}{r^2}\right)f1(r,t)+\frac{R}{r^2}\frac{\partial^2(r\cdot f1(r,t))}{\partial r^2}=\frac{1}{V^2}\frac{\partial^2 f1(r,t)}{\partial t^2} \tag{3}$$

This equation is approximately the Schrodinger equation for the radius small. That is for ~ Bohr radius there is a linear transformation that for a certain R (a simple combination of constants equal to $R = 3.566\cdot10^{22}$ m) the equation (1) and r<<R there is a linear transformation that for the change of variable $r = r_{Bohr}\,\rho$ and $h(r)=g(\rho)\frac{2R-\rho\cdot rb}{2R}$ That for the interval of r between [0,2R] and ρ >0 for r and ρ small the function f(r) and h(ρ) are equal and the equation equivalent is in the file OndSLP.mw and the change of variable change also the sign of member depending azimuthal quantum number because the minus into variable change (-ρ·rb);

$$\frac{1}{\rho}\frac{d^2}{d\rho^2}(\rho h(\rho))+\frac{2m}{h^2}\left(E+\frac{e^2}{\rho}\right)h(\rho) \tag{4}$$

The Schrodinger without angular magnetic dependence equation (8) is also equation (19.8) in Feynman's article. Thus the QTFT includes all the classical Schrodinger equations and the calculus of the orbital of the atoms with angular dependence which is for the general solution. Thus equation (1) is a Quantum Torsion Field Equation of electric classical Schrodinger equation, magnetic and light (cylindrical cords), and gravitational (spherical cords) quantic field for the microscopic world.

Now starting from (1) we have:

$$\frac{2m}{h^2}\left(E+\frac{e^2}{r}-\frac{L^2}{2mr^2}\right)u(t)g(r)+\frac{u(t)R}{r^2}\frac{\partial^2(r\cdot g(r))}{\partial r^2}=\frac{g(r)}{V^2}\frac{\partial^2 u(t)}{\partial t^2} \text{ Dividing by u(t)·g(r)} \qquad (5)$$

$$\frac{2m}{h^2}\left(E+\frac{e^2}{r}+\frac{L^2}{2mr^2}\right)+\frac{R}{g(r)r^2}\frac{\partial^2(r\cdot g(r))}{\partial r^2}=\frac{1}{u(t)\cdot V^2}\frac{\partial^2 u(t)}{\partial t^2} \qquad (6)$$

Equation with separate variables:

$$\frac{1}{u(t)\cdot V^2}\frac{\partial^2 u(t)}{\partial t^2}= k^2 \text{ With solution: } u(t)=\sinh\,(V\cdot k\cdot t) \qquad (7)$$

$$\frac{2m}{h^2}\left(E+\frac{e^2}{r}+\frac{L^2}{2mr^2}\right)+\frac{R}{g(r)r^2}\frac{\partial^2(r\cdot g(r))}{\partial r^2}=k^2 \qquad (8)$$

$$\frac{2m}{h^2}\left[\left(E+\frac{e^2}{r}+\frac{L^2}{2mr^2}\right)-\frac{h^2}{2m}k^2\right]\cdot g(r)+\frac{R}{r^2}\frac{\partial^2(r\cdot g(r))}{\partial r^2}=0 \qquad (9)$$

Considering electron into the potential field $U(r)=-\frac{e^2}{r}$ and E_R energy $E_{Rydberg}$

$E_R=\frac{me^4}{32\pi^2\varepsilon_0^2h^2}$ = 13,6eV or 2.179·10^{-18} J and $rb=\frac{4\pi\varepsilon_0h^2}{me^2}$ radius r_{Bohr} =0,529Angstrom

$$\frac{2m}{h^2}\left[\left(E+\frac{e^2}{r}+\frac{L^2}{2mr^2}\right)-\frac{h^2}{2m}k^2\right]\cdot g(r)+\frac{R}{r^2}\frac{\partial^2(r\cdot g(r))}{\partial r^2}=0 \qquad (10)$$

And we have the Feynman formula for the electron of a hydrogen atom (8) we change notation:

$$\frac{1}{\rho}\frac{d^2}{d\rho^2}\big(\rho g(\rho)\big)+\frac{2m}{h^2}\left(E+\frac{e^2}{\rho}\right)g(\rho) \qquad (11)$$

We try to demonstrate that (10) and (11) are equivalent for a small radius of the stationary state t_0 in the first stage of resolving the equivalence so R is equal to?

$$R=\frac{L^2\cdot m\cdot e^2+4\cdot\pi\cdot\varepsilon\cdot\hbar^4}{32\cdot\pi^2\cdot\varepsilon^2\cdot\hbar^2}=\frac{rb\cdot\hbar^2+L^2}{8\cdot\pi\cdot\varepsilon\cdot rb\cdot\hbar^2}$$

Thus R is equal to R= 3.566211884·10^{22} m.

Thus equation (1) is for a massless particle that travels with the speed of light is reduced to:

$$\frac{R}{r^2}\frac{\partial^2\big(r\cdot f1(r,t)\big)}{\partial r^2}=\frac{1}{c^2}\frac{\partial^2 f1(r,t)}{\partial t^2} \qquad (12)$$

Thus, we have to notate $f(r,t)=r\cdot f1(r,t)$ the equation (4) from the article “GRAVITATIONAL EXPERIMENT AND EQUATION” that is:

$$\frac{R}{r}\frac{\partial^2\big(f(r,t)\big)}{\partial r^2}=\frac{1}{c^2}\frac{\partial^2 f(r,t)}{\partial t^2} \qquad (13)$$

For electronic neutrino that is for graviton and other massless particles that travel with the speed of light.

$$eq2 := \left(1.135135135\,10^{-20}+6.014324624\,10^{-33}\,r+7.\,10^{-44}\,r^2\right)\cdot g(r)+2\,\frac{d}{dr}\,g(r)+r\left(\frac{d^2}{dr^2}\,g(r)\right);\#\textit{Onduscular equation.} \qquad (14)$$

$$eq3 := \left(1.177720263\,10^{-20}+6.014324627\,10^{-33}\,r+2.145571999\,10^{-75}\,r^2\right)\cdot g(r)+2\,\frac{d}{dr}\,g(r)+r\left(\frac{d^2}{dr^2}\,g(r)\right);\#\textit{Schrodinger scaled aproximation;} \qquad (15)$$

As you can see the difference are insignificant for the radius Bohr order of 10^{-64} m far less than the precision of r_b=5.29241·10^{-11}m. Thus the equation (15) and (14) with the true coefficient value are similar.

The electron equation is in file Electron.mw

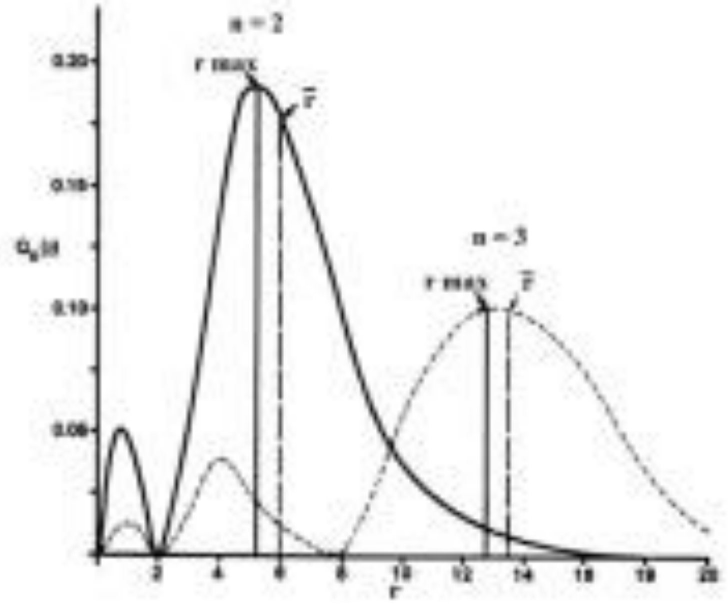
And the second stage is to demonstrate that equation (16) [which is equation (19.46) in Feynman article] and (3) are equivalent for a small radius of stationary state t_0 and so that onduscular theory includes all the classical Schrodinger equation and the calculus of the orbital of the atoms with angular dependence which is f the or general solution for hydrogen.

$$\frac{1}{\rho}\frac{d^2}{d\rho^2}\left(\rho g(\rho)\right)+\frac{2m}{h^2}\left(E+\frac{e^2}{\rho}-\frac{L^2}{2mr^2}\right)g(\rho) \qquad (16)$$

The electron equation as in Schrodinger is

$$f(r)=\_C1\,\mathrm{e}^{-\mathrm{I}\sqrt{E0}\,r}\,\mathrm{KummerM}\left(\frac{4\,\mathrm{I}\,\pi\,\epsilon+\sqrt{E0}}{\sqrt{E0}},2,2\,\mathrm{I}\sqrt{E0}\,r\right)+\_C2\,\mathrm{e}^{-\mathrm{I}\sqrt{E0}\,r}\,\mathrm{KummerU}\left(\frac{4\,\mathrm{I}\,\pi\,\epsilon+\sqrt{E0}}{\sqrt{E0}},2,2\,\mathrm{I}\sqrt{E0}\,r\right)$$

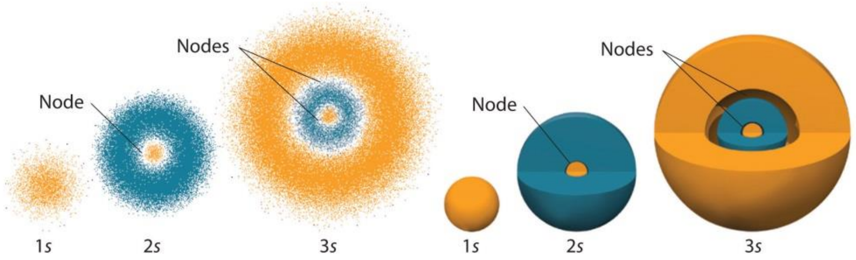
Were _C1 and _C2 are normed constant with the limit condition f (∞) =0.



The electron equation according to onduscular equation, the value depending on the radius, starting from onduscular equation without orbital magnetic moment:

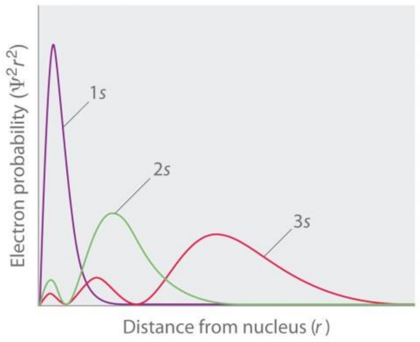
$\frac{2m}{h^2}\left(E_0+\frac{8\cdot\pi\cdot\varepsilon}{r}\right)f(r,t)+\frac{R}{r^2}\frac{\partial^2\left(r\cdot f(r,t)\right)}{\partial r^2}=\frac{1}{V^2}\frac{\partial^2 f(r,t)}{\partial t^2}$ and the solution is solving the equation directly with Maple 19.1 in the file electronPr.mw with time dependency and radial symmetry as below:

$$\left(2\left(\sin\left(\frac{V\sqrt{-2\,E\,m-\_c_1}\;t}{h}\right)\mathit{\_C3}\left(\mathit{\_C1}\operatorname{AiryAi}\left(\frac{\left(-\frac{\_c_1}{h^2\,R}\right)^{1/3}\left(16\,\pi\,\epsilon\,m-r\,\_c_1\right)}{\_c_1}\right)+\mathit{\_C2}\operatorname{AiryBi}\left(\frac{\left(-\frac{\_c_1}{h^2\,R}\right)^{1/3}\left(16\,\pi\,\epsilon\,m-r\,\_c_1\right)}{\_c_1}\right)\right)\left(\operatorname{AiryAi}\left(-\frac{2^{1/3}\left(\frac{E\,m}{h^2\,R}\right)^{1/3}\left(E\,R+8\,\pi\,\epsilon\right)}{E}\right)\operatorname{AiryBi}\left(1,-\frac{8\,2^{1/3}\left(\frac{E\,m}{h^2\,R}\right)^{1/3}\pi\,\epsilon}{E}\right)-\operatorname{AiryBi}\left(-\frac{2^{1/3}\left(\frac{E\,m}{h^2\,R}\right)^{1/3}\left(E\,R+8\,\pi\,\epsilon\right)}{E}\right)\operatorname{AiryAi}\left(1,-\frac{8\,2^{1/3}\left(\frac{E\,m}{h^2\,R}\right)^{1/3}\pi\,\epsilon}{E}\right)\right)\left(\frac{E\,m}{h^2\,R}\right)^{1/3}-\frac{1}{2}\left(2^{2/3}\,R\left(\operatorname{AiryBi}\left(-\frac{2^{1/3}\left(\frac{E\,m}{h^2\,R}\right)^{1/3}\left(E\,r+8\,\pi\,\epsilon\right)}{E}\right)\operatorname{AiryAi}\left(-\frac{2^{1/3}\left(\frac{E\,m}{h^2\,R}\right)^{1/3}\left(E\,R+8\,\pi\,\epsilon\right)}{E}\right)-\operatorname{AiryBi}\left(-\frac{2^{1/3}\left(\frac{E\,m}{h^2\,R}\right)^{1/3}\left(E\,R+8\,\pi\,\epsilon\right)}{E}\right)\operatorname{AiryAi}\left(-\frac{2^{1/3}\left(\frac{E\,m}{h^2\,R}\right)^{1/3}\left(E\,r+8\,\pi\,\epsilon\right)}{E}\right)\right)\right)\right)\right)\Bigg/\left(\left(\frac{E\,m}{h^2\,R}\right)^{1/3}\left(2\operatorname{AiryAi}\left(-\frac{2^{1/3}\left(\frac{E\,m}{h^2\,R}\right)^{1/3}\left(E\,R+8\,\pi\,\epsilon\right)}{E}\right)\operatorname{AiryBi}\left(1,-\frac{8\,2^{1/3}\left(\frac{E\,m}{h^2\,R}\right)^{1/3}\pi\,\epsilon}{E}\right)-2\operatorname{AiryBi}\left(-\frac{2^{1/3}\left(\frac{E\,m}{h^2\,R}\right)^{1/3}\left(E\,R+8\,\pi\,\epsilon\right)}{E}\right)\operatorname{AiryAi}\left(1,-\frac{8\,2^{1/3}\left(\frac{E\,m}{h^2\,R}\right)^{1/3}\pi\,\epsilon}{E}\right)\right)\right)$$

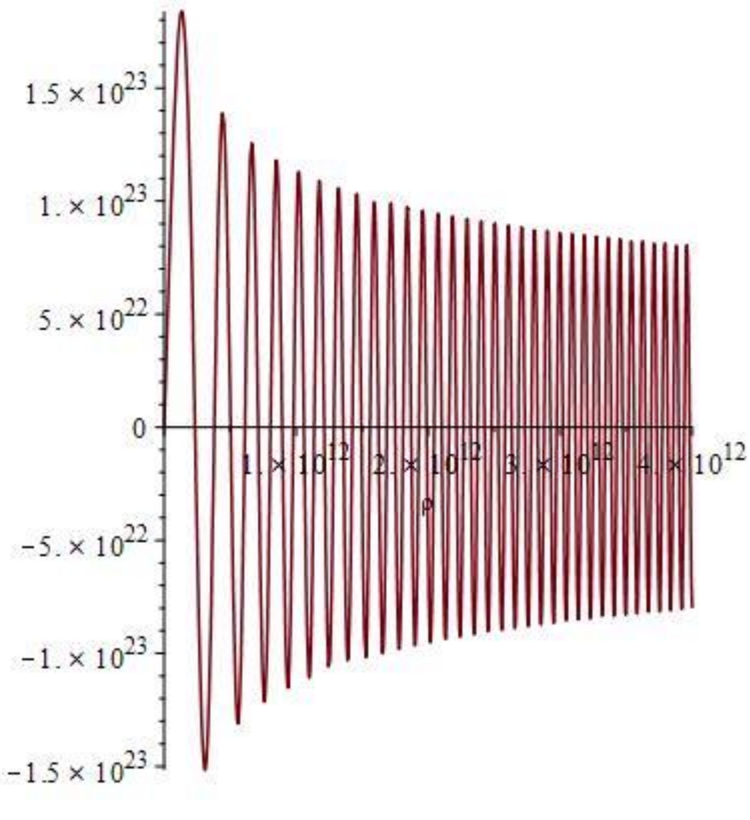


(a) Electron probability

(b) Contour probability



(c) Radial probability



Electron Effective Wave function of 1 S Hydrogen E_{Rydberg} and velocity V=c/137

11. The Proton-Equation

For the proton, we have an equation that ignores the relativistic mass effect, namely.

$$2mn\frac{E-U(r)}{h}f(r,t)+\frac{R}{r^2}\frac{\partial^2\left(r\cdot f(r,t)\right)}{\partial r^2}=\frac{1}{V^2}\frac{\partial^2 f(r,t)}{\partial t^2} \tag{11}$$

Where mn proton mass (nucleon mass), E and V is the energy, and velocity into the potential field U(r),

We search for the separated solutions f $_{(r,\,t)}$ = g(r)u(t) of this equation, that satisfies the following four singular conditions

A) The boundary condition g (2R) =0 and g (rb)=0.

B) And that verifies the condition that the velocity of the proton is V= $\frac{\partial f(r,t)}{\partial t}$.

According to Einstein's relativity, the mass is multiplied by a factor of $\sqrt{1-\frac{V^2}{c^2}}$ therefore we have: $2mn\frac{E-U(r)}{h}\sqrt{1-\frac{V^2}{c^2}}f(r,t)+\frac{R}{r^2}\frac{\partial^2(r\cdot f(r,t))}{\partial r^2}=\frac{1}{V^2}\frac{\partial^2 f(r,t)}{\partial t^2}$ (12)

Thus, condition A) and onduscular equation implies that $u(t)=e^{ck_5t}-e^{-ck_5t}$ (13)

12. The Proton-Equation explicit

The Quantum Torsion Field Equation should describe all the characteristics of the moving particle into the space coordinate and temporal determination, introducing the Effective Wave Function which is the value of particle into the space-time at instant t and spherical cords:

$$2mn\frac{E-U(r)}{h^2}f1(r,t)+\frac{R}{r^2}\frac{\partial^2(r\cdot f1(r,t))}{\partial r^2}=\frac{1}{V^2}\frac{\partial^2 f1(r,t)}{\partial t^2} \qquad (1)$$

With U(r) = e^2/r and total orbital angular magnetic moment L^2 we have

$$\frac{2mn}{h^2}\left(E-\frac{e^2}{r}+\frac{L^2}{2mn\cdot r^2}\right)f1(r,t)+\frac{R}{r^2}\frac{\partial^2(r\cdot f1(r,t))}{\partial r^2}=\frac{1}{V^2}\frac{\partial^2 f1(r,t)}{\partial t^2} \qquad (2)$$

Or with E=E$_0$·E$_R$ where Rydberg energy E$_R$ is: $E_R=\frac{me^4}{32\pi^2\varepsilon^2h^2}$ and L^2=l·(l+1) ·$\hbar^2$ azimuthal magnetic number l we have:

$$\frac{2mn}{h^2}\left(E_0-\frac{8\cdot\pi\cdot\varepsilon}{r}+\frac{l\cdot(l+1)}{r^2}\right)f1(r,t)+\frac{R}{r^2}\frac{\partial^2(r\cdot f1(r,t))}{\partial r^2}=\frac{1}{V^2}\frac{\partial^2 f1(r,t)}{\partial t^2} \qquad (3)$$

And according to onduscular equation, the value depends on time and radius, starting from onduscular equation without orbital magnetic moment:

$\frac{2m}{h^2}\left(E_0-\frac{8\cdot\pi\cdot\varepsilon}{r}\right)f(r,t)+\frac{R}{r^2}\frac{\partial^2(r\cdot f(r,t))}{\partial r^2}=\frac{1}{V^2}\frac{\partial^2 f(r,t)}{\partial t^2}$ and the solution is solving the equation directly with Maple 19.1 in the file Proton.mw with time dependency and radial symmetry as below:

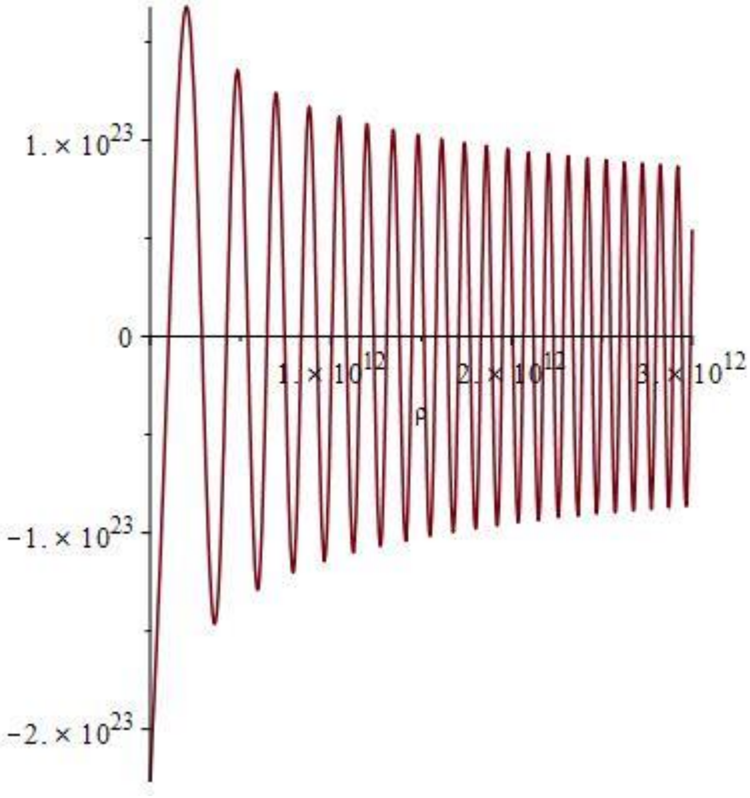
$$
\begin{aligned}
&-\Bigg(-2\Bigg(\_C1\,\mathrm{AiryAi}\Bigg(-\frac{\left(-\frac{\_c_1}{h^2 R}\right)^{1/3}\left(16\,\pi\,\epsilon\,mn+r\,\_c_1\right)}{\_c_1}\Bigg)+\_C2\,\mathrm{AiryBi}\Bigg(\\
&-\frac{\left(-\frac{\_c_1}{h^2 R}\right)^{1/3}\left(16\,\pi\,\epsilon\,mn+r\,\_c_1\right)}{\_c_1}\Bigg)\Bigg)\sin\left(\frac{V\sqrt{-2\,E\,mn-\_c_1}\;t}{h}\right)\Bigg(-\mathrm{AiryBi}\Bigg(\\
&-\frac{2\,2^{1/3}\left(\frac{E\,mn}{h^2 R}\right)^{1/3}\left(E\,R-4\,\pi\,\epsilon\right)}{E}\Bigg)\mathrm{AiryAi}\Bigg(1,\frac{8\,2^{1/3}\left(\frac{E\,mn}{h^2 R}\right)^{1/3}\pi\,\epsilon}{E}\Bigg)+\mathrm{AiryAi}\Bigg(\\
&-\frac{2\,2^{1/3}\left(\frac{E\,mn}{h^2 R}\right)^{1/3}\left(E\,R-4\,\pi\,\epsilon\right)}{E}\Bigg)\mathrm{AiryBi}\Bigg(1,\frac{8\,2^{1/3}\left(\frac{E\,mn}{h^2 R}\right)^{1/3}\pi\,\epsilon}{E}\Bigg)\Bigg)\\
&\_C3\left(\frac{E\,mn}{h^2 R}\right)^{1/3}+\Bigg(\mathrm{AiryAi}\Bigg(-\frac{2\,2^{1/3}\left(\frac{E\,mn}{h^2 R}\right)^{1/3}\left(E\,R-4\,\pi\,\epsilon\right)}{E}\Bigg)\mathrm{AiryBi}\Bigg(\\
&-\frac{2^{1/3}\left(\frac{E\,mn}{h^2 R}\right)^{1/3}\left(E\,r-8\,\pi\,\epsilon\right)}{E}\Bigg)-\mathrm{AiryBi}\Bigg(\\
&-\frac{2\,2^{1/3}\left(\frac{E\,mn}{h^2 R}\right)^{1/3}\left(E\,R-4\,\pi\,\epsilon\right)}{E}\Bigg)\mathrm{AiryAi}\Bigg(-\frac{2^{1/3}\left(\frac{E\,mn}{h^2 R}\right)^{1/3}\left(E\,r-8\,\pi\,\epsilon\right)}{E}\Bigg)\Bigg)\\
&2^{2/3}\,R\Bigg)\Bigg/\Bigg(\left(\frac{E\,mn}{h^2 R}\right)^{1/3}\Bigg(2\,\mathrm{AiryAi}\Bigg(\\
&-\frac{2\,2^{1/3}\left(\frac{E\,mn}{h^2 R}\right)^{1/3}\left(E\,R-4\,\pi\,\epsilon\right)}{E}\Bigg)\mathrm{AiryBi}\Bigg(1,\frac{8\,2^{1/3}\left(\frac{E\,mn}{h^2 R}\right)^{1/3}\pi\,\epsilon}{E}\Bigg)\\
&-2\,\mathrm{AiryBi}\Bigg(-\frac{2\,2^{1/3}\left(\frac{E\,mn}{h^2 R}\right)^{1/3}\left(E\,R-4\,\pi\,\epsilon\right)}{E}\Bigg)\mathrm{AiryAi}\Bigg(1,\\
&\frac{8\,2^{1/3}\left(\frac{E\,mn}{h^2 R}\right)^{1/3}\pi\,\epsilon}{E}\Bigg)\Bigg)\Bigg)
\end{aligned}
$$

13. The thermal particle equation:

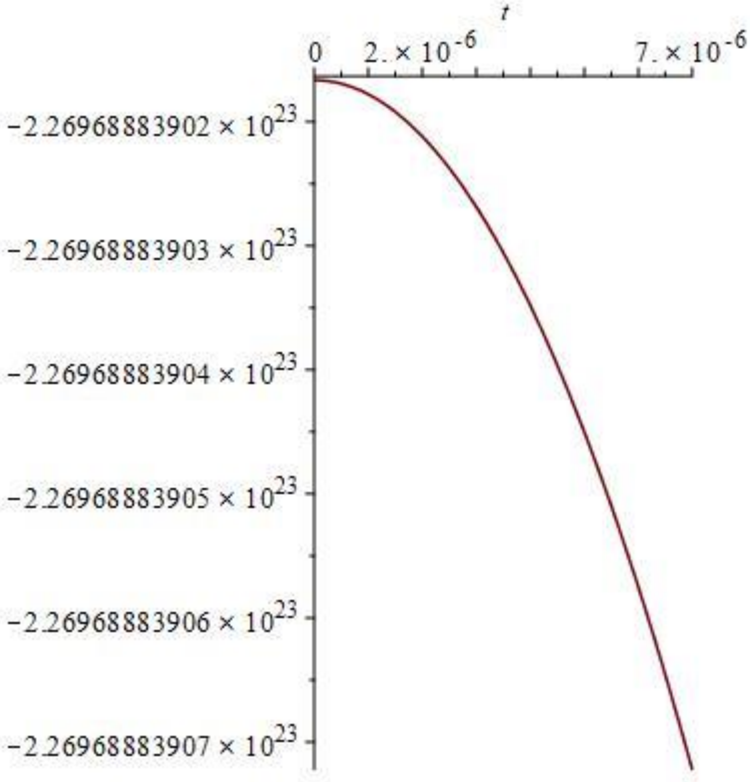
Thermal particle equation on spherical cords with spherical symmetry: $\frac{2m}{h^2}\left(E+\frac{L^2}{2mr^2}\right)\cdot f(r,t)+\frac{\alpha 1R}{r^2}\frac{\partial^2\left(r\cdot f(r,t)\right)}{\partial r^2}=\frac{1}{V^2}\frac{\partial^2 f(r,t)}{\partial t^2}$ with $R=3.566\cdot10^{22}$m length constant and V the speed and m thermal particle mass equal to electron mass + Dirichlet f (2·R, t) =0 condition where α_1 is normed thermal diffusivity equal to $\alpha1=k/(cs\cdot\rho)$ where k is thermal conductivity, cs is specific heat capacity, ρ is density and L^2 total orbital angular magnetic moment, with no angular magnetic moment, the function is obtained from Electron equation by solving the electron equation with substitute R1=R·α1; The solution neglecting orbital magnetic moment L at speed V= c/137, (c speed of light) equal to the 1S orbital of the Hydrogen atom and energy E_R, thus the thermal particle with variable change $f(r,t) = \frac{g(\rho,t)\,(-rb\,\rho + 2R)}{2R}$ as below:

$$g(r,t) := -\left(\left(\left(\left(\frac{\left(2Ema^2c^2 - \_c_2 h^2\right) rb^3}{R a^2 c^2 h^2}\right)^{1/3} \Gamma\left(\frac{2}{3}\right)\left(-\frac{rb^2}{2}+R\right)\cdot\sqrt{\_c_2}\cdot a\,c\left(e^{\sqrt{\_c_2}\,t} - e^{-\sqrt{\_c_2}\,t}\right) - \frac{1}{3}\left(2\,\_c_2\, 3^{1/3} R^2 \pi\, rb \left(e^{\sqrt{\_c_2}\,t}+e^{-\sqrt{\_c_2}\,t}\right)\mathrm{AiryBi}\left(-\left(\frac{\left(2Ema^2c^2 - \_c_2 h^2\right) rb^3}{R a^2 c^2 h^2}\right)^{1/3} rb\right)\right)\right)\mathrm{AiryBi}\left(-\left(\frac{\left(2Ema^2c^2 - \_c_2 h^2\right) rb^3}{R a^2 c^2 h^2}\right)^{1/3}\rho\right)\right) \Big/ \left(\left(\left(\frac{\left(2Ema^2c^2 - \_c_2 h^2\right) rb^3}{R a^2 c^2 h^2}\right)^{1/3}\left(rb\,\rho - 2R\right)\_c_2\,\Gamma\left(\frac{2}{3}\right)\mathrm{AiryBi}\left(-\left(\frac{\left(2Ema^2c^2 - \_c_2 h^2\right) rb^3}{R a^2 c^2 h^2}\right)^{1/3} rb\right)\right)\right)$$

With the plot for t=0 and ρ coords Effective Wave function of Thermal particle with the electron mass, E_{Rydberg}, Velocity α·c



And plot g function with ρ constant



14. Neutron equation:

The neutron equation on spherical cords with spherical symmetry is:
$\frac{2mn}{h^2}\left(E+\frac{L^2}{2mn\cdot r^2}\right)\cdot f(r,t)+\frac{R}{r^2}\frac{\partial^2(r\cdot f(r,t))}{\partial r^2}=\frac{1}{V^2}\frac{\partial^2 f(r,t)}{\partial t^2}$ With R=3.566·10^{22}m length constant and V the speed and m_n the neutron mass with total orbital angular magnetic moment L^2 and Dirichlet f (R, t) =0 conditions. With no angular magnetic moment, the function is:

$$\begin{aligned}
f(r,t) = \Bigg(& \_C3\,\Gamma\left(\frac{2}{3}\right)\left(\frac{mn\,E}{h^2 R}\right)^{1/3}\Bigg(3^{2/3}\,\mathrm{AiryAi}\left(-2^{1/3}\left(\frac{mn\,E}{h^2 R}\right)^{1/3} R\right)+\mathrm{AiryBi}\Bigg(\\
& -2^{1/3}\left(\frac{mn\,E}{h^2 R}\right)^{1/3} R\Bigg)3^{1/6}\Bigg)\left(\_C1\,\mathrm{AiryAi}\left(-\left(-\_c_1\right)^{1/3} r\right)+\_C2\,\mathrm{AiryBi}\Big(-\Big(\right. \\
& \left.-\_c_1\Big)^{1/3} r\Big)\right)\sin\left(\frac{V\sqrt{-\_c_1\,R\,h^2-2\,E\,mn}\;t}{h}\right)-2^{2/3}\,R\,\pi\,\Bigg(\mathrm{AiryBi}\Bigg(\\
& -2^{1/3}\left(\frac{mn\,E}{h^2 R}\right)^{1/3} r\Bigg)\mathrm{AiryAi}\left(-2^{1/3}\left(\frac{mn\,E}{h^2 R}\right)^{1/3} R\right)-\mathrm{AiryAi}\Bigg(\\
& -2^{1/3}\left(\frac{mn\,E}{h^2 R}\right)^{1/3} r\Bigg)\mathrm{AiryBi}\left(-2^{1/3}\left(\frac{mn\,E}{h^2 R}\right)^{1/3} R\right)\Bigg)\Bigg)\Bigg/ \\
& \Bigg(\left(\frac{mn\,E}{h^2 R}\right)^{1/3}\Gamma\left(\frac{2}{3}\right)\Bigg(3^{2/3}\,\mathrm{AiryAi}\left(-2^{1/3}\left(\frac{mn\,E}{h^2 R}\right)^{1/3} R\right)+\mathrm{AiryBi}\Bigg(\\
& -2^{1/3}\left(\frac{mn\,E}{h^2 R}\right)^{1/3} R\Bigg)3^{1/6}\Bigg)\Bigg)
\end{aligned}$$

15. Audion Equation:

The audion particle equation is on spherical cords with spherical symmetry:

$\frac{Rb}{r}\Delta f(r,t) = \frac{1}{V^2}\frac{\partial^2 f(r,t)}{\partial t^2}$ With R=$3.566\cdot 10^{22}$m length constant

With normed propagation constant α, “V” the speed of audion in the environment and the Dirichlet condition is f (R, t) = 0 for constant spatial distance R and f (r, t) the effective wave function of the audion particle depending on radius r and time t. The solution is similar to solving the neutrino equation with substitute R1=R·b

Dec.31