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Article

Quantum Relativity (Impact of Energy with Space-Time 4)

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Abstract

This research answers the knowledge gap regarding the explanation of the quantum jump of the electron. This scientific paper aims to complete Einstein's research regarding general relativity and attempt to link general relativity to quantum laws.

Keywords: Special relativity, General relativity, Bohr atomic model, the fine-structure constant, photon energy, energy of the total photon, Electron wave by de Broglie, Gravity constant, Quantum jump and Cosmic constants of nature.

1. Introduction

This research was created for the purpose of answering questions about physics phenomena that have not been answered. Such as explaining the phenomenon of the quantum jump of the electron and the phenomenon of cumulative entanglement. What happens in the phenomenon of the quantum jump of the electron is that when we give the electron energy, this energy causes the electron to move from the energy level that it occupies to the higher energy level without crossing the distance between the two orbits,

which leads to the occurrence of the phenomenon of the quantum jump of the electron.[1] (Svidzinsky et al., 2014)

The role of this scientific paper is to provide a scientific explanation of how the quantum leap occurs without crossing the distance between the orbits. The theory of quantum entanglement is a connection between two quantum entangled particles. If one particle is observed, the other particle is affected by it at the same moment. This is what Einstein objected to; because when the electron traveled this distance in the same period of time, t

his would lead to the existence of a speed faster than the speed of light. Einstein proved it in special relativity. The maximum speed in the universe is the speed of light. Therefore, the phenomenon of quantum entanglement does not agree with Einstein's laws. After the validity of quantum laws was proven. There has become a conflict between the laws of relativity that apply to the universe and the quantum laws that apply to atoms. This scientific paper aims to resolve this conflict between the laws of relativity and quantum laws. By establishing a law derived from the laws of relativity to apply to quantum laws. (Equation number 1)

This law in equation 1 is known as quantum relativity because it links the laws of relativity and quantum theory. This law is derived from general relativity. The law works to explain the phenomenon of the quantum leap and the phenomenon of quantum entanglement, as it explains that when energy is given to the atom, the atom does not gain energy, but rather space-time gains that energy. We will discuss the interpretation of this theory in detail later.

The goal of this scientific research is to answer the explanation of the phenomenon of quantum leap and quantum entanglement and to add some modifications in the Bohr model.

2. Equations

These laws want to explain the results of the final derivation process of this research and what this research wants to prove.

To explain the motion of an electron in the first level, we must consider that the orbital angular momentum is not equal to zero, so it must be considered to represent the principal quantum number, such as in this case.

$$L_l = \sqrt{l(l+1\,)} \times \hbar$$
$$L_l^2 = l(l+1\,) \times \hbar^2$$

L_l $(The\ orbital\ angular\ momentum)$

$$L_D = \sqrt{((n)^2 - \ n_D)} \times \hbar$$
$$L_D^2 = ((n)^2 \ - \ n_D) \times \hbar^2$$

n is the principal quantum number

$$\mu_L = -\frac{e \times L}{2m_e}$$

$\mu_L (Electron\ magnetic\ moment)$

$$(\,n_D\,) = \frac{(n)^2 \ - \ ((l)^2 + l\,)}{\left(\frac{(\boldsymbol{n}\,) - \,l}{(\boldsymbol{n}\,) - \,l}\right)}$$

It is similar to Niels Bohr's equation for particles, so the laws of particles and waves apply to it.

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi \times \left(h_{(p)}\right)^4}{(\lambda\ nm)^4 \times (e)^4} \frac{G}{(\Delta E_n)^4} T_{\mu\nu}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^6 \times 4 \times \left(m_p\right)^4}{(\lambda\ nm)^5 \times (\mu_0 \times \varepsilon_0)^7 \times (e)^5} \frac{\left(\,t_{(p)}\right)^6}{(\Delta E_n)^5} T_{\mu\nu} \quad (1)$$

$$(G)^3 = \frac{(2\pi)^4 \times 4 \times C^{15}}{(\lambda\ nm \times e)^3 \times 8\pi} \frac{\left(l_{(p)} \times t_{(p)}\right)^3}{(\Delta E_n)^3}$$

$$(G)^2 = \frac{1}{(\,\mu_0 \times \varepsilon_0)^5} \left(\frac{2\pi \times l_{(p)} \times t_{(p)}}{\Delta E_n \times \lambda\ nm \times e}\right)^2$$

Where $G_{\mu\nu}$ represents the Einstein tensor, h_p is the Planck constant, G is the universal gravitational constant, $T_{\mu\nu}$ is the energy-momentum tensor, $\lambda\ nm$ is the wavelength is (nm), ΔE_n is the photon energy is in electron volt, ε_0 Vacuum permittivity, μ_0 Vacuum permeability.

$$\left(\boldsymbol{i\hbar\gamma^\mu\partial_\mu\psi}\right)^4 \left(\boldsymbol{G_{\mu\nu} + \Lambda g_{\mu\nu}}\right) = \frac{\boldsymbol{8\pi(E)^4}}{\boldsymbol{1}} \frac{\boldsymbol{G \times (\psi)^4}}{\left(\boldsymbol{v_p}\right)^8} \boldsymbol{T_{\mu\nu}} \quad (2)$$

$\boldsymbol{E = m \times C^2}$

$$\left(i\hbar\gamma^\mu\partial_\mu\psi\right)^4 (G_{\mu\nu} + \Lambda g_{\mu\nu}) = \frac{(2\pi)^6 \times \ 4(\hbar)^8 \times (k)^4}{(\mu_0 \times \varepsilon_0)^2 \times (\lambda\ nm \times e)^5 \times (\alpha)^4} \frac{\left(\,l_{(p)}\right)^2 (\psi)^4}{(\Delta E_n)^5} T_{\mu\nu}$$

$$\mathbf{k} = \frac{\boldsymbol{2\pi}}{\boldsymbol{\lambda}} = \frac{(\boldsymbol{n}\,)}{\boldsymbol{r_n}}$$

Where k represents the wave vector.

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^2 \times 4}{\lambda\ nm \times e} \frac{\left(\,l_{(p)}\right)^2}{\Delta E_n} T_{\mu\nu} \quad (3)$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^4 \times 4 \times \left(m_p\right)^2}{(\lambda\ nm \times e)^3 \times \left(\mu_0 \times \varepsilon_0\right)^3} \frac{\left(l_{(p)} \times t_{(p)}\right)^2}{(\Delta E_n)^3} T_{\mu\nu}$$

Where e represents the electron charge, $t_{(p)}$ is the Planck time, $l_{(p)}$ is the Planck length, m_p is the Planck mass. This law explains the final result of the derivation. This law proves the creation of a relationship that links the photon energy and curvature of space-time.c

$$(G)^2 = \frac{(\hbar)^2}{(\,\mu_0 \times \varepsilon_0)^5 \times \left(\,E_p\right)^4} \quad (4)$$

$$\Delta E_n = \frac{h_p}{\sqrt{\mu_0 \times \varepsilon_0} \times \lambda\ nm \times e} = \frac{h_p \times v_p}{\lambda\ nm \times e} = \frac{h_p \times v_g}{\lambda\ nm \times e}$$

Where $\boldsymbol{E_p}$ represents the Planck energy, $\boldsymbol{v_g}$ is the group Velocity, $\hbar$ is the reduced Planck constant.

$$C = \frac{n \times v}{\alpha \times Z} \quad (5)$$

$$\boldsymbol{E = m \times C^2}$$

$$E_t = E \times \alpha \times Z$$

$$E_t = E_n \times n$$

The precise structure constant links the speed of the electron to the speed of light through this law.

Likewise, it affects energy in relativity and makes it the total energy of the photon.

$$\boldsymbol{E = \frac{n^2 \times h_{(a)}^2 \times 2KE}{(Z)^2} + n \times P \times \frac{\omega}{k \times \alpha \times Z}} \qquad (6)$$

$$\boldsymbol{E = \frac{n^2 \times h_{(a)}^2 \times 2KE}{(Z)^2} + n \times P \times \frac{v_p}{\alpha \times Z}}$$

$$\boldsymbol{E = \frac{n^2 \times h_{(a)}^2 \times 2KE}{(Z)^2} + n \times P \times \frac{v_g}{\alpha \times Z}}$$

$$\boldsymbol{p = m \times v}$$

$$\boldsymbol{h_{(a)} = \frac{1}{\alpha} = \frac{C \times Z}{n \times v}}$$

$$E = m \times C^2 + P \times C$$

$$\boldsymbol{p = m \times C}$$

$$E_{sqr} = m \times (v_p)^2 + p \times v_p$$

$$E_{sqr} = m \times (v_g)^2 + p \times v_g$$

$$E_{sqr} = E + E_{re}$$

Where E represents the energy in special relativity, $\boldsymbol{E_{sqr}}$ *is the Special quantum relativity*, $\boldsymbol{E_{re}}$ is the Released energy, h(a) is the atomic constant, KE is the kinetic energy, P is the momentum, ω is the angular velocity, C is the speed of light, $\boldsymbol{v_p}$ *is the Phase Velocity*, n *is the energy level*, $\boldsymbol{Z}$ is the number of protons, and α is the fine-structure constant. This law explains the final result of the derivation. This law proves the creation of a relationship that links energy and kinetic energy. That the lost kinetic energy comes out in the form of radiant energy.

$$\boldsymbol{E_{sqr} = E + E_{re}}$$

This equation explains that if a mass moves faster than the speed of light through a certain medium, the portion that exceeds the speed of light is in the form of energy from radiation until the maximum speed in the universe becomes the speed of light.

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^2 \times 4}{\sqrt{\mu_0 \times \varepsilon_0} \times \lambda\, nm} \frac{l_{(p)} \times t_{(p)}}{\Delta E_n} T_{\mu\nu} \qquad (7)$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi}{\mu_0 \times \varepsilon_0} \frac{1}{a_p \times E_p} T_{\mu\nu}$$

Where a_p represents the Planck acceleration, $\boldsymbol{E_p}$ is the Planck energy. This law explains the final result of the derivation. This law proves the creation of a relationship that links the Planck energy and curvature of space-time.

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^5 \times (\hbar)^4 \times 4}{(\lambda\, nm \times e)^4} \frac{G}{(\Delta E_n)^4} T_{\mu\nu} \qquad (8)$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^6 \times 4 \times (m_p)^4}{(\lambda\, nm \times e)^5 \times (\mu_0 \times \varepsilon_0)^4} \frac{(l_{(p)})^6}{(\Delta E_n)^5} T_{\mu\nu}$$

Where ε_0 represents the vacuum permittivity, μ_0 is the Vacuum permeability, e is the electron charge. This law works to link the constants (gravity, electron charge and Planck constant) into one law.

$$\frac{(l_{(p)})^2}{(e)^2} = \frac{G}{(C)^4 \times 4\pi \times \varepsilon_0} \frac{1}{\alpha} \qquad (9)$$

This is a law that links the constants (gravity, electron charge and speed) into one law.

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi \times \bar{\hbar} \times e^2 \times (Z)^2}{n^2 \times E^2} T_{\mu\nu} \qquad (10)$$

$$\bar{\hbar} = k_c \times X = \frac{e^2 \times (m_e)^2}{(4\pi \times \varepsilon_0)^2 \times \hbar \times C \times (m_p)^2} = \frac{H \times \hbar \times C}{e^2} = \frac{H \times k_c}{\alpha}$$

$$\bar{\hbar} = \frac{e^2 \times \left((k_c)_{(m)_1} \right)^2 \times G}{(\hbar \times C)^2} = \frac{e^2 \times \left((k_c)_{(m)_1} \right)^2 \times G}{\left(\hbar \times \boldsymbol{v}_p\right)^2} = \frac{e^2 \times \left((k_c)_{(m)_1} \right)^2 \times G}{\left(\hbar \times \boldsymbol{v}_g\right)^2}$$

Where $\bar{\hbar}$ *represents the multiverse constant*, α *is the fine − structure constant. This law wants to prove is the creation of a relationship that links the curvature of space − time and the energy of the total photon*, n *is the energy level*, $\boldsymbol{Z}$ is the number of protons.

$$n^2 \times \hbar^2 = (k_c)_{(m)_1} \times r \times e^2 \qquad (11)$$

$$(k_c)_{(m)_1} = (m_e) \times k_c = \frac{(m_e)}{(4\pi \times \varepsilon_0)}$$

This law affects the Planck constant and the charge of the electron.

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{4 \times (\hbar)^8 \times (2\pi)^9}{(\mu_0 \times \varepsilon_0)^2 \times (\lambda\, nm)^8 \times (e)^8} \frac{G}{(\Delta E_n)^8} T_{\mu\nu}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{2\pi \times 4}{\hbar} \frac{\left(l_{(p)}\right)^2}{v_p} T_{\mu\nu} \qquad (12)$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{2\pi \times 4}{\hbar} \frac{\left(l_{(p)}\right)^2}{v_g} T_{\mu\nu}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{2\pi \times 4}{\left(\mu_0 \times \varepsilon_0\right)^2 \times \hbar} \frac{\left(l_{(p)}\right)^2}{\left(v_g\right)^5} T_{\mu\nu}$$

$$T_H = \frac{\hbar \times (v_p)^3}{8\pi \times G \times M \times k_B} = \frac{\hbar \times (v_g)^3}{8\pi \times G \times M \times k_B}$$

Where μ_0 Vacuum permeability, $l_{(p)}$ is the Planck length, T_H is the *Hawking Temperature*.

$$\Delta E_n = \frac{h_p \times 2kE}{\lambda\, nm \times e \times p \times (\alpha)^2} \qquad (13)$$

$$\Delta E_n = \frac{2\pi \times G \times \left(m_p\right)^2}{\lambda\, nm \times e}$$

Where $h_{(p)}$ represents the Planck constant, ν is the frequency.

$$E = \frac{2\pi \times G \times \left(m_p\right)^2 \times n}{\lambda \times \alpha \times Z} \qquad (14)$$

$$\boldsymbol{E = m \times C^2}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^4 \times 4 \times (\hbar)^2}{(\lambda\, nm \times e)^3 \times \left(\mu_0 \times \varepsilon_0\right)^3 \times \left(a_p\right)^2} \frac{1}{(\Delta E_n)^3} T_{\mu\nu}$$

Where m_p represents the Planck mass, n is the energy level, $\boldsymbol{Z}$ is the number of protons.

$$(\Delta E_n)^4 = \frac{\left(h_p\right)^4}{(\lambda\, nm \times e)^4 \times (\mu_0 \times \varepsilon_0)^2} \qquad (15)$$

$$\Delta E_n = \left(\frac{2\pi \times \hbar \times C}{\lambda\, nm \times e}\right) = \left(\frac{2\pi \times \hbar \times v_p}{\lambda\, nm \times e}\right) = \left(\frac{2\pi \times \hbar \times v_g}{\lambda\, nm \times e}\right)$$

$$(\Delta E_n)^4 = \frac{\left(h_p\right)^4 \times F_p \times G}{(\lambda\, nm \times e)^4}$$

$$(\Delta E_n)^2 = \left(\frac{\left(h_p\right)^2}{(\lambda\, nm \times e)^2 \times \mu_0 \times \varepsilon_0}\right)$$

These equations represent the energy of a photon in electron volts.

$$2\pi \times r_n = 2 \times d \times sin(\Theta) \qquad (16)$$

These equations represent the modification of **Bragg's law**.

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi \times \left(h_{(p)}\right)^4}{(\lambda)^4} \frac{G}{(E_n)^4} T_{\mu\nu}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi}{1} \frac{G}{\left(\boldsymbol{v}_p\right)^4} T_{\mu\nu} \qquad (17)$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi}{1} \frac{G}{\left(\boldsymbol{v}_g\right)^4} T_{\mu\nu}$$

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$$\boldsymbol{v}_p = \frac{C}{n}$$

$$\boldsymbol{G}_{\mu\nu} + \boldsymbol{\Lambda}\boldsymbol{g}_{\mu\nu} = \frac{8\pi \times (\boldsymbol{p})^8}{(\boldsymbol{\mu}_0 \times \boldsymbol{\varepsilon}_0)^2}\frac{\boldsymbol{G}}{(\boldsymbol{E}_n)^8}\boldsymbol{T}_{\mu\nu}$$

$$\boldsymbol{p} = \boldsymbol{m} \times \boldsymbol{v} = \hbar \times \boldsymbol{k}$$

$$E_n = h_{(p)} \times v = \hbar \times C \times k = \hbar \times \omega$$

k is the wave vector, p is the momentum

$\boldsymbol{v}_p$ is the Phase Velocity

$\boldsymbol{v}_g$ is the group Velocity

E_n is the photon energy is in joules

This equation explains these points:

1) The speed of light varies depending on the medium through which it travels.

2) This difference can be measured when measuring gravitational waves.

3) One of the following things is expected to happen when measuring gravitational waves:

1) Note that the speed of gravitational waves as they pass through a given medium differs from the speed of light.

2) Note that the speed of light will not be affected, meaning that gravitational waves travel at the speed of light as they pass through a given medium. However, the distance and time traveled between the wave's source and its arrival at Earth will vary, and they will not be consistent with the calculations provided by general relativity.

Note: If the speed of light remains the same during the measurement, this is because the tube measuring the wave is empty of air, and the speed of light in a vacuum is constant.

$$\boldsymbol{G}_{\mu\nu} + \Lambda \boldsymbol{g}_{\mu\nu} = \frac{8\pi \times (\boldsymbol{p})^4 \times (\boldsymbol{\alpha})^4 \times (\boldsymbol{Z})^4}{(\boldsymbol{n})^4}\frac{\boldsymbol{G}}{(\boldsymbol{E}_n)^4}\boldsymbol{T}_{\mu\nu} \quad (18)$$

$$\boldsymbol{G}_{\mu\nu} + \Lambda \boldsymbol{g}_{\mu\nu} = \frac{8\pi \times (\boldsymbol{p})^8 \times (\boldsymbol{\alpha})^8 \times (\boldsymbol{Z})^8}{(\boldsymbol{n})^8 \times (\boldsymbol{\mu}_0 \times \boldsymbol{\varepsilon}_0)^2}\frac{\boldsymbol{G}}{(\boldsymbol{E}_n)^8}\boldsymbol{T}_{\mu\nu}$$

$$\boldsymbol{p} = \boldsymbol{m} \times \boldsymbol{C}$$

$$\boldsymbol{E}_n = \boldsymbol{h}_{(p)} \times \boldsymbol{v} = \hbar \times \boldsymbol{C} \times \boldsymbol{k} = \hbar \times \boldsymbol{\omega}$$

k is the wave vector, n is the energy level, $\boldsymbol{Z}$ is the number of protons.

$$\boldsymbol{E}_n = 2\mathbf{kE} \times \frac{\boldsymbol{n}}{\boldsymbol{\alpha} \times \boldsymbol{Z}}$$

$$E_n = \frac{n \times \hbar \times C}{r_n \times Z} \quad (19)$$

$$E_n = \hbar \times \omega$$

$$\omega = C \times k$$

$$\boldsymbol{E}_n = \boldsymbol{p} \times \boldsymbol{C} \times \frac{\boldsymbol{\alpha} \times \boldsymbol{Z}}{\boldsymbol{n}}$$

$$\boldsymbol{p} = \boldsymbol{m} \times \boldsymbol{C}$$

These equations represent some of the laws that can represent the energy of a photon in relativity in joules.

$$\Delta E_n = \frac{h_p \times C}{\lambda\, nm \times e}$$

$$\lambda\, nm = \frac{1}{R_\infty \times \left(\frac{(Z)^2}{(n_2)^2} - \frac{(Z)^2}{(n_1)^2}\right)} \quad (20)$$

$$R_\infty = 1.0973731731 \times 10^7\, m^{-1}$$

$$\Delta E_n = -\frac{h_p \times C \times \alpha}{2e \times \lambda} \times \left(\frac{(Z)^2}{(n_2)^2} - \frac{(Z)^2}{(n_1)^2}\right) = -\frac{h_p \times v_p \times \alpha}{2e \times \lambda} \times \left(\frac{(Z)^2}{(n_2)^2} - \frac{(Z)^2}{(n_1)^2}\right) = -\frac{h_p \times v_g \times \alpha}{2e \times \lambda} \times \left(\frac{(Z)^2}{(n_2)^2} - \frac{(Z)^2}{(n_1)^2}\right)$$

These equations represent some laws that can represent the Bohr energy, wavelength laws, and Rydberg constant, where the electron energy is in volts and the wavelength is in nanometers.

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$$a_c = \frac{G \times m \times \alpha \times Z}{R \times (r_n)^2} \quad (21)$$

$$a_c = \frac{v^2}{r}$$

$$R = \frac{(m_e)^2}{(m_p)^2}$$

Where m_p represents the Planck mass, m_e is the electron mass, r_n is the Bohr radius .

R atio of electron mass to Planck mass (David mass)

$$a_c = \frac{(\omega)^2 \times r_n \times (\alpha)^2 \times (\mathbf{Z})^2}{(n)^4}$$

$$a_c = \frac{v^2}{r}$$

$$a_c = \frac{(\omega)^2 \times (\alpha)^2 \times (Z)^2}{(n)^3 \times k} = \frac{k \times (C)^2 \times (\alpha)^2 \times (Z)^2}{(n)^3} \quad (22)$$

$$a_c = \frac{v^2}{r}$$

$$a_c = \frac{k \times (C)^2 \times (\alpha)^2 \times (Z)^2}{(n)^3}$$

$$a_c = \frac{k \times (v_p)^2 \times (\alpha)^2 \times (Z)^2}{(n)^3}$$

$$a_c = \frac{k \times (v_g)^2 \times (\alpha)^2 \times (Z)^2}{(n)^3}$$

$$a_c = \frac{v^2}{r}$$

$\boldsymbol{v_p}$ is the Phase Velocity, n is the energy level.

Where a_c represents the Centripetal acceleration

$$E = \frac{(n)^2 \times G \times (m_e)^2}{R \times r_n \times \alpha \times Z} \quad (23)$$

$$E = \frac{(n)^2 \times G \times (m_p)^2}{r_n \times \alpha \times Z}$$

$$\boldsymbol{E = m \times C^2}$$

Where E represents the energy, n is the energy level, $\mathbf{Z}$ is the number of protons.

$$E_t = \frac{(n)^2 \times G \times (m_e)^2}{R \times r_n} \quad (24)$$

$$E_t = \frac{(n)^2 \times G \times (m_p)^2}{r_n}$$

$$\boldsymbol{E_t = E \times \alpha \times Z}$$

Where $\boldsymbol{E_t}$ represents the total energy of the photon, E is the energy, n is the energy level.

$$E_n = \frac{n \times G \times (m_e)^2}{R \times r_n} \quad (25)$$

$$E_n = \frac{n \times G \times (m_p)^2}{r_n}$$

$$E_n = h_{(p)} \times \nu$$

$\boldsymbol{E_n}$ is the photon energy, n is the energy level.

$$F_c = m \times a_c$$

F_c is the Centripetal force

$$F_c = p \times \frac{\omega \times \alpha \times Z}{(n)^2} = m \times \frac{v^2}{r} = p \times \frac{v}{r}$$

$$\boldsymbol{p = m \times v}$$

$$a_c = \frac{v^2}{r}$$

$$F_c = p \times \frac{\omega \times (\alpha)^2 \times (Z)^2}{(n)^3} = m \times \frac{v^2}{r} = \hbar \times k^2 \times \frac{v}{n}$$

$$\boldsymbol{p = m \times C}$$

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$$a_c = \frac{v^2}{r}$$

$$F_c = E \times \frac{k \times (\alpha)^2 \times (Z)^2}{(n)^3}$$

$$\boldsymbol{E = m \times C^2}$$

$$a_g = \frac{v^2 \times R \times (Z)^2}{r_n \times \alpha \times (n)^4} \qquad (26)$$

$$a_g = \frac{G \times m}{(r_n)^2}$$

$$a_g = \frac{(\omega)^2 \times r_n \times \alpha \times R \times Z}{(n)^4}$$

$$a_g = \frac{G \times m}{(r_n)^2}$$

$$a_g = \frac{(\omega)^2 \times \alpha \times R \times Z}{(n)^3 \times k} = \frac{k \times (C)^2 \times \alpha \times R \times Z}{(n)^3}$$

$$a_g = \frac{G \times m}{(r_n)^2}$$

$$a_g = \frac{k \times (C)^2 \times \alpha \times R \times Z}{(n)^3}$$

$$a_g = \frac{k \times (v_p)^2 \times \alpha \times R \times Z}{(n)^3}$$

$$a_g = \frac{k \times (v_g)^2 \times \alpha \times R \times Z}{(n)^3}$$

$$a_g = \frac{G \times m}{(r_n)^2}$$

$\boldsymbol{v_p}$ is the Phase Velocity, n is the energy level.

Where a_g represents the Gravitational acceleration

$$E = \frac{2\pi \times G \times (m_p)^2 \times n}{\lambda \times \alpha \times Z} \qquad (27)$$

$$\boldsymbol{E = m \times C^2}$$

Where E represents the energy, n is the energy level.

$$E_n = \frac{n \times G \times (m_p)^2}{r_n} \qquad (28)$$

$$E_n = \frac{2\pi \times G \times (m_p)^2}{\lambda}$$

$$\Delta E_n = \frac{2\pi \times G \times (m_p)^2}{\lambda\, nm \times e}$$

$$E_n = h_{(p)} \times \nu$$

$\boldsymbol{E_n}$ is the photon energy

$$F_g = m \times a_g$$

F_g is the Gravitational force

$$F_g = p \times \frac{\omega \times R}{(n)^2} = M \times \frac{G \times m}{(r_n)^2} \qquad (29)$$

$$F_g = p \times \frac{v \times R}{r \times \alpha \times Z}$$

$$\boldsymbol{p = m \times v}$$

$$a_g = \frac{G \times m}{(r_n)^2}$$

$$F_g = p \times \frac{\omega \times \alpha \times R \times Z}{(n)^3} = M \times \frac{G \times m}{(r_n)^2} \qquad (30)$$

$$\boldsymbol{p = m \times C}$$

$$a_g = \frac{G \times m}{(r_n)^2}$$

$$F_g = E \times \frac{k \times \alpha \times R \times Z}{(n)^3}$$

$\boldsymbol{E = m \times C^2}$

Where a_g represents the Gravitational acceleration, n is the energy level.

$$F_c = \hbar \times k^2 \times \frac{C \times \alpha \times Z}{(n)^2}$$

$$F_c = \hbar \times k^2 \times \frac{v_p \times \alpha \times Z}{(n)^2} \qquad (31)$$

$$F_c = \hbar \times k^2 \times \frac{v_g \times \alpha \times Z}{(n)^2}$$

F_c is the $Quantum$ centripetal force, n is the energy level.

$$F_g = \hbar \times k^2 \times \frac{C \times R}{(n)^2}$$

$$F_g = \hbar \times k^2 \times \frac{v_p \times R}{(n)^2} \qquad (32)$$

$$F_g = \hbar \times k^2 \times \frac{v_g \times R}{(n)^2}$$

F_g is the Gravitational $quantitative$ force, n is the energy level.

$$a_\alpha = \frac{v^2 \times (n)^4}{(\alpha)^2 \times r \times (Z)^2} \qquad (33)$$

$$a_\alpha = \frac{G \times m \times (n)^4}{(r_n)^2 \times \alpha \times R \times Z}$$

a_α is the Angular acceleration

$$\boldsymbol{F_\alpha = p \times \frac{C \times (n)^3}{\alpha \times r \times Z}}$$

$$\boldsymbol{F_\alpha = p \times \frac{v_p \times (n)^3}{\alpha \times r \times Z}} \qquad (34)$$

$$\boldsymbol{F_\alpha = p \times \frac{v_g \times (n)^3}{\alpha \times r \times Z}}$$

$$\boldsymbol{F_\alpha = p \times \frac{\omega \times (n)^3}{\alpha \times r \times k \times Z}}$$

$\boldsymbol{F_\alpha}$ is the Gravitational angular

$$\boldsymbol{F_\alpha = \hbar \times k^2 \times \frac{C \times (n)^2}{\alpha \times Z}}$$

$$\boldsymbol{F_\alpha = \hbar \times k^2 \times \frac{v_p \times (n)^2}{\alpha \times Z}} \qquad (35)$$

$$\boldsymbol{F_\alpha = \hbar \times k^2 \times \frac{v_g \times (n)^2}{\alpha \times Z}}$$

$\boldsymbol{F_\alpha}$ is the gravitational quantitative angular

$$\boldsymbol{F_\alpha = p \times \frac{C \times (n)^2}{r}} \qquad (36)$$

$$\boldsymbol{F_\alpha = p \times \omega \times n}$$

$$\boldsymbol{p = m \times C}$$

$\boldsymbol{F_\alpha}$ is the Gravitational angular

$$\boldsymbol{F_\alpha = E \times n \times k}$$

$$\boldsymbol{E = m \times C^2}$$

F_α is the Gravitational angular

$$L_a = (n)^2 - ((l)^2 + l) \times \hbar$$

L_a is the angular momentum

$$\boldsymbol{L_a = m \times v \times r_n = n \times \hbar}$$

$$\boldsymbol{L_D = \frac{(n)^2 - ((l)^2 + l)}{\left(\frac{(n) - l}{(n) - l}\right)} \times \hbar \times \sqrt{\frac{(l^2 + l)}{(n)^2 \times \left(\frac{(n) - l}{(n) - l}\right)}}}$$

$$L_l = \sqrt{l(l + 1)} \times \hbar = \sqrt{((n)^2 - n_D)} \times \hbar \qquad (37)$$

$$L_t = \sqrt{\left(\frac{(\boldsymbol{n})^2 - ((\boldsymbol{l})^2 + \boldsymbol{l})}{\left(\frac{(\boldsymbol{n}) - \boldsymbol{l}}{(\boldsymbol{n}) - \boldsymbol{l}}\right)} \times \sqrt{\frac{(\boldsymbol{l}^2 + \boldsymbol{l})}{(\boldsymbol{n})^2 \times \left(\frac{(\boldsymbol{n}) - \boldsymbol{l}}{(\boldsymbol{n}) - \boldsymbol{l}}\right)}}\right)^2} \times \hbar + \sqrt{((n)^2 - n_D)} \times \hbar$$

$$L_t = \sqrt{\left(\frac{(\boldsymbol{n})^2 - ((\boldsymbol{l})^2 + \boldsymbol{l})}{\left(\frac{(\boldsymbol{n}) - \boldsymbol{l}}{(\boldsymbol{n}) - \boldsymbol{l}}\right)} \times \sqrt{\frac{(\boldsymbol{l}^2 + \boldsymbol{l})}{(\boldsymbol{n})^2 \times \left(\frac{(\boldsymbol{n}) - \boldsymbol{l}}{(\boldsymbol{n}) - \boldsymbol{l}}\right)}}\right)^2} \times \hbar$$

$$L_t = \sqrt{((n)^2 - n_D)} \times \hbar$$

l is the *orbital quantum number*

L_t is the total *orbital angular* momentum

L_a is the angular momentum

L_l is the *orbital angular momentum*

$$(n_D) = (n)^2 - ((l)^2 + l)$$

n_D is the David's principal quantum number

$$\mu_L = -\frac{e \times L}{2m_e}$$

μ_L(*Electron magnetic moment*)

$$\boldsymbol{L_D} = \frac{(\boldsymbol{n})^2 - ((\boldsymbol{l})^2 + \boldsymbol{l})}{\left(\frac{(\boldsymbol{n}) - \boldsymbol{l}}{(\boldsymbol{n}) - \boldsymbol{l}}\right)} \times \hbar \times \sqrt{\frac{(\boldsymbol{l}^2 + \boldsymbol{l})}{(\boldsymbol{n})^2 \times \left(\frac{(\boldsymbol{n}) - \boldsymbol{l}}{(\boldsymbol{n}) - \boldsymbol{l}}\right)}} \quad (38)$$

$$\boldsymbol{L_D} = \boldsymbol{n_D} \times \hbar \times \sqrt{\frac{(\boldsymbol{l}^2 + \boldsymbol{l})}{(\boldsymbol{n})^2 \times \left(\frac{(\boldsymbol{n}) - \boldsymbol{l}}{(\boldsymbol{n}) - \boldsymbol{l}}\right)}}$$

$$\boldsymbol{L_D} = \boldsymbol{n_D} \times \hbar \times \sqrt{\frac{(\boldsymbol{l}^2 + \boldsymbol{l})}{(\boldsymbol{n})^2}}$$

l is the *orbital quantum number*

L_D is the *David's orbital angular momentum*

$$\boldsymbol{L_D} = \boldsymbol{n}\hbar \times \boldsymbol{D_L}$$

$$\boldsymbol{L_D} = \boldsymbol{m} \times \boldsymbol{v} \times \boldsymbol{r_n} \times \boldsymbol{D_L}$$

$$\boldsymbol{D_L} = \sqrt{\frac{(\boldsymbol{l}^2 + \boldsymbol{l})}{(\boldsymbol{n})^2 \times \left(\frac{(\boldsymbol{n}) - \boldsymbol{l}}{(\boldsymbol{n}) - \boldsymbol{l}}\right)}}$$

$$\boldsymbol{L_D} = \sqrt{\left((\boldsymbol{n})^2 - \frac{(\boldsymbol{n})^2 - ((\boldsymbol{l})^2 + \boldsymbol{l})}{\left(\frac{(\boldsymbol{n}) - \boldsymbol{l}}{(\boldsymbol{n}) - \boldsymbol{l}}\right)}\right)} \times \hbar$$

$$\boldsymbol{L_D} = \boldsymbol{n}\hbar \times \sqrt{\left(\frac{((\boldsymbol{l})^2 + \boldsymbol{l})}{(\boldsymbol{n})^2 \times \left(\frac{(\boldsymbol{n}) - \boldsymbol{l}}{(\boldsymbol{n}) - \boldsymbol{l}}\right)}\right)}$$

$$\boldsymbol{L_D} = \boldsymbol{m} \times \boldsymbol{v} \times \boldsymbol{r_n} \times \sqrt{\left(\frac{((\boldsymbol{l})^2 + \boldsymbol{l})}{(\boldsymbol{n})^2 \times \left(\frac{(\boldsymbol{n}) - \boldsymbol{l}}{(\boldsymbol{n}) - \boldsymbol{l}}\right)}\right)}$$

$\boldsymbol{D_L}$ is the ***David's constant for orbital momentum***

L_D is the *David's orbital angular momentum*

This equation gives the same results for the ***orbital quantum number***

$$(n_D) = \frac{(n)^2 - ((l)^2 + l)}{\left(\frac{(\boldsymbol{n}) - l}{(\boldsymbol{n}) - l}\right)} \quad (39)$$

n_D is the David's principal quantum number

l is the *orbital quantum number*

$$2kE = \frac{h_p \times \nu \times \alpha \times (Z)^2}{(n)^2} \quad (40)$$

$$\Delta E_n = -\frac{h_p \times \nu \times \alpha}{2e} \times \left(\frac{(Z)^2}{(n_2)^2} - \frac{(Z)^2}{(n_1)^2}\right)$$

$$2kE = \frac{k_c (e)^2}{r_n}$$

KE is the kinetic energy

k_c *is the Coulomb constant*

$$F_c = \frac{(\alpha \times Z)^2 \times \hbar \times k}{(n)^4} \quad (41)$$

$$F_c = \frac{(\alpha \times Z)^2 \times p}{(n)^4}$$

F_c is the Centripetal force

$$\boldsymbol{\langle r \rangle_{n,l} = a_0 \times n^2 \mid D_r \mid}$$

$$\boldsymbol{D_r = \frac{3}{2} - \frac{(l^2 + l)}{2(n)^2 \times \left(\frac{(n) - l}{(n) - l}\right)}}$$

$$\boldsymbol{\langle r \rangle_{n,l} = a_0 \times n^2 \left| \frac{3}{2} - \frac{(l^2 + l)}{2(n)^2 \times \left(\frac{(n) - l}{(n) - l}\right)} \right|}$$

D_r is the *David's constant adjusted for radius*

$$\boldsymbol{L_D = n\hbar \times D_L}$$

$$\boldsymbol{L_D = n\hbar \times \sqrt{\left(\frac{((l)^2 + l)}{(n)^2 \times \left(\frac{(n) \times l}{(n) \times l}\right)}\right)}} \quad (42)$$

l is the *orbital quantum number*

L_D is the *David's orbital angular momentum*

$$\boldsymbol{i\hbar \frac{\partial \psi}{\partial t} = [-\frac{\hbar^2}{2m_e} \nabla^2 - \frac{Z \times (e)^2}{4\pi \times \varepsilon_0 \times r_n} + E_0 e^{-r/r_0}]\psi}$$

E_0 (Potential Energy) / (Screening energy)

$\boldsymbol{r}$ (radial coordinate)

$\boldsymbol{r_0}$ Range of the eyebrow effect

$$\boldsymbol{i\hbar \frac{\partial \psi}{\partial t} = [-\frac{\hbar^2}{2m_e} \nabla^2 - \frac{Z \times (e)^2}{4\pi \times \varepsilon_0 \times r_n} + E_0 e^{-r/r_0}]\psi}$$

In the second equation, E0 is the energy displacement, zero.

The most effective approach is to maintain the ground momentum's uncertainty, as it is demonstrated in Bohr's model that the electron's ground momentum rotates, while quantum mechanics demonstrates that it does not. Consequently, this approach is consistent with both Bohr's model and quantum mechanics.

Thus, the Earth's momentum will become unknown, meaning the orbit of (S) is unknown.

This model shows that there is a singularity in the s orbital, and this could lead to the existence of a quantized black hole inside the atom. If this is true, it will lead to dealing with the s orbital in a special way.

If we assume that the singularity is nothing but a white hole, this makes it necessary to make a modification to the Schrödinger equation. The word "white hole" comes from the equation that describes the energy released due to repulsion, and this energy explains the screening effect of hydrogen in quantum mechanics.

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$$L_D = \frac{F_c \times 2 \times n}{v \times (k)^2} \times D_L \qquad (43)$$

$$L_D = \frac{F_c \times 2 \times n}{v \times (k)^2} \times \sqrt{\frac{(l^2 + l)}{(n)^2 \left(\frac{(n) - l}{(n) - l}\right)}}$$

$$L_D = \hbar \times \sqrt{\frac{(l^2 + l)}{\left(\left(\frac{(n) - l}{(n) - l}\right)\right)}}$$

D_L is the ***David's constant for orbital momentum***

L_D is the ***David's orbital angular momentum***

3. These Laws Have Been Modified from the Mix Planck Laws

How quantum entanglement occurs?

What happens is that the electron connects to the other electron through space-time, as space-time acts like a quantum tunnel that connects the two electrons. In this way, the electron does not penetrate the speed of light, But in relation to large objects, you see that it has crossed the speed of light.

This hypothesis was based on scientific foundations, the most important of which is:

1) the connection between relativity and quantum mechanics occurs via quantum entanglement and loop gravitational entanglement.
2) quantum entanglement occurs by the contraction of space-time.
3) space-time contraction occurs by space-time absorbing energy.
4) the quantum jump of the electron occurs as a result of the contraction of space-time.

4. Derivation of Equations

Completing the derivation of the laws resulting from quantum relativity (quantum world)

$$p = m \times v = \hbar \times k$$

$$C = \frac{n \times v}{\alpha \times Z}$$

$$v = \frac{\alpha \times C \times Z}{n} = \frac{\alpha \times v_p \times Z}{n} = \frac{\alpha \times v_g \times Z}{n}$$

$$p = m \times \frac{\alpha \times C \times Z}{n}$$

$$p = m \times C \times \frac{\alpha \times Z}{n}$$

$$E = p \times C$$

$$E_n = p \times C \times \frac{\alpha \times Z}{n}$$

$$p = m \times C$$

$$E_n = p \times C$$

$$p = m \times v = \hbar \times k$$

This is derivation number 1

$$E_n = p \times C$$

$$C = \frac{n \times v}{\alpha \times Z}$$

$$E_n = p \times \frac{n \times v}{\alpha \times Z}$$

$$p = m \times v = \hbar \times k$$

$$E_n = m \times v \times \frac{n \times v}{\alpha \times Z}$$

$$2\text{kE} = m_e \times (v)^2 = m_e \times \left(v_p \times \frac{\alpha \times Z}{n}\right)^2 = m_e \times \left(v_g \times \frac{\alpha \times Z}{n}\right)^2$$

$$E_n = 2\text{kE} \times \frac{n}{\alpha \times Z}$$

This is derivation number 2

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$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi}{1}\frac{G}{(C)^4}T_{\mu\nu}$$

$\boldsymbol{E_n = p \times C}$
$\boldsymbol{p = m \times v = \hbar \times k}$

$$C = \frac{E_n}{p}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi \times (p)^4}{1}\frac{G}{(E_n)^4}T_{\mu\nu}$$

$\boldsymbol{p = m \times v = \hbar \times k}$

$$\boldsymbol{E_n = h_{(p)} \times v = \hbar \times C \times k = \hbar \times \omega = \frac{L \times \omega}{n}}$$

$\boldsymbol{L = m \times v \times r_n = n \times \hbar}$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi \times (\hbar \times k)^4}{1}\frac{G}{(\hbar \times \omega)^4}T_{\mu\nu}$$

$$\boldsymbol{v_p = \frac{\omega}{k}}$$

$$\boldsymbol{v_g = \frac{\partial \omega}{\partial k}}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi}{1}\frac{G}{(v_p)^4}T_{\mu\nu}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi}{1}\frac{G}{(v_g)^4}T_{\mu\nu}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi \times (p)^4}{1}\frac{G}{(E_n)^4}T_{\mu\nu}$$

$\boldsymbol{p = \frac{h_{(p)}}{\lambda}}$

$$\boldsymbol{G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi \times \left(h_{(p)}\right)^4}{(\lambda)^4}\frac{G}{(E_n)^4}T_{\mu\nu}}$$

$$E_n = h_{(p)} \times v = \hbar \times C \times k = \hbar \times \omega$$

k is the wave vector

$$\frac{p}{E_n} = \frac{\hbar \times k}{\hbar \times \omega} = \frac{k}{\omega} = \frac{1}{v_p} = \frac{\partial k}{\partial \omega} = \frac{1}{v_g}$$

$$\boldsymbol{v_p = \frac{\omega}{k}}$$

$\boldsymbol{v_p}$ is the Phase Velocity

This is derivation number 3

$$n \times \lambda = 2\pi \times r_n$$

$\mathbf{k} = \boldsymbol{\frac{2\pi}{\lambda}}$

$$\mathbf{k} = \boldsymbol{\frac{n}{r_n \times Z}}$$

This is derivation number 4

$$E_n = \frac{h_p \times C}{\lambda} \quad \frac{2\pi}{2\pi}$$

$\mathbf{k} = \boldsymbol{\frac{2\pi}{\lambda}}$

$\hbar = \boldsymbol{\frac{h_p}{2\pi}}$

$$E_n = \hbar \times C \times k$$

$\mathbf{k} = \boldsymbol{\frac{n}{r_n \times Z}}$

$$\boldsymbol{E_n = \frac{n \times \hbar \times C}{r_n \times Z}}$$

This is derivation number 5

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi \times (p)^4}{1}\frac{G}{(E_n)^4}T_{\mu\nu} \quad \frac{(C)^4}{(C)^4}$$

$\boldsymbol{p = m \times v = \hbar \times k}$

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$$G_{\mu v}+\Lambda g_{\mu v}=\frac{8\pi\times(p)^4\times(C)^4}{(C)^4}\frac{G}{(E_n)^4}T_{\mu v}$$

$$\boldsymbol{C}=\frac{\boldsymbol{E_n}}{\boldsymbol{p}}$$

$$G_{\mu v}+\Lambda g_{\mu v}=\frac{8\pi\times(p)^8\times(C)^4}{1}\frac{G}{(E_n)^8}T_{\mu v}$$

$$\boldsymbol{\mu_0\times\varepsilon_0=\left(\frac{1}{(C)^2}\right)}$$

$$\boldsymbol{G_{\mu v}+\Lambda g_{\mu v}=\frac{8\pi\times(p)^8}{(\mu_0\times\varepsilon_0)^2}\frac{G}{(E_n)^8}T_{\mu v}}$$

$$E_n=h_{(p)}\times v=\hbar\times C\times k=\hbar\times\omega$$

k is the wave vector

$$\boldsymbol{G_{\mu v}+\Lambda g_{\mu v}=\frac{8\pi\times(p)^8}{(\mu_0\times\varepsilon_0)^2}\frac{G}{(E_n)^8}T_{\mu v}}$$

$$\boldsymbol{p=m\times v=\hbar\times k}$$

$$\boldsymbol{E_n=h_{(p)}\times v=\hbar\times C\times k=\hbar\times\omega}$$

$$G_{\mu v}+\Lambda g_{\mu v}=\frac{8\pi\times(\hbar\times k)^8}{(\mu_0\times\varepsilon_0)^2}\frac{G}{(\hbar\times\omega)^8}T_{\mu v}$$

$$\boldsymbol{v_p=\frac{\omega}{k}}$$

$$G_{\mu v}+\Lambda g_{\mu v}=\frac{8\pi}{(\mu_0\times\varepsilon_0)^2}\frac{G}{(v_p)^8}T_{\mu v}$$

$$\boldsymbol{v_g=\frac{\partial\omega}{\partial k}}$$

$$G_{\mu v}+\Lambda g_{\mu v}=\frac{8\pi}{(\mu_0\times\varepsilon_0)^2}\frac{G}{(v_g)^8}T_{\mu v}$$

$$\boldsymbol{\mu_0\times\varepsilon_0=\left(\frac{1}{(v_p)^2}\right)}$$

$$\boldsymbol{G_{\mu v}+\Lambda g_{\mu v}=\frac{8\pi}{1}\frac{G}{(v_p)^4}T_{\mu v}}$$

$$\boldsymbol{G_{\mu v}+\Lambda g_{\mu v}=\frac{8\pi}{1}\frac{G}{(v_g)^4}T_{\mu v}}$$

v_p is the Phase Velocity, v_g is the group Velocity, General quantitative relativity

This is derivation number 6

$$G_{\mu v}+\Lambda g_{\mu v}=\frac{8\pi\times(p)^4}{1}\frac{G}{(E_n)^4}T_{\mu v}$$

$$\boldsymbol{p=m\times v=\hbar\times k}$$

$$\boldsymbol{v=\frac{\alpha\times C\times Z}{n}}$$

$$\boldsymbol{G_{\mu v}+\Lambda g_{\mu v}=\frac{8\pi\times\left(m\times C\times\frac{\alpha\times Z}{n}\right)^4}{1}\frac{G}{(E_n)^4}T_{\mu v}}$$

$$\boldsymbol{G_{\mu v}+\Lambda g_{\mu v}=\frac{8\pi\times(p)^4\times(\alpha)^4\times(Z)^4}{(n)^4}\frac{G}{(E_n)^4}T_{\mu v}\qquad\frac{(C)^4}{(C)^4}}$$

$$\boldsymbol{p=m\times C}$$

$$\boldsymbol{G_{\mu v}+\Lambda g_{\mu v}=\frac{8\pi\times(p)^4\times(\alpha)^4\times(C)^4\times(Z)^4}{(n)^4\times(C)^4}\frac{G}{(E_n)^4}T_{\mu v}}$$

$$\boldsymbol{C=\frac{E_n}{p}}$$

$$\boldsymbol{G_{\mu v}+\Lambda g_{\mu v}=\frac{8\pi\times(p)^8\times(\alpha)^8\times(C)^4\times(Z)^8}{(n)^8}\frac{G}{(E_n)^8}T_{\mu v}}$$

$$\boldsymbol{\mu_0\times\varepsilon_0=\left(\frac{1}{(C)^2}\right)}$$

$$\boldsymbol{G_{\mu v}+\Lambda g_{\mu v}=\frac{8\pi\times(p)^8\times(\alpha)^8\times(Z)^8}{(n)^8\times(\mu_0\times\varepsilon_0)^2}\frac{G}{(E_n)^8}T_{\mu v}}$$

$$\boldsymbol{p = m \times C}$$
$$E_n = h_{(p)} \times \nu = \hbar \times C \times k = \hbar \times \omega$$

k is the wave vector

This is derivation number 7

$$\boldsymbol{G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi \times (p)^8}{(\mu_0 \times \varepsilon_0)^2} \frac{G}{(E_n)^8} T_{\mu\nu}}$$
$$\boldsymbol{p = m \times v = \hbar \times k}$$
$$\boldsymbol{p = \frac{h_{(p)}}{\lambda}}$$
$$\boldsymbol{G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi \times (h_{(p)})^8}{(\mu_0 \times \varepsilon_0)^2 \times (\lambda)^8} \frac{G}{(E_n)^8} T_{\mu\nu} \quad \frac{(2\pi)^8}{(2\pi)^8}}$$
$$\boldsymbol{\hbar = \frac{h_p}{2\pi}}$$
$$\boldsymbol{G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^9 \times 4 \times (\hbar)^8}{(\mu_0 \times \varepsilon_0)^2 \times (\lambda)^8} \frac{G}{(E_n)^8} T_{\mu\nu} \quad \frac{(e)^8}{(e)^8}}$$
$$\boldsymbol{\Delta E_n = \frac{h_p \times C}{\lambda\, nm \times e}}$$
$$\boldsymbol{G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^9 \times 4 \times (\hbar)^8}{(\mu_0 \times \varepsilon_0)^2 \times (\lambda\, nm)^8 \times (e)^8} \frac{G}{(\Delta E_n)^8} T_{\mu\nu}}$$

$\boldsymbol{\lambda\, nm}$ is the wavelength is (nm), $\boldsymbol{\Delta E_n}$ is the photon energy is in electron volt

This is derivation number 8

$$\boldsymbol{G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi \times (p)^8 \times (\alpha)^8 \times (Z)^8}{(n)^8 \times (\mu_0 \times \varepsilon_0)^2} \frac{G}{(E_n)^8} T_{\mu\nu}}$$
$$\boldsymbol{p = m \times C}$$
$$\boldsymbol{p = \frac{n \times h_{(p)}}{\lambda \times \alpha \times Z}}$$
$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi \times (h_{(p)})^8}{(\lambda)^8 \times (\mu_0 \times \varepsilon_0)^2} \frac{G}{(E_n)^8} T_{\mu\nu} \quad \frac{(2\pi)^8}{(2\pi)^8}$$
$$\boldsymbol{\hbar = \frac{h_p}{2\pi}}$$
$$\boldsymbol{G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^9 \times 4 \times (\hbar)^8}{(\mu_0 \times \varepsilon_0)^2 \times (\lambda)^8} \frac{G}{(E_n)^8} T_{\mu\nu} \quad \frac{(e)^8}{(e)^8}}$$
$$\boldsymbol{\Delta E_n = \frac{h_p \times C}{\lambda\, nm \times e}}$$
$$\boldsymbol{G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^9 \times 4 \times (\hbar)^8}{(\mu_0 \times \varepsilon_0)^2 \times (\lambda\, nm)^8 \times (e)^8} \frac{G}{(\Delta E_n)^8} T_{\mu\nu}}$$

This is derivation number 9

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi \times (p)^4}{1} \frac{G}{(E_n)^4} T_{\mu\nu}$$
$$\boldsymbol{p = m \times v = \hbar \times k}$$
$$\boldsymbol{p = \frac{h_{(p)}}{\lambda}}$$
$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi \times (h_{(p)})^4}{(\lambda)^4} \frac{G}{(E_n)^4} T_{\mu\nu} \quad \frac{(2\pi)^4}{(2\pi)^4}$$
$$\boldsymbol{\hbar = \frac{h_p}{2\pi}}$$
$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^5 \times 4 \times (\hbar)^4}{(\lambda)^4} \frac{G}{(E_n)^4} T_{\mu\nu} \quad \frac{(e)^4}{(e)^4}$$
$$\boldsymbol{\Delta E_n = \frac{h_p \times C}{\lambda\, nm \times e}}$$
$$\boldsymbol{G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^5 \times (\hbar)^4 \times 4}{(\lambda\, nm \times e)^4} \frac{G}{(\Delta E_n)^4} T_{\mu\nu}}$$

This is derivation number 10

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kE= $\frac{m_e \times (v)^2}{2}$ $\frac{m_e}{m_e}$

$$\boldsymbol{p = m_e \times v = \hbar \times k}$$

$$2kE = \frac{(p)^2}{m_e}$$

$$\boldsymbol{p = m_e \times C \times \frac{\alpha \times Z}{n}}$$

$$2kE = \frac{\left(m_e \times C \times \frac{\alpha \times Z}{n}\right)^2}{m_e}$$

$$2kE = \frac{m_e \times (C \times \alpha \times Z)^2}{(n)^2}$$

$$\boldsymbol{E = m \times C^2}$$

$$E = \frac{\left(n \times h_{(a)}\right)^2 \times 2kE}{Z^2}$$

$$\boldsymbol{h_{(a)} = \frac{1}{\alpha}}$$

$$\boldsymbol{E_t = E \times \alpha}$$

$$E_t = \frac{(n)^2 \times 2kE}{\alpha \times Z^2}$$

$$\boldsymbol{E_t = E_n \times n}$$

$$E_n = \frac{n \times 2kE}{\alpha \times Z}$$

$$\boldsymbol{E_n = \frac{n \times \hbar \times C}{r_n \times Z}}$$

$$\frac{n \times \hbar \times C}{r_n \times Z} = \frac{n \times 2kE}{\alpha \times Z} \qquad \frac{p \times \alpha}{p \times \alpha}$$

$$\boldsymbol{h_p = m_e \times \lambda \times v \times \alpha \times 2\pi \times r_n}$$

$$\boldsymbol{h_p = p \times \alpha \times 2\pi \times r_n}$$

$$h_p \times C = \frac{n \times h_p \times 2kE}{Z \times p \times (\alpha)^2}$$

$$\boldsymbol{\Delta E_n = \frac{h_p \times C}{\lambda\, nm}}$$

$$\Delta E_n = \frac{h_p \times 2kE}{\lambda\, nm \times e \times p \times (\alpha)^2}$$

$$\boldsymbol{\lambda\, nm = \frac{h_p \times 2kE}{\Delta E_n \times e \times p \times (\alpha)^2}}$$

This is derivation number 11

$$\left(l_{(p)}\right)^2 = \frac{\hbar \times G}{(C)^3}$$

$$\boldsymbol{G = \frac{(C)^3 \times \left(l_{(p)}\right)^2}{\hbar}}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi \times (p)^4}{1} \frac{G}{(E_n)^4} T_{\mu\nu} \qquad \frac{C}{C}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi \times (p)^4}{C \times \hbar} \frac{(C)^4 \times \left(l_{(p)}\right)^2}{(E_n)^4} T_{\mu\nu}$$

$$\boldsymbol{\hbar = \frac{h_p}{2\pi}}$$

$$\boldsymbol{C = \lambda \times v}$$

$$\boldsymbol{E_n = h_{(p)} \times v}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^2 \times 4 \times (p)^4}{\lambda} \frac{(C)^4 \times \left(l_{(p)}\right)^2}{(E_n)^5} T_{\mu\nu}$$

$$\boldsymbol{\mu_0 \times \varepsilon_0 = \left(\frac{1}{(C)^2}\right)}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^2 \times 4 \times (p)^4}{\lambda \times (\mu_0 \times \varepsilon_0)^2} \frac{\left(l_{(p)}\right)^2}{(E_n)^5} T_{\mu\nu}$$

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$$\boldsymbol{p} = \frac{\boldsymbol{h}_{(p)}}{\boldsymbol{\lambda}} = \hbar \times \boldsymbol{k}$$
$$\boldsymbol{k} = \frac{2\boldsymbol{\pi}}{\boldsymbol{\lambda}}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{2\pi \times 4 \times (\hbar)^4 \times (k)^5}{(\mu_0 \times \varepsilon_0)^2} \frac{(l_{(p)})^2}{(E_n)^5} T_{\mu\nu}$$

$$\boldsymbol{E_n} = \boldsymbol{h}_{(p)} \times \boldsymbol{\nu} = \hbar \times \boldsymbol{C} \times \boldsymbol{k} = \hbar \times \boldsymbol{\omega}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{2\pi \times 4 \times (\hbar)^4 \times (k)^5}{(\mu_0 \times \varepsilon_0)^2} \frac{(l_{(p)})^2}{(\hbar \times \omega)^5} T_{\mu\nu}$$

$$\boldsymbol{v_p} = \frac{\boldsymbol{\omega}}{\boldsymbol{k}}$$
$$\boldsymbol{v_g} = \frac{\partial \boldsymbol{\omega}}{\partial \boldsymbol{k}}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{2\pi \times 4}{(\mu_0 \times \varepsilon_0)^2 \times \hbar} \frac{(l_{(p)})^2}{(v_p)^5} T_{\mu\nu}$$
$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{2\pi \times 4}{(\mu_0 \times \varepsilon_0)^2 \times \hbar} \frac{(l_{(p)})^2}{(v_g)^5} T_{\mu\nu}$$

$$\boldsymbol{\mu_0} \times \boldsymbol{\varepsilon_0} = \left(\frac{\boldsymbol{1}}{(\boldsymbol{v_p})^2}\right)$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{2\pi \times 4}{\hbar} \frac{(l_{(p)})^2}{v_p} T_{\mu\nu}$$
$$\boldsymbol{G_{\mu\nu}} + \boldsymbol{\Lambda g_{\mu\nu}} = \frac{\boldsymbol{2\pi \times 4}}{\hbar} \frac{(\boldsymbol{l_{(p)}})^2}{\boldsymbol{v_g}} \boldsymbol{T_{\mu\nu}}$$

v_g is the group Velocity

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^2 \times 4 \times (p)^4}{\lambda \times (\mu_0 \times \varepsilon_0)^2} \frac{(l_{(p)})^2}{(E_n)^5} T_{\mu\nu}$$
$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^2 \times 4 \times (h_{(p)})^4}{(\lambda)^5 \times (\mu_0 \times \varepsilon_0)^2} \frac{(l_{(p)})^2}{(E_n)^5} T_{\mu\nu}$$

$$\boldsymbol{h_p} = \boldsymbol{2\pi} \times \boldsymbol{m_p} \times \boldsymbol{C} \times \boldsymbol{l_{(p)}}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^6 \times 4 \times (m_p \times C)^4}{(\lambda)^5 \times (\mu_0 \times \varepsilon_0)^2} \frac{(l_{(p)})^6}{(E_n)^5} T_{\mu\nu}$$

$$\boldsymbol{\mu_0} \times \boldsymbol{\varepsilon_0} = \left(\frac{\boldsymbol{1}}{(\boldsymbol{C})^2}\right)$$

$$\boldsymbol{G_{\mu\nu}} + \boldsymbol{\Lambda g_{\mu\nu}} = \frac{(\boldsymbol{2\pi})^6 \times \boldsymbol{4} \times (\boldsymbol{m_p})^4}{(\lambda)^5 \times (\boldsymbol{\mu_0} \times \boldsymbol{\varepsilon_0})^4} \frac{(\boldsymbol{l_{(p)}})^6}{(\boldsymbol{E_n})^5} \boldsymbol{T_{\mu\nu}}$$

$$E_n = h_{(p)} \times \nu = \hbar \times C \times k = \hbar \times \omega$$

k is the wave vector

This is derivation number 12

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^2 \times 4 \times (h_{(p)})^4}{(\lambda)^5 \times (\mu_0 \times \varepsilon_0)^2} \frac{(l_{(p)})^2}{(E_n)^5} T_{\mu\nu}$$

$$\boldsymbol{E_n} = \hbar \times \boldsymbol{C} \times \boldsymbol{k} = \hbar \times \boldsymbol{\omega}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^2 \times 4 \times (h_{(p)})^4}{(\lambda)^5 \times (\mu_0 \times \varepsilon_0)^2} \frac{(l_{(p)})^2}{(\hbar \times C \times k)^5} T_{\mu\nu}$$

$$\boldsymbol{\Delta E_n} = \frac{\boldsymbol{h_p} \times \boldsymbol{C}}{\boldsymbol{\lambda\, nm}}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^2 \times 4 \times (h_{(p)})^4}{(\lambda\, nm \times e)^5 \times (\mu_0 \times \varepsilon_0)^2} \frac{(l_{(p)})^2}{(\Delta E_n)^5} T_{\mu\nu}$$

$$\hbar = \frac{\boldsymbol{h_p}}{\boldsymbol{2\pi}}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^6 \times 4 \times (\hbar)^4}{(\lambda\, nm \times e)^5 \times (\mu_0 \times \varepsilon_0)^2} \frac{(l_{(p)})^2}{(\Delta E_n)^5} T_{\mu\nu}$$

$$\hbar = \boldsymbol{m_p \times C \times l_{(p)}}$$

$$\boldsymbol{\mu_0 \times \varepsilon_0 = \left(\frac{1}{(C)^2}\right)}$$

$$\boldsymbol{G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^6 \times 4 \times (m_p)^4}{(\lambda\, nm \times e)^5 \times (\mu_0 \times \varepsilon_0)^4} \frac{(l_{(p)})^6}{(\Delta E_n)^5} T_{\mu\nu}}$$

This is derivation number 13

$$a = \frac{v^2 \times R \times (Z)^2}{r_n \times \alpha \times (n)^4}$$

$$\boldsymbol{a = \frac{G \times m}{(r_n)^2}}$$

$$a = \frac{G \times m \times \alpha \times Z}{R \times (r_n)^2}$$

$$\boldsymbol{a = \frac{v^2}{r}}$$

$$\frac{v^2}{r} = \frac{G \times m \times \alpha \times Z}{R \times (r_n)^2}$$

$$v^2 = \frac{G \times m \times \alpha \times Z}{R \times r_n} \frac{(n)^2 \times \alpha}{(n)^2 \times \alpha}$$

$$\boldsymbol{(C)^2 = \frac{(n)^2 \times v^2}{(\alpha)^2 \times (Z)^2}} \qquad (C)^2 = \frac{(n)^2 \times G \times m}{R \times r_n \times \alpha \times Z} \frac{m}{m}$$

$$\boldsymbol{E = m \times C^2}$$

$$E = \frac{(n)^2 \times G \times (m_e)^2}{R \times r_n \times \alpha \times Z}$$

$$\boldsymbol{E_t = E \times \alpha \times Z}$$

$$E_t = \frac{(n)^2 \times G \times (m_e)^2}{R \times r_n}$$

$$\boldsymbol{E_t = E_n \times n}$$

$$E_n = \frac{n \times G \times (m_e)^2}{R \times r_n}$$

$$\boldsymbol{R = \frac{(m_e)^2}{(m_p)^2}}$$

Where m_p represents the Planck mass.

$$E_n = \frac{n \times G \times (m_p)^2}{r_n} \frac{2\pi}{2\pi}$$

$$\boldsymbol{n \times \lambda = 2\pi \times r_n}$$

$$E_n = \frac{2\pi \times G \times (m_p)^2}{\lambda}$$

$$\boldsymbol{E_n = h_{(p)} \times v}$$

$$\boldsymbol{E_n = \frac{n \times h_p \times C}{2\pi \times r_n}}$$

$$\frac{n \times h_p \times C}{2\pi \times r_n} = \frac{2\pi \times G \times (m_p)^2}{\lambda}$$

$$\boldsymbol{n \times \lambda = 2\pi \times r_n}$$

$$h_p \times C = \frac{2\pi \times G \times (m_p)^2}{e}$$

$$\boldsymbol{E_n = \frac{h_{(p)} \times C}{\lambda}}$$

$$\boldsymbol{\Delta E_n} = \frac{2\pi \times G \times (m_p)^2}{\lambda\, nm \times \boldsymbol{e}}$$

$$\boldsymbol{\Delta E_n = -13.605693099\ eV \times \left(\frac{(Z)^2}{(n_2)^2} - \frac{(Z)^2}{(n_1)^2}\right)}$$

$$\boldsymbol{E = \frac{2\pi \times G \times (m_p)^2 \times n}{\lambda \times \alpha \times Z}}$$

$$\boldsymbol{E = m \times C^2}$$

Where E represents the energy

$$\boldsymbol{v = \frac{x}{t}}$$

$x = 2\pi \times r_n$

$t = T$

$$v = \frac{2\pi \times r_n}{T}$$

$$v^2 = \frac{(2\pi \times r_n)^2}{(T)^2}$$

$$\frac{v^2}{r} = \frac{(2\pi)^2 \times r_n}{(T)^2}$$

$\boldsymbol{\nu} = \frac{1}{T}$

$$\frac{v^2}{r} = (2\pi)^2 \times r_n \times (\nu)^2$$

$\omega = 2\pi \times \boldsymbol{\nu}$

$$\frac{v^2}{r} = (\omega)^2 \times r_n$$

$a = \frac{v^2}{r}$

$$a_\alpha = (\omega)^2 \times r_n$$

$$a_c = \frac{(\omega)^2 \times r_n \times (\alpha)^2 \times (\boldsymbol{Z})^2}{(n)^4}$$

$a_c = \frac{v^2}{r}$

$$a_g = \frac{(\omega)^2 \times r_n \times \alpha \times R \times \boldsymbol{Z}}{(n)^4}$$

$a_g = \frac{G \times m}{(r_n)^2}$

$$a = (2\pi)^2 \times r_n \times (\nu)^2$$

$n \times \lambda = 2\pi \times r_n$

$$a = 2\pi \times n \times \lambda \times (\nu)^2$$

$\boldsymbol{C = \lambda \times \nu}$

$$a = 2\pi \times n \times \boldsymbol{C} \times \nu$$

$\omega = 2\pi \times \boldsymbol{\nu}$

$$a = n \times \omega \times \boldsymbol{C}$$

$\boldsymbol{C} = \frac{\omega}{k}$

$$a_\alpha = n \times \omega \times \frac{\omega}{k}$$

$$a_\alpha = \frac{n \times (\omega)^2}{k} = n \times k \times (\boldsymbol{C})^2$$

$r = \frac{n}{k}$

$$a_\alpha = (\omega)^2 \times r_n = n \times k \times (\boldsymbol{C})^2$$

$$a_\alpha = \frac{v^2 \times (n)^4}{(\alpha)^2 \times r \times (\boldsymbol{Z})^2}$$

a_α is the Angular acceleration

$$a_\alpha = \frac{G \times m \times (n)^4}{(r_n)^2 \times \alpha \times R \times \boldsymbol{Z}}$$

a_α is the Angular acceleration

$$a = n \times \omega \times \boldsymbol{C}$$

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$$a_c = \frac{\omega \times \boldsymbol{C} \times (\alpha)^2 \times (\boldsymbol{Z})^2}{(n)^3}$$

$$a_c = \frac{(\omega)^2 \times (\alpha)^2 \times (\boldsymbol{Z})^2}{(n)^3 \times k} = \frac{k \times (\boldsymbol{C})^2 \times (\alpha)^2 \times (\boldsymbol{Z})^2}{(n)^3}$$

$$a_c = \frac{k \times (\boldsymbol{C})^2 \times (\alpha)^2 \times (\boldsymbol{Z})^2}{(n)^3}$$

$$a_c = \frac{k \times (\boldsymbol{v}_p)^2 \times (\alpha)^2 \times (\boldsymbol{Z})^2}{(n)^3}$$

$$a_c = \frac{k \times (\boldsymbol{v}_g)^2 \times (\alpha)^2 \times (\boldsymbol{Z})^2}{(n)^3}$$

$$a_c = \frac{v^2}{r}$$

$$a = n \times \omega \times \boldsymbol{C}$$

$$a_g = \frac{\omega \times \boldsymbol{C} \times \alpha \times R \times \boldsymbol{Z}}{(n)^3}$$

$$a_g = \frac{(\omega)^2 \times \alpha \times R \times \boldsymbol{Z}}{(n)^3 \times k} = \frac{k \times (\boldsymbol{C})^2 \times \alpha \times R \times \boldsymbol{Z}}{(n)^3}$$

$$a_g = \frac{k \times (\boldsymbol{C})^2 \times \alpha \times R \times \boldsymbol{Z}}{(n)^3}$$

$$a_g = \frac{k \times (\boldsymbol{v}_p)^2 \times \alpha \times R \times \boldsymbol{Z}}{(n)^3}$$

$$a_g = \frac{k \times (\boldsymbol{v}_g)^2 \times \alpha \times R \times \boldsymbol{Z}}{(n)^3}$$

$$a = \frac{G \times m}{(r_n)^2}$$

$$\boldsymbol{v}_p = \frac{C}{n}$$

$\boldsymbol{v}_p$ is the Phase Velocity

This is derivation number 14

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi \times (h_{(p)})^4}{(\lambda)^4} \frac{G}{(E_n)^4} T_{\mu\nu} \qquad \frac{(n)^4}{(n)^4}$$

$$n \times \lambda = 2\pi \times r_n$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi \times (n \times \hbar)^4}{(r_n \times Z)^4} \frac{G}{(E_n)^4} T_{\mu\nu}$$

$$E_n = \frac{n \times \hbar \times C}{r_n \times Z} = \hbar \times \omega$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^5 \times (\hbar)^4 \times 4}{(\lambda\, nm \times e)^4} \frac{G}{(\Delta E_n)^4} T_{\mu\nu}$$

This is derivation number 15

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi}{1} \frac{G}{(C)^4} T_{\mu\nu} \qquad \frac{(m_e)^4}{(m_e)^4}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi (m_e)^4}{(m_e)^4} \frac{G}{(C)^4} T_{\mu\nu} \qquad \frac{(\psi)^4}{(\psi)^4}$$

$$mC\,\psi = i\hbar\gamma^\mu \partial_\mu \psi$$

Dirac equation

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi (m_e)^4}{(i\hbar\gamma^\mu \partial_\mu \psi)^4} \frac{G(\psi)^4}{1} T_{\mu\nu}$$

$$(i\hbar\gamma^\mu \partial_\mu \psi)^4 (G_{\mu\nu} + \Lambda g_{\mu\nu}) = 8\pi (m_e)^4 G(\psi)^4 T_{\mu\nu} \qquad \frac{(C)^8}{(C)^8}$$

$$\boldsymbol{E} = \boldsymbol{m} \times \boldsymbol{C}^2$$

$$(i\hbar\gamma^\mu \partial_\mu \psi)^4 (G_{\mu\nu} + \Lambda g_{\mu\nu}) = \frac{8\pi (E)^4}{(C)^8} \frac{G(\psi)^4}{1} T_{\mu\nu} \qquad \frac{(\alpha)^4}{(\alpha)^4}$$

$$E_t = E \times \alpha$$

$$E_t = E_n \times n$$

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$$(i\hbar\gamma^{\mu}\partial_{\mu}\psi)^{4}(G_{\mu\nu}+\Lambda g_{\mu\nu})=\frac{8\pi(E_n\times n)^4}{(C)^8}\frac{G(\psi)^4}{(\alpha)^4}T_{\mu\nu}$$

$E_n = h_{(p)}\times\nu$

$$(i\hbar\gamma^{\mu}\partial_{\mu}\psi)^{4}(G_{\mu\nu}+\Lambda g_{\mu\nu})=\frac{8\pi\left(h_{(p)}\times\nu\times n\right)^4}{(C)^8}\frac{G(\psi)^4}{(\alpha)^4}T_{\mu\nu}\quad\frac{(m_e)^4}{(m_e)^4}$$

$\boldsymbol{E=m\times C^2}$

$E_t = E\times\alpha$

$$E_t = E_n\times n$$

$$(i\hbar\gamma^{\mu}\partial_{\mu}\psi)^{4}(G_{\mu\nu}+\Lambda g_{\mu\nu})=\frac{8\pi\left(h_{(p)}\times\nu\times m_e\right)^4}{1}\frac{G(\psi)^4}{(E_n)^4}T_{\mu\nu}\quad\frac{(\lambda)^4}{(\lambda)^4}$$

$\boldsymbol{C=\lambda\times\nu}$

$$(i\hbar\gamma^{\mu}\partial_{\mu}\psi)^{4}(G_{\mu\nu}+\Lambda g_{\mu\nu})=\frac{8\pi\left(h_{(p)}\times C\times m_e\right)^4}{(\lambda)^4}\frac{G(\psi)^4}{(E_n)^4}T_{\mu\nu}$$

$\boldsymbol{p=m\times C}$

$\boldsymbol{p=\frac{h_{(p)}}{\lambda}}$

$$(i\hbar\gamma^{\mu}\partial_{\mu}\psi)^{4}(G_{\mu\nu}+\Lambda g_{\mu\nu})=\frac{8\pi(p\times\alpha)^8}{1}\frac{G(\psi)^4}{(E_n)^4}T_{\mu\nu}$$

$$\boldsymbol{p=m\times C}$$

$\boldsymbol{p\times\alpha=\frac{h_{(p)}}{\lambda}}=\hbar\times\boldsymbol{k}$

$E_n=\frac{n\times h_p\times C}{2\pi\times r_n}=\hbar\times\omega$

$$(i\hbar\gamma^{\mu}\partial_{\mu}\psi)^{4}(G_{\mu\nu}+\Lambda g_{\mu\nu})=\frac{8\pi(\hbar\times k)^8}{1}\frac{G(\psi)^4}{(\hbar\times\omega)^4}T_{\mu\nu}$$

$$v_p=\frac{\omega}{k}$$

$$(i\hbar\gamma^{\mu}\partial_{\mu}\psi)^{4}(G_{\mu\nu}+\Lambda g_{\mu\nu})=\frac{8\pi(\hbar\times k)^4}{1}\frac{G(\psi)^4}{(v_p)^4}T_{\mu\nu}$$

$\hbar=\frac{h_p}{2\pi}$

$\boldsymbol{k=\frac{2\pi}{\lambda}}$

$$(i\hbar\gamma^{\mu}\partial_{\mu}\psi)^{4}(G_{\mu\nu}+\Lambda g_{\mu\nu})=\frac{8\pi\left(h_p\right)^4}{(\lambda)^4}\frac{G(\psi)^4}{(v_p)^4}T_{\mu\nu}$$

$\boldsymbol{C=\lambda\times\nu}$

$$(i\hbar\gamma^{\mu}\partial_{\mu}\psi)^{4}(G_{\mu\nu}+\Lambda g_{\mu\nu})=\frac{8\pi\left(h_p\times\nu\right)^4}{(C)^4}\frac{G(\psi)^4}{(v_p)^4}T_{\mu\nu}$$

$E_n = h_{(p)}\times\nu$

$$(i\hbar\gamma^{\mu}\partial_{\mu}\psi)^{4}(G_{\mu\nu}+\Lambda g_{\mu\nu})=\frac{8\pi(E_n)^4}{(C)^4}\frac{G(\psi)^4}{(v_p)^4}T_{\mu\nu}\quad\frac{(2\pi)^4}{(2\pi)^4}$$

$C=\lambda\times\nu$

$$(i\hbar\gamma^{\mu}\partial_{\mu}\psi)^{4}(G_{\mu\nu}+\Lambda g_{\mu\nu})=\frac{8\pi(E_n)^4}{(\lambda\times\nu)^4}\frac{G(\psi)^4}{(v_p)^4}T_{\mu\nu}\quad\frac{(2\pi)^4}{(2\pi)^4}$$

$\boldsymbol{k=\frac{2\pi}{\lambda}}$

$\omega=2\pi\times\nu$

$$\boldsymbol{(i\hbar\gamma^{\mu}\partial_{\mu}\psi)^{4}(G_{\mu\nu}+\Lambda g_{\mu\nu})=\frac{8\pi(E_n)^4\times k^4}{(\omega)^4}\frac{G(\psi)^4}{(v_p)^4}T_{\mu\nu}}$$

$$v_p=\frac{\omega}{k}$$

$$\boldsymbol{(i\hbar\gamma^{\mu}\partial_{\mu}\psi)^{4}(G_{\mu\nu}+\Lambda g_{\mu\nu})=\frac{8\pi(E_n)^4}{(\alpha)^4}\frac{G(\psi)^4}{(v_p)^8}T_{\mu\nu}}$$

$\boldsymbol{E_n=p\times C\times\frac{\alpha\times Z}{n}=\hbar\times\omega}$

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$$\left(\boldsymbol{i\hbar\gamma^{\mu}\partial_{\mu}\psi}\right)^{4}\left(\boldsymbol{G_{\mu\nu}+\Lambda g_{\mu\nu}}\right)=\frac{\boldsymbol{8\pi(\hbar\times\omega)^{4}}}{\boldsymbol{(\alpha)^{4}}}\frac{\boldsymbol{G(\psi)^{4}}}{\boldsymbol{(v_{p})^{8}}}\boldsymbol{T_{\mu\nu}}$$

$\boldsymbol{p=m\times C}$
$\boldsymbol{E=m\times C^{2}}$

$$\left(\boldsymbol{i\hbar\gamma^{\mu}\partial_{\mu}\psi}\right)^{4}\left(\boldsymbol{G_{\mu\nu}+\Lambda g_{\mu\nu}}\right)=\frac{\boldsymbol{8\pi\left(E\times\frac{\alpha\times Z}{n}\right)^{4}}}{\boldsymbol{(\alpha)^{4}}}\frac{\boldsymbol{G(\psi)^{4}}}{\boldsymbol{(v_{p})^{8}}}\boldsymbol{T_{\mu\nu}}$$

$$\left(\boldsymbol{i\hbar\gamma^{\mu}\partial_{\mu}\psi}\right)^{4}\left(\boldsymbol{G_{\mu\nu}+\Lambda g_{\mu\nu}}\right)=\frac{\boldsymbol{8\pi(E)^{4}}}{\boldsymbol{1}}\frac{\boldsymbol{G\times(\psi)^{4}}}{\boldsymbol{(v_{p})^{8}}}\boldsymbol{T_{\mu\nu}}$$

$$\boldsymbol{E=m\times C^{2}}$$

$$M_{e,p}=\frac{m_{e}}{m_{p}}$$

$$R=\frac{(m_{e})^{2}}{(m_{p})^{2}}$$

R atio of electron mass to Planck mass (David mass)

$$\left(\boldsymbol{i\hbar\gamma^{\mu}\partial_{\mu}\psi}\right)^{4}\left(\boldsymbol{G_{\mu\nu}+\Lambda g_{\mu\nu}}\right)=\frac{\boldsymbol{8\pi\left(m_{e}\times C^{2}\times\alpha\times Z\right)^{4}}}{\boldsymbol{(n)^{4}}}\frac{\boldsymbol{G\times(\psi)^{4}}}{\boldsymbol{(v_{p})^{8}}}\boldsymbol{T_{\mu\nu}}$$

$$\left(i\hbar\gamma^{\mu}\partial_{\mu}\psi\right)^{4}\left(G_{\mu\nu}+\Lambda g_{\mu\nu}\right)=\frac{8\pi(p\times\alpha)^{8}}{1}\frac{G(\psi)^{4}}{(E_{n})^{4}}T_{\mu\nu}$$

$$E_{n}=\frac{n\times h_{p}\times C}{2\pi\times r_{n}}=\hbar\times\omega$$

$$\left(i\hbar\gamma^{\mu}\partial_{\mu}\psi\right)^{4}\left(G_{\mu\nu}+\Lambda g_{\mu\nu}\right)=\frac{8\pi(2\pi\times r_{n}\times\alpha)^{4}\times(p)^{8}}{1}\frac{G\times(\psi)^{4}}{(n\times h_{p}\times C)^{4}}T_{\mu\nu}$$

$h_{p}=m_{e}\times\lambda\times\nu\times\alpha\times 2\pi\times r_{n}$
$h_{p}=p\times\alpha\times 2\pi\times r_{n}$

$$E_{n}=\frac{h_{(p)}\times C}{\lambda}$$

$$\left(i\hbar\gamma^{\mu}\partial_{\mu}\psi\right)^{4}\left(G_{\mu\nu}+\Lambda g_{\mu\nu}\right)=\frac{8\pi\left(h_{(p)}\right)^{4}\times(p)^{4}}{(\lambda\,nm\times e)^{4}}\frac{G\times(\psi)^{4}}{(\Delta E_{n})^{4}}T_{\mu\nu}\quad\frac{(C)^{4}}{(C)^{4}}$$

$$\left(i\hbar\gamma^{\mu}\partial_{\mu}\psi\right)^{4}\left(G_{\mu\nu}+\Lambda g_{\mu\nu}\right)=\frac{8\pi\left(h_{(p)}\right)^{4}\times(E_{n})^{4}}{(\lambda\,nm\times e)^{4}\times(C)^{4}}\frac{G\times(\psi)^{4}}{(\Delta E_{n})^{4}}T_{\mu\nu}$$

$$E_{n}=\frac{n\times h_{p}\times C}{2\pi\times r_{n}}=\hbar\times\omega$$

$$\left(i\hbar\gamma^{\mu}\partial_{\mu}\psi\right)^{4}\left(G_{\mu\nu}+\Lambda g_{\mu\nu}\right)=\frac{8\pi\left(h_{(p)}\right)^{4}\times\left(\frac{n\times h_{p}\times C}{2\pi\times r_{n}}\right)^{4}}{(\lambda\,nm\times e)^{4}\times(C)^{4}}\frac{G\times(\psi)^{4}}{(\Delta E_{n})^{4}}T_{\mu\nu}\quad\frac{(m_{e}\times\alpha)^{4}}{(m_{e}\times\alpha)^{4}}$$

$h_{p}=m_{e}\times\lambda\times\nu\times\alpha\times 2\pi\times r_{n}$
$h_{p}=p\times\alpha\times 2\pi\times r_{n}$

$$\left(i\hbar\gamma^{\mu}\partial_{\mu}\psi\right)^{4}\left(G_{\mu\nu}+\Lambda g_{\mu\nu}\right)=\frac{8\pi\left(h_{(p)}\right)^{4}\times\left(h_{p}\times C\right)^{4}(m_{e})^{4}}{(\lambda\,nm\times e)^{4}\times\left(h_{p}\right)^{4}}\frac{G\times(\psi)^{4}}{(\Delta E_{n})^{4}}T_{\mu\nu}$$

$\boldsymbol{p=m\times C}$

$$\left(i\hbar\gamma^{\mu}\partial_{\mu}\psi\right)^{4}\left(G_{\mu\nu}+\Lambda g_{\mu\nu}\right)=\frac{8\pi\left(h_{(p)}\right)^{4}(p)^{4}}{(\lambda\,nm\times e)^{4}}\frac{G\times(\psi)^{4}}{(\Delta E_{n})^{4}}T_{\mu\nu}\quad\frac{(2\pi\times\alpha)^{4}}{(2\pi\times\alpha)^{4}}$$

$$\boldsymbol{p\times\alpha=\frac{h_{(p)}}{\lambda}=\hbar\times k}$$

$$\left(i\hbar\gamma^{\mu}\partial_{\mu}\psi\right)^{4}\left(G_{\mu\nu}+\Lambda g_{\mu\nu}\right)=\frac{(2\pi)^{5}\times 4\,(\hbar)^{8}\times(k)^{4}}{(\lambda\,nm\times e\times\alpha)^{4}}\frac{G\times(\psi)^{4}}{(\Delta E_{n})^{4}}T_{\mu\nu}\quad\frac{C}{C}$$

$$G=\frac{(C)^{3}\times\left(l_{(p)}\right)^{2}}{\hbar}$$

$$\left(i\hbar\gamma^{\mu}\partial_{\mu}\psi\right)^{4}\left(G_{\mu\nu}+\Lambda g_{\mu\nu}\right)=\frac{(2\pi)^{5}\times 4\,(\hbar)^{7}\times(k)^{4}}{(\lambda\,nm\times e\times\alpha)^{4}\times C}\frac{(C)^{4}\times\left(l_{(p)}\right)^{2}(\psi)^{4}}{(\Delta E_{n})^{4}}T_{\mu\nu}\quad\frac{h_{(p)}\times 2\pi}{h_{(p)}\times 2\pi}$$

$$\mu_{0}\times\varepsilon_{0}=\left(\frac{1}{(C)^{2}}\right)$$

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$\boldsymbol{C = \lambda \times v}$

$$\left(i\hbar\gamma^{\mu}\partial_{\mu}\psi\right)^{4}(G_{\mu\nu} + \Lambda g_{\mu\nu}) = \frac{(2\pi)^2 \times \left(h_{(p)}\right)^4 \times 4 \times (p \times \alpha)^4}{(\mu_0 \times \varepsilon_0)^4 \times (\lambda\, nm \times e)^5} \frac{\left(l_{(p)}\right)^2 (\psi)^4}{(\Delta E_n)^5} T_{\mu\nu} \frac{(2\pi)^4}{(2\pi)^4}$$

$$\Delta E_n = \frac{h_{(p)} \times C}{\lambda\, nm \times e}$$

$$\left(i\hbar\gamma^{\mu}\partial_{\mu}\psi\right)^{4}(G_{\mu\nu} + \Lambda g_{\mu\nu}) = \frac{(2\pi)^6 \times (\hbar)^8 \times 4 \times (k)^4}{(\mu_0 \times \varepsilon_0)^2 \times (\lambda\, nm \times e)^5 \times (\alpha)^4} \frac{\left(l_{(p)}\right)^2 (\psi)^4}{(\Delta E_n)^5} T_{\mu\nu}$$

$mC\,\psi = i\hbar\gamma^{\mu}\partial_{\mu}\psi$
$mC\psi = i\hbar\gamma^{\mu}\left(\partial_{\mu} + \Gamma_{\mu}\right)\psi$
$\nabla_{\mu} = \left(\partial_{\mu} - \Gamma_{\mu}\right)$
$mC\psi = i\hbar\gamma^{\mu}\left(\nabla_{\mu} + \Gamma_{\mu}\right)\psi$

Where ∇_{μ} represents the affine derivative, Γ_{μ} is the connection coefficients, ∂_{μ} is the partial derivative

$$\left(i\hbar\gamma^{\mu}\partial_{\mu}\psi\right)^{4}(G_{\mu\nu} + \Lambda g_{\mu\nu}) = \frac{(2\pi)^6 \times 4(\hbar)^8 \times (k)^4}{(\mu_0 \times \varepsilon_0)^2 \times (\lambda\, nm \times e)^5 \times (\alpha)^4} \frac{\left(l_{(p)}\right)^2 (\psi)^4}{(\Delta E_n)^5} T_{\mu\nu}$$

This is derivation number 16

$$\mu_0 \times \varepsilon_0 = \left(\frac{1}{(C)^2}\right) \frac{m}{m}$$

$\boldsymbol{E = m \times C^2}$

$$\mu_0 \times \varepsilon_0 = \left(\frac{m}{E}\right)$$

$$E = \left(\frac{m}{\mu_0 \times \varepsilon_0}\right) \frac{\alpha}{\alpha}$$

$E_t = E \times \alpha$

$$E_t = E_n \times n$$

$$E_n = \left(\frac{m \times \alpha \times Z}{\mu_0 \times \varepsilon_0 \times n}\right) \quad \frac{C^2}{C^2}$$

$\boldsymbol{p = m \times C}$

$$E_n = \left(\frac{p \times \alpha \times Z \times C}{n}\right)$$

$$\boldsymbol{E_n} = \frac{n \times \boldsymbol{h_p} \times \boldsymbol{C}}{2\pi \times r_n} = \hbar \times \omega$$

$$\boldsymbol{p \times \alpha} = \frac{\boldsymbol{h_{(p)}}}{\boldsymbol{\lambda}} = \hbar \times \boldsymbol{k}$$

$$\hbar \times \omega = \left(\frac{\hbar \times k \times Z \times C}{n}\right)$$

$$\boldsymbol{v}_p = \frac{\omega}{k}$$

$$\boldsymbol{v}_p = \left(\frac{C}{n}\right)$$

$$E_n = \left(\frac{p \times \alpha \times Z \times C}{n}\right)$$

$$\frac{n \times \boldsymbol{h_p} \times \boldsymbol{C}}{2\pi \times r_n} = \left(\frac{p \times \alpha \times Z \times C}{n}\right)$$

$\boldsymbol{h_p} = m_e \times \boldsymbol{\lambda} \times \boldsymbol{v} \times \alpha \times \boldsymbol{2\pi} \times \boldsymbol{r_n}$
$\boldsymbol{h_p} = p \times \alpha \times \boldsymbol{2\pi} \times \boldsymbol{r_n}$

$$\boldsymbol{h_p} \times \boldsymbol{C} = \left(\frac{\boldsymbol{h_p} \times Z \times C}{n}\right)$$

$$\boldsymbol{\Delta E_n} = \frac{\boldsymbol{h_p} \times \boldsymbol{C}}{\boldsymbol{\lambda}}$$

$$\boldsymbol{\Delta E_n} = \left(\frac{\boldsymbol{h_p} \times C}{\lambda \times \boldsymbol{e}}\right)$$

This is derivation number 17

$$\mu_0 \times \varepsilon_0 = \left(\frac{1}{(C)^2}\right)$$

$\boldsymbol{C = \lambda \times v}$

$$\mu_0 \times \varepsilon_0 = \left(\frac{1}{(\lambda \times \nu)^2}\right) \frac{(\hbar)^2}{(\hbar)^2}$$

$$\hbar = \frac{h_p}{2\pi}$$

$$\mu_0 \times \varepsilon_0 = \left(\frac{(2\pi \times \hbar)^2}{(\lambda \times \nu \times h_p)^2}\right)$$

$$E_n = h_{(p)} \times \nu$$

$$\mu_0 \times \varepsilon_0 = \left(\frac{(2\pi \times \hbar)^2}{(\lambda \times E_n)^2}\right)$$

$$(E_n)^2 = \left(\frac{(2\pi \times \hbar)^2}{\mu_0 \times \varepsilon_0 \times (\lambda)^2}\right)$$

$$(E_n)^4 = \left(\frac{(2\pi \times \hbar)^2}{\mu_0 \times \varepsilon_0 \times (\lambda)^2}\right)^2$$

$$(E_n)^4 = \frac{(2\pi \times \hbar)^4}{(\mu_0 \times \varepsilon_0)^2 \times (\lambda)^4}$$

$$\boldsymbol{p} = \frac{\boldsymbol{h}_{(\boldsymbol{p})}}{\boldsymbol{\lambda}}$$

$$\hbar = \frac{h_p}{2\pi}$$

$$(E_n)^4 = \frac{(p \times \alpha)^4}{(\mu_0 \times \varepsilon_0)^2}$$

$$\boldsymbol{E_n} = \frac{n \times \boldsymbol{h_p} \times \boldsymbol{C}}{2\pi \times r_n} = \hbar \times \omega$$

$$\boldsymbol{p} \times \boldsymbol{\alpha} = \frac{\boldsymbol{h}_{(\boldsymbol{p})}}{\boldsymbol{\lambda}} = \hbar \times \boldsymbol{k}$$

$$(\hbar \times \omega)^4 = \frac{(\hbar \times k)^4}{(\mu_0 \times \varepsilon_0)^2}$$

$$\boldsymbol{v}_p = \frac{\omega}{k}$$

$$(\boldsymbol{v}_p)^4 = \frac{1}{(\mu_0 \times \varepsilon_0)^2}$$

$$(E_n)^4 = \frac{(p \times \alpha)^4}{(\mu_0 \times \varepsilon_0)^2}$$

$$\boldsymbol{E_n} = \frac{n \times \boldsymbol{h_p} \times \boldsymbol{C}}{2\pi \times r_n} = \hbar \times \omega$$

$$\left(\frac{n \times \boldsymbol{h_p} \times \boldsymbol{C}}{2\pi \times r_n}\right)^4 = \frac{(p \times \alpha)^4}{(\mu_0 \times \varepsilon_0)^2}$$

$$\boldsymbol{h_p} = m_e \times \boldsymbol{\lambda} \times \boldsymbol{v} \times \alpha \times \boldsymbol{2\pi} \times \boldsymbol{r_n}$$

$$\boldsymbol{h_p} = p \times \alpha \times \boldsymbol{2\pi} \times \boldsymbol{r_n}$$

$$(\boldsymbol{h_p} \times \boldsymbol{C})^4 = \frac{(\boldsymbol{h_p})^4}{(\mu_0 \times \varepsilon_0)^2}$$

$$\boldsymbol{\Delta E_n} = \frac{\boldsymbol{h_p} \times \boldsymbol{C}}{\boldsymbol{\lambda}}$$

$$(\boldsymbol{\Delta E_n})^4 = \frac{(\boldsymbol{h_p})^4}{(\lambda \times \boldsymbol{e})^4 \times (\mu_0 \times \varepsilon_0)^2}$$

This is derivation number 18

$$\mu_0 \times \varepsilon_0 = \left(\frac{m \times \alpha \times Z}{E_n \times n}\right)$$

$$\mu_0 \times \varepsilon_0 = \left(\frac{(2\pi \times \hbar)^2}{(\lambda \times E_n)^2}\right)$$

$$\left(\frac{m \times \alpha \times Z}{E_n \times n}\right) = \left(\frac{(2\pi \times \hbar)^2}{(\lambda \times E_n)^2}\right)$$

$$\left(\frac{m \times \alpha \times Z}{n}\right) = \left(\frac{(2\pi \times \hbar)^2}{E_n \times (\lambda)^2}\right)$$

$$\left(\frac{m \times \alpha \times Z}{n}\right) = \left(\frac{(2\pi \times \hbar)^2}{E_n \times (\lambda)^2}\right) \quad \left(\frac{(C)^2}{(C)^2}\right)$$

$$\boldsymbol{E = m \times C^2}$$

$$\left(\frac{E \times \alpha \times Z}{n}\right) = \left(\frac{(2\pi \times \hbar \times C)^2}{E_n \times (\lambda)^2}\right)$$

$$E_t = E \times \alpha$$

$$E_t = E_n \times n$$

$$(E_n)^2 = \left(\frac{(2\pi \times \hbar \times C)^2}{(\lambda)^2}\right)$$

$$E_n = \left(\frac{2\pi \times \hbar \times C}{\lambda}\right)$$

$$\boldsymbol{E_n} = \frac{n \times \boldsymbol{h_p} \times \boldsymbol{C}}{2\pi \times r_n} = \hbar \times \omega$$

$$\frac{n \times \boldsymbol{h_p} \times \boldsymbol{C}}{2\pi \times r_n} = \left(\frac{2\pi \times \hbar \times C}{\lambda}\right) \quad \frac{2\pi \times m \times \alpha}{2\pi \times m \times \alpha}$$

$$\boldsymbol{h_p} = m_e \times \boldsymbol{\lambda} \times \boldsymbol{v} \times \alpha \times \boldsymbol{2\pi} \times \boldsymbol{r_n}$$

$$\boldsymbol{h_p} = p \times \alpha \times \boldsymbol{2\pi} \times \boldsymbol{r_n}$$

$$\boldsymbol{h_p} \times \boldsymbol{C} = \left(\frac{(2\pi \times \hbar)^2}{\lambda \times m \times \alpha}\right)$$

$$\boldsymbol{p} = \frac{\boldsymbol{h_{(p)}}}{\boldsymbol{\lambda}}$$

$$\boldsymbol{h_p} \times \boldsymbol{C} = \left(\frac{2\pi \times \hbar \times \boldsymbol{p}}{\lambda \times m \times \alpha}\right)$$

$$\boldsymbol{p = m \times C}$$

$$\boldsymbol{\Delta E_n} = \left(\frac{2\pi \times \hbar \times \boldsymbol{C}}{\lambda \times \boldsymbol{e}}\right)$$

$$\boldsymbol{\Delta E_n} = \frac{\boldsymbol{-13.605693099\ eV}}{\boldsymbol{1}} \times \left(\frac{\boldsymbol{(Z)^2}}{\boldsymbol{(n_2)^2}} - \frac{\boldsymbol{(Z)^2}}{\boldsymbol{(n_1)^2}}\right)$$

This is derivation number 19

$$F_p \times G = (C)^4$$

Where F_p represents the Planck force

$$\mu_0 \times \varepsilon_0 = \left(\frac{1}{(C)^2}\right)$$

$$(\mu_0 \times \varepsilon_0)^2 = \left(\frac{1}{F_p \times G}\right)$$

$$(E_n)^4 = \left(\frac{(2\pi \times \hbar)^2}{\mu_0 \times \varepsilon_0 \times (\lambda)^2}\right)^2$$

$$(E_n)^4 = \frac{(2\pi \times \hbar)^4 \times F_p \times G}{(\lambda)^4}$$

$$\boldsymbol{p} = \frac{\boldsymbol{h_{(p)}}}{\boldsymbol{\lambda}}$$

$$(E_n)^4 = (p \times \alpha)^4 \times F_p \times G$$

$$\boldsymbol{E_n} = \frac{n \times \boldsymbol{h_p} \times \boldsymbol{C}}{2\pi \times r_n} = \hbar \times \omega$$

$$\boldsymbol{p \times \alpha} = \frac{\boldsymbol{h_{(p)}}}{\boldsymbol{\lambda}} = \hbar \times \boldsymbol{k}$$

$$(\hbar \times \omega)^4 = (\hbar \times k)^4 \times F_p \times G$$

$$\boldsymbol{v}_p = \frac{\omega}{k}$$

$$(\boldsymbol{v}_p)^4 = F_p \times G$$

$$(\boldsymbol{v}_g)^4 = F_p \times G$$

$$(E_n)^4 = (p \times \alpha)^4 \times F_p \times G$$

$$\boldsymbol{E_n} = \frac{n \times \boldsymbol{h_p} \times \boldsymbol{C}}{2\pi \times r_n} = \hbar \times \omega$$

$$\left(\frac{n \times \boldsymbol{h_p} \times \boldsymbol{C}}{2\pi \times r_n}\right)^4 = (p \times \alpha)^4 \times F_p \times G$$

$$\boldsymbol{h_p} = m_e \times \boldsymbol{\lambda} \times \boldsymbol{v} \times \alpha \times \boldsymbol{2\pi} \times \boldsymbol{r_n}$$

$$\boldsymbol{h_p} = p \times \alpha \times \boldsymbol{2\pi} \times \boldsymbol{r_n}$$

$$(\boldsymbol{h_p} \times \boldsymbol{C})^4 = (\boldsymbol{h_p})^4 \times F_p \times G$$

$$\boldsymbol{\Delta E_n} = \frac{\boldsymbol{h_p} \times \boldsymbol{C}}{\boldsymbol{\lambda}}$$

$$(\boldsymbol{\Delta E_n})^4 = \frac{(\boldsymbol{h_p})^4 \times F_p \times G}{(\lambda \times \boldsymbol{e})^4}$$

This is derivation number 20

$$(C)^4 = \left(\frac{1}{\mu_0 \times \varepsilon_0}\right)^2$$

$$F_p \times G = (C)^4$$

$$F_p \times G = \left(\frac{1}{\mu_0 \times \varepsilon_0}\right)^2$$

$$(E_n)^4 = \frac{(2\pi \times \hbar)^4}{(\mu_0 \times \varepsilon_0)^2 \times (\lambda)^4}$$

$$(E_n)^4 = \frac{(2\pi \times \hbar)^4 \times F_p \times G}{(\lambda)^4}$$

This is derivation number 21

$$E_t = E \times \alpha$$

$$E_t = E_n \times n$$

$$E \times \alpha = E_n \times n$$

$$\boldsymbol{E} = \boldsymbol{m} \times \boldsymbol{C^2} = \boldsymbol{m} \times \boldsymbol{v_p}^2 = \boldsymbol{m} \times \boldsymbol{v_g}^2$$

$$E_n = h_{(p)} \times \nu$$

$$m \times C^2 \times \alpha = h_{(p)} \times \nu \times n$$

$$(m \times C^2 \times \alpha)^2 = \left(h_{(p)} \times \nu \times n\right)^2$$

$$F_p \times G = (C)^4$$

$$F_p \times G \times (m \times \alpha)^2 = \left(h_{(p)} \times \nu \times n\right)^2$$

$$(\mu_0 \times \varepsilon_0)^2 = \left(\frac{1}{F_p \times G}\right)$$

$$\left(\frac{(m \times \alpha)^2}{(\mu_0 \times \varepsilon_0)^2}\right) = \left(h_{(p)} \times \nu \times n\right)^2 \frac{C^2}{C^2}$$

$$\boldsymbol{p} = \boldsymbol{m} \times \boldsymbol{C}$$

$$\left(\frac{(p \times \alpha)^2}{(\mu_0 \times \varepsilon_0)^2}\right) = \left(h_{(p)} \times \nu \times n \times C\right)^2$$

$$\mu_0 \times \varepsilon_0 = \left(\frac{1}{(C)^2}\right)$$

$$\left(\frac{(p \times \alpha)^2}{\mu_0 \times \varepsilon_0}\right) = (E_n)^2$$

$$\boldsymbol{E_n} = \frac{n \times \boldsymbol{h_p} \times \boldsymbol{C}}{2\pi \times r_n} = \hbar \times \omega$$

$$\left(\frac{(p \times \alpha)^2}{\mu_0 \times \varepsilon_0}\right) = \left(\frac{n \times \boldsymbol{h_p} \times \boldsymbol{C}}{2\pi \times r_n}\right)^2$$

$$\left(\frac{n \times \boldsymbol{h_p} \times \boldsymbol{C}}{2\pi \times r_n}\right)^2 = \left(\frac{(p \times \alpha)^2}{\mu_0 \times \varepsilon_0}\right)$$

$$\boldsymbol{h_p} = m_e \times \boldsymbol{\lambda} \times \boldsymbol{v} \times \alpha \times \boldsymbol{2\pi} \times \boldsymbol{r_n}$$

$$\boldsymbol{h_p} = p \times \alpha \times \boldsymbol{2\pi} \times \boldsymbol{r_n}$$

$$(\boldsymbol{h_p} \times \boldsymbol{C})^2 = \left(\frac{(\boldsymbol{h_p})^2}{\mu_0 \times \varepsilon_0}\right)$$

$$\boldsymbol{\Delta E_n} = \frac{\boldsymbol{h_p} \times \boldsymbol{C}}{\boldsymbol{\lambda}}$$

$$(\boldsymbol{\Delta E_n})^2 = \left(\frac{(\boldsymbol{h_p})^2}{(\lambda \times \boldsymbol{e})^2 \times \mu_0 \times \varepsilon_0}\right)$$

This is derivation number 22

$$\left(l_{(p)}\right)^2 = \frac{\hbar \times G}{(C)^3}$$

$$\alpha = \frac{1}{4\pi \times \varepsilon_0} \frac{(e)^2}{\hbar \times C}$$

$$\left(m_{(p)}\right)^2 = \frac{\hbar \times C}{G}$$

$$\alpha = \frac{1}{4\pi \times \varepsilon_0} \frac{(e)^2}{\left(m_{(p)}\right)^2 \times G}$$

$$G = \frac{1}{4\pi \times \varepsilon_0} \frac{(e)^2}{\left(m_{(p)}\right)^2 \times \alpha}$$

$$\left(l_{(p)}\right)^2 = \frac{\hbar}{(C)^3 \times 4\pi \times \varepsilon_0} \frac{(e)^2}{\left(m_{(p)}\right)^2 \times \alpha}$$

$$\left(m_{(p)}\right)^2 = \frac{\hbar \times C}{G}$$

$$\left(l_{(p)}\right)^2 = \frac{G}{(C)^4 \times 4\pi \times \varepsilon_0} \frac{(e)^2}{\alpha}$$

$$\frac{\left(l_{(p)}\right)^2}{(e)^2} = \frac{G}{(C)^4 \times 4\pi \times \varepsilon_0} \frac{1}{\alpha}$$

This is derivation number 23

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi}{1} \frac{G}{(C)^4} T_{\mu\nu}$$

$$G = \frac{(C)^3 \times \left(l_{(p)}\right)^2}{\hbar}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi}{\hbar} \frac{(C)^3 \times \left(l_{(p)}\right)^2}{(C)^4} T_{\mu\nu} \quad \frac{C}{C}$$

$$\mu_0 \times \varepsilon_0 = \left(\frac{1}{(C)^2}\right)$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi}{(\mu_0 \times \varepsilon_0)^2 \times \hbar} \frac{\left(l_{(p)}\right)^2}{(C)^5} T_{\mu\nu} \quad \frac{(\hbar)^4}{(\hbar)^4}$$

$$\boldsymbol{C = \lambda \times \nu}$$

$$E_n = h_{(p)} \times \nu$$

$$\hbar = \frac{h_p}{2\pi}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^6 \times 4 \times (\hbar)^4}{(\lambda\, nm)^5 \times (\mu_0 \times \varepsilon_0)^2 \times (\boldsymbol{e})^5} \frac{\left(l_{(p)}\right)^2}{(\boldsymbol{\Delta E_n})^5} T_{\mu\nu}$$

$$\hbar = m_p \times \boldsymbol{C} \times l_{(p)}$$

$$\mu_0 \times \varepsilon_0 = \left(\frac{1}{(C)^2}\right)$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^6 \times 4 \times \left(m_p\right)^4}{(\lambda\, nm \times e)^5 \times (\mu_0 \times \varepsilon_0)^4} \frac{\left(l_{(p)}\right)^6}{(\Delta E_n)^5} T_{\mu\nu}$$

This is derivation number 24

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi}{1} \frac{G}{(C)^4} T_{\mu\nu}$$

$$G = \frac{(C)^3 \times \left(l_{(p)}\right)^2}{\hbar}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi}{\hbar} \frac{(C)^3 \times \left(l_{(p)}\right)^2}{(C)^4} T_{\mu\nu}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi}{\hbar} \frac{\left(l_{(p)}\right)^2}{C} T_{\mu\nu}$$

$$\boldsymbol{C = \lambda \times \nu}$$

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$$E_n = h_{(p)} \times \nu$$

$$\hbar = \frac{h_p}{2\pi}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^2 \times 4}{\lambda\, nm \times \boldsymbol{e}} \frac{\left(l_{(p)}\right)^2}{\boldsymbol{\Delta E_n}} T_{\mu\nu}$$

This is derivation number 25

$$\lambda\, nm = \frac{1}{R_\infty \times \left(\frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_2})^2} - \frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_1})^2}\right)}$$

$$R_\infty = 1.0973731731 \times 10^7\ m^{-1}$$

$$\boldsymbol{\Delta E_n} = \frac{\boldsymbol{h_p} \times \boldsymbol{C}}{\boldsymbol{\lambda}}$$

$$\boldsymbol{\Delta E_n} = -\frac{\boldsymbol{h_p} \times \boldsymbol{C} \times \alpha}{\boldsymbol{2e} \times \boldsymbol{\lambda}} \times \left(\frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_2})^2} - \frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_1})^2}\right)$$

$$n \times \lambda = 2\pi \times r_n$$

$$\lambda = \frac{2\pi \times r_n}{n}$$

$$\boldsymbol{\Delta E_n} = -\frac{\boldsymbol{h_p} \times \boldsymbol{C} \times \alpha}{\boldsymbol{2e} \times \frac{2\pi \times r_n}{n}} \times \left(\frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_2})^2} - \frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_1})^2}\right)$$

$$\boldsymbol{\Delta E_n} = -\frac{n \times \hbar \times \boldsymbol{C} \times \alpha}{\boldsymbol{2e} \times r_n} \times \left(\frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_2})^2} - \frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_1})^2}\right)$$

$$\boldsymbol{\Delta E_n} = -\frac{n \times \hbar \times \boldsymbol{C} \times \alpha}{\boldsymbol{2e} \times 5.29177202590 \times 10^{-11}} \times \left(\frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_2})^2} - \frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_1})^2}\right)$$

This is derivation number 26

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi}{1} \frac{G}{(C)^4} T_{\mu\nu}$$

$$F_p \times G = (C)^4$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi}{1} \frac{1}{F_p} T_{\mu\nu}$$

$$F_p = \frac{\hbar}{l_{(p)} \times t_{(p)}}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi}{1} \frac{l_{(p)} \times t_{(p)}}{\hbar} T_{\mu\nu} \quad \frac{\nu}{\nu}$$

$$E_n = h_{(p)} \times \nu$$

$$\hbar = \frac{h_p}{2\pi}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^2 \times 4 \times \nu}{1} \frac{l_{(p)} \times t_{(p)}}{E_n} T_{\mu\nu} \quad \frac{\lambda}{\lambda}$$

$$\boldsymbol{C} = \boldsymbol{\lambda} \times \boldsymbol{\nu}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^2 \times 4 \times \boldsymbol{C}}{\lambda} \frac{l_{(p)} \times t_{(p)}}{E_n} T_{\mu\nu} \quad \frac{C}{C}$$

$$\mu_0 \times \varepsilon_0 = \left(\frac{1}{(C)^2}\right)$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^2 \times 4}{\lambda \times \mu_0 \times \varepsilon_0 \times C} \frac{l_{(p)} \times t_{(p)}}{E_n} T_{\mu\nu}$$

$$\boldsymbol{C} = \boldsymbol{\lambda} \times \boldsymbol{\nu}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^2 \times 4}{(\lambda)^2 \times \mu_0 \times \varepsilon_0 \times \boldsymbol{\nu}} \frac{l_{(p)} \times t_{(p)}}{E_n} T_{\mu\nu} \quad \frac{\hbar}{\hbar}$$

$$E_n = h_{(p)} \times \nu$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^3 \times 4 \times \hbar}{(\lambda)^2 \times \mu_0 \times \varepsilon_0} \frac{l_{(p)} \times t_{(p)}}{(E_n)^2} T_{\mu\nu}$$

$$F_p = \frac{\hbar}{l_{(p)} \times t_{(p)}}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^3 \times 4 \times F_p}{(\lambda)^2 \times \mu_0 \times \varepsilon_0} \frac{\left(l_{(p)} \times t_{(p)}\right)^2}{(E_n)^2} T_{\mu\nu}$$

$F_p \times G = (C)^4$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^3 \times 4 \times (C)^4}{(\lambda)^2 \times \mu_0 \times \varepsilon_0 \times G} \frac{\left(l_{(p)} \times t_{(p)}\right)^2}{(E_n)^2} T_{\mu\nu} \qquad \frac{C \times \hbar}{C \times \hbar}$$

$(m_p)^2 = \frac{\hbar \times C}{G}$

$\mu_0 \times \varepsilon_0 = \left(\frac{1}{(C)^2}\right)$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^3 \times 4 \times (m_p)^2}{(\lambda)^2 \times (\mu_0 \times \varepsilon_0)^3 \times C \times \hbar} \frac{\left(l_{(p)} \times t_{(p)}\right)^2}{(E_n)^2} T_{\mu\nu}$$

$\boldsymbol{C = \lambda \times \nu}$

$$E_n = h_{(p)} \times \nu$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^4 \times 4 \times (m_p)^2}{(\lambda)^3 \times (\mu_0 \times \varepsilon_0)^3} \frac{\left(l_{(p)} \times t_{(p)}\right)^2}{(E_n)^3} T_{\mu\nu} \qquad \frac{(e)^3}{(e)^3}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^4 \times 4 \times (m_p)^2}{(\lambda \times e)^3 \times (\mu_0 \times \varepsilon_0)^3} \frac{\left(l_{(p)} \times t_{(p)}\right)^2}{(\boldsymbol{\Delta E_n})^3} T_{\mu\nu}$$

This is derivation number 27

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi}{1} \frac{G}{(C)^4} T_{\mu\nu}$$

$G = \frac{(C)^5 \times \left(t_{(p)}\right)^2}{\hbar}$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi}{\hbar} \frac{(C)^5 \times \left(t_{(p)}\right)^2}{(C)^4} T_{\mu\nu} \qquad \frac{C}{C}$$

$$\mu_0 \times \varepsilon_0 = \left(\frac{1}{(C)^2}\right)$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi}{(\mu_0 \times \varepsilon_0)^3 \times \hbar} \frac{\left(t_{(p)}\right)^2}{(C)^5} T_{\mu\nu} \qquad \frac{\left(\boldsymbol{h_{(p)}}\right)^5}{\left(\boldsymbol{h_{(p)}}\right)^5}$$

$\boldsymbol{C = \lambda \times \nu}$

$$E_n = h_{(p)} \times \nu$$

$\hbar = \frac{h_p}{2\pi}$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^6 \times 4 \times (\hbar)^4}{(\lambda\, nm)^5 \times (\mu_0 \times \varepsilon_0)^3 \times (\boldsymbol{e})^5} \frac{\left(t_{(p)}\right)^2}{(\boldsymbol{\Delta E_n})^5} T_{\mu\nu}$$

$\hbar = m_p \times \boldsymbol{C^2} \times t_{(p)}$

$$\mu_0 \times \varepsilon_0 = \left(\frac{1}{(C)^2}\right)$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^6 \times 4 \times (m_p)^4}{(\lambda\, nm)^5 \times (\mu_0 \times \varepsilon_0)^7 \times (\boldsymbol{e})^5} \frac{\left(t_{(p)}\right)^6}{(\boldsymbol{\Delta E_n})^5} T_{\mu\nu}$$

This is derivation number 28

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^4 \times 4 \times (m_p)^2}{(\lambda \times e)^3 \times (\mu_0 \times \varepsilon_0)^3} \frac{\left(l_{(p)} \times t_{(p)}\right)^2}{(\boldsymbol{\Delta E_n})^3} T_{\mu\nu}$$

$(m_p)^2 = \frac{\hbar \times C}{G}$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^4 \times 4 \times \hbar \times C}{(\lambda \times e)^3 \times (\mu_0 \times \varepsilon_0)^3 \times G} \frac{\left(l_{(p)} \times t_{(p)}\right)^2}{(\boldsymbol{\Delta E_n})^3} T_{\mu\nu}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi}{1} \frac{G}{(C)^4} T_{\mu\nu}$$

$$\boldsymbol{G_{\mu\nu} + \Lambda g_{\mu\nu} - T_{\mu\nu} = \frac{8\pi \times G}{C^4}}$$

$$\boldsymbol{G_{\mu\nu} + \Lambda g_{\mu\nu} - T_{\mu\nu}} = \frac{(2\pi)^4 \times 4 \times \hbar \times C}{(\lambda \times e)^3 \times (\mu_0 \times \varepsilon_0)^3 \times G} \frac{\left(l_{(p)} \times t_{(p)}\right)^2}{(\boldsymbol{\Delta E_n})^3}$$

$$(\boldsymbol{G})^2 = \frac{(2\pi)^4 \times 4 \times \hbar \times \boldsymbol{C^5}}{(\lambda \times e)^3 \times (\mu_0 \times \varepsilon_0)^3 \times \boldsymbol{8\pi}} \frac{\left(l_{(p)} \times t_{(p)}\right)^2}{(\boldsymbol{\Delta E_n})^3} \qquad \frac{l_{(p)} \times t_{(p)}}{l_{(p)} \times t_{(p)}}$$

$$F_p = \frac{\hbar}{l_{(p)} \times t_{(p)}}$$

$$(\boldsymbol{G})^2 = \frac{(2\pi)^4 \times 4 \times F_p \times \boldsymbol{C^5}}{(\lambda \times e)^3 \times (\mu_0 \times \varepsilon_0)^3 \times \boldsymbol{8\pi}} \frac{\left(l_{(p)} \times t_{(p)}\right)^3}{(\boldsymbol{\Delta E_n})^3}$$

$$F_p \times G = (C)^4$$

$$(\boldsymbol{G})^3 = \frac{(2\pi)^4 \times 4 \times \boldsymbol{C^9}}{(\lambda \times e)^3 \times (\mu_0 \times \varepsilon_0)^3 \times \boldsymbol{8\pi}} \frac{\left(l_{(p)} \times t_{(p)}\right)^3}{(\boldsymbol{\Delta E_n})^3}$$

$$\mu_0 \times \varepsilon_0 = \left(\frac{1}{(C)^2}\right)$$

$$(\boldsymbol{G})^3 = \frac{(2\pi)^4 \times 4 \times C}{(\lambda \times e)^3 \times (\mu_0 \times \varepsilon_0)^7 \times \boldsymbol{8\pi}} \frac{\left(l_{(p)} \times t_{(p)}\right)^3}{(\boldsymbol{\Delta E_n})^3}$$

$$(\boldsymbol{G})^3 = \frac{(2\pi)^4 \times 4 \times \boldsymbol{C^{15}}}{(\lambda \times e)^3 \times \boldsymbol{8\pi}} \frac{\left(l_{(p)} \times t_{(p)}\right)^3}{(\boldsymbol{\Delta E_n})^3}$$

This is derivation number 29

$$\boldsymbol{\Delta E_n} = -\frac{\boldsymbol{h_p} \times \nu \times \alpha}{\boldsymbol{2e}} \times \left(\frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_2})^2} - \frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_1})^2}\right)$$

$$\boldsymbol{E_n} = \frac{\boldsymbol{h_p} \times \boldsymbol{C}}{\boldsymbol{\lambda}}$$

$$\boldsymbol{\Delta}\ \boldsymbol{h_p} \times \nu = -\frac{\boldsymbol{h_p} \times \nu \times \alpha}{\boldsymbol{2e}} \times \left(\frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_2})^2} - \frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_1})^2}\right)$$

$$\boldsymbol{\Delta\nu} = -\frac{\nu \times \alpha}{\boldsymbol{2}} \times \left(\frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_2})^2} - \frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_1})^2}\right)$$

$$\nu = \frac{\nu \times (n)^2}{2\pi \times r_n \times \alpha \times Z}$$

$$\boldsymbol{\Delta\nu} = -\frac{\frac{\nu \times (n)^2}{2\pi \times r_n \times \alpha} \times \alpha}{\boldsymbol{2}} \times \left(\frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_2})^2} - \frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_1})^2}\right)$$

$$\boldsymbol{\Delta\nu} = -\frac{\nu \times (n)^2}{4\pi \times r_n} \times \left(\frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_2})^2} - \frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_1})^2}\right)$$

$$\boldsymbol{\Delta\nu} = -\frac{2187691.261}{4\pi \times 5.29177202590 \times 10^{-11}} \times \left(\frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_2})^2} - \frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_1})^2}\right)$$

$$\boldsymbol{\nu} = \frac{\boldsymbol{\Delta\nu} \times \boldsymbol{2}}{\boldsymbol{\alpha}} \times \frac{1}{\left(\frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_1})^2} - \frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_2})^2}\right)}$$

$$\boldsymbol{\Delta\nu} = \frac{\boldsymbol{-3.289842008 \times 10^{15}\ eV}}{\boldsymbol{1}} \times \left(\frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_2})^2} - \frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_1})^2}\right)$$

This is derivation number 30

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^4 \times 4 \times \left(m_p\right)^2}{(\lambda \times e)^3 \times \left(\mu_0 \times \varepsilon_0\right)^3} \frac{\left(l_{(p)} \times t_{(p)}\right)^2}{(\boldsymbol{\Delta E_n})^3} T_{\mu\nu}$$

$$F_p = \frac{\hbar}{l_{(p)} \times t_{(p)}} = \frac{(C)^4}{\boldsymbol{G}} = a_p \times m_p$$

$$a_p \times m_p = \frac{\hbar}{l_{(p)} \times t_{(p)}}$$

$$l_{(p)} \times t_{(p)} \times m_p = \frac{\hbar}{a_p}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^4 \times 4 \times (\hbar)^2}{(\lambda\,nm \times e)^3 \times \left(\mu_0 \times \varepsilon_0\right)^3 \times \left(a_p\right)^2} \frac{1}{(\boldsymbol{\Delta E_n})^3} T_{\mu\nu}$$

This is derivation number 31

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi}{1} \frac{G}{(C)^4} T_{\mu\nu}$$

$$F_p = \frac{(C)^4}{\boldsymbol{G}}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi}{1} \frac{1}{F_p} T_{\mu\nu}$$

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$$F_p = \frac{\hbar}{l_{(p)} \times t_{(p)}}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi}{\hbar} \frac{l_{(p)} \times t_{(p)}}{1} T_{\mu\nu} \qquad \frac{C}{C}$$

$$\boldsymbol{\Delta E_n} = \frac{\boldsymbol{h_p \times C}}{\boldsymbol{\lambda}}$$

$$\boldsymbol{C} = \frac{\mathbf{1}}{\sqrt{\boldsymbol{\mu_0 \times \varepsilon_0}}}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^2 \times 4}{\sqrt{\mu_0 \times \varepsilon_0} \times \lambda\, nm} \frac{l_{(p)} \times t_{(p)}}{\boldsymbol{\Delta E_n}} T_{\mu\nu}$$

This is derivation number 32

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi}{1} \frac{G}{(C)^4} T_{\mu\nu}$$

$$F_p = \frac{(C)^4}{\boldsymbol{G}}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi}{1} \frac{1}{F_p} T_{\mu\nu}$$

$$F_p = a_p \times m_p$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi}{1} \frac{1}{a_p \times m_p} T_{\mu\nu}$$

$$m_p = \frac{\boldsymbol{E_p}}{\boldsymbol{C^2}}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi}{1} \frac{\boldsymbol{C^2}}{a_p \times \boldsymbol{E_p}} T_{\mu\nu}$$

$$\mu_0 \times \varepsilon_0 = \left(\frac{1}{(C)^2}\right)$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi}{\mu_0 \times \varepsilon_0} \frac{1}{a_p \times \boldsymbol{E_p}} T_{\mu\nu}$$

This is derivation number 33

$$n \times \lambda = 2\pi \times r_n$$

$$n \times \lambda = 2 \times d \times sin(\Theta)$$

Bragg's law

$$2\pi \times r_n = 2 \times d \times sin(\Theta)$$

This is derivation number 34

$$G = \frac{\hbar \times C}{\left(m_{(p)}\right)^2}$$

$$(G)^2 = \left(\frac{\hbar \times C}{\left(m_{(p)}\right)^2}\right)^2$$

$$\boldsymbol{C} = \frac{\mathbf{1}}{\sqrt{\boldsymbol{\mu_0 \times \varepsilon_0}}}$$

$$(G)^2 = \frac{(\hbar)^2}{\boldsymbol{\mu_0 \times \varepsilon_0} \times \left(m_{(p)}\right)^4}$$

$$m_p = \frac{\boldsymbol{E_p}}{\boldsymbol{C^2}}$$

$$(G)^2 = \frac{(\hbar)^2 \times (C)^8}{\boldsymbol{\mu_0 \times \varepsilon_0} \times \left(\boldsymbol{E_p}\right)^4}$$

$$\boldsymbol{C} = \frac{\mathbf{1}}{\sqrt{\boldsymbol{\mu_0 \times \varepsilon_0}}}$$

$$(G)^2 = \frac{(\hbar)^2}{(\boldsymbol{\mu_0 \times \varepsilon_0})^5 \times \left(\boldsymbol{E_p}\right)^4}$$

This is derivation number 35

$$\boldsymbol{\Delta E_n} = \frac{\boldsymbol{h_p \times C}}{\lambda\, nm \times e}$$

$$C = \frac{1}{\sqrt{\mu_0 \times \varepsilon_0}}$$

$$\Delta E_n = \frac{h_p}{\sqrt{\mu_0 \times \varepsilon_0} \times \lambda\, nm \times e}$$

This is derivation number 36

$$(\,l_{(p)})^2 = \frac{\hbar \times G}{(C)^3} \qquad \frac{C}{C}$$

$$\hbar \times C = \frac{(\,l_{(p)})^2 \times (C)^4}{G}$$

$$\Delta E_n = \frac{h_p \times C}{\lambda\, nm \times e}$$

$$\Delta E_n = \frac{2\pi \times (\,l_{(p)})^2 \times (C)^4}{\lambda\, nm \times e \times G}$$

$$C = \frac{1}{\sqrt{\mu_0 \times \varepsilon_0}}$$

$$\Delta E_n = \frac{2\pi \times (\,l_{(p)})^2}{(\,\mu_0 \times \varepsilon_0\,)^2 \times \lambda\, nm \times e \times G}$$

This is derivation number 37

$$(\,t_{(p)})^2 = \frac{\hbar \times G}{(C)^5} \qquad \frac{C}{C}$$

$$\hbar \times C = \frac{(\,t_{(p)})^2 \times (C)^6}{G}$$

$$\Delta E_n = \frac{h_p \times C}{\lambda\, nm \times e}$$

$$\Delta E_n = \frac{2\pi \times (\,t_{(p)})^2 \times (C)^6}{\lambda\, nm \times e \times G}$$

$$C = \frac{1}{\sqrt{\mu_0 \times \varepsilon_0}}$$

$$\Delta E_n = \frac{2\pi \times (\,t_{(p)})^2}{(\,\mu_0 \times \varepsilon_0\,)^3 \times \lambda\, nm \times e \times G}$$

This is derivation number 38

$$F_p = \frac{\hbar}{l_{(p)} \times t_{(p)}} = \frac{(C)^4}{G} = a_p \times m_p$$

$$\frac{(C)^4}{G} = \frac{\hbar}{l_{(p)} \times t_{(p)}} \qquad \frac{C}{C}$$

$$\frac{(C)^5}{G} = \frac{\hbar \times C}{l_{(p)} \times t_{(p)}}$$

$$\left(\frac{(C)^5}{G}\right)^2 = \left(\frac{\hbar \times C}{l_{(p)} \times t_{(p)}}\right)^2$$

$$\Delta E_n = \frac{h_p \times C}{\lambda\, nm \times e}$$

$$\left(\frac{(C)^5}{G}\right)^2 = \left(\frac{\Delta E_n \times \lambda\, nm \times e}{2\pi \times l_{(p)} \times t_{(p)}}\right)^2$$

$$(G)^2 = \left(\frac{2\pi \times l_{(p)} \times t_{(p)} \times (C)^5}{\Delta E_n \times \lambda\, nm \times e}\right)^2$$

$$C = \frac{1}{\sqrt{\mu_0 \times \varepsilon_0}}$$

$$(G)^2 = \frac{1}{(\,\mu_0 \times \varepsilon_0)^5} \left(\frac{2\pi \times l_{(p)} \times t_{(p)}}{\Delta E_n \times \lambda\, nm \times e}\right)^2$$

This is derivation number 39

$$E = m \times C^2 + p \times C$$

$$C = \lambda \times \nu$$

$$\boldsymbol{E} = \boldsymbol{m} \times (\boldsymbol{\lambda} \times \boldsymbol{v})^2 + \boldsymbol{p} \times (\boldsymbol{\lambda} \times \boldsymbol{v}) \ \frac{(\boldsymbol{2\pi})^2}{(\boldsymbol{2\pi})^2}$$

$$\boldsymbol{k} = \frac{\boldsymbol{2\pi}}{\boldsymbol{\lambda}}$$

$$\omega = 2\pi \times \boldsymbol{v}$$

$$\boldsymbol{E} = \boldsymbol{m} \times \frac{(\omega)^2}{(k)^2} + p \times \frac{\omega}{k}$$

$$\boldsymbol{v}_p = \frac{\omega}{k}$$

$$\boldsymbol{E}_{sqr} = \boldsymbol{m} \times (\boldsymbol{v}_p)^2 + p \times \boldsymbol{v}_p$$

$$\boldsymbol{E}_{sqr} = \boldsymbol{m} \times (\boldsymbol{v}_g)^2 + p \times \boldsymbol{v}_g$$

$\boldsymbol{v}_p$ is the Phase Velocity

This is derivation number 40

$$T_H = \frac{\hbar \times \boldsymbol{C}^3}{8\pi \times \boldsymbol{G} \times M \times k_B}$$

$$\boldsymbol{C} = \boldsymbol{\lambda} \times \boldsymbol{v}$$

$$T_H = \frac{\hbar \times (\boldsymbol{\lambda} \times \boldsymbol{v})^3}{8\pi \times \boldsymbol{G} \times M \times k_B} \ \frac{(\boldsymbol{2\pi})^3}{(\boldsymbol{2\pi})^3}$$

$$\boldsymbol{k} = \frac{\boldsymbol{2\pi}}{\boldsymbol{\lambda}}$$

$$\omega = 2\pi \times \boldsymbol{v}$$

$$T_H = \frac{\hbar}{8\pi \times \boldsymbol{G} \times M \times k_B} \times \frac{(\omega)^3}{(k)^3}$$

$$\boldsymbol{v}_p = \frac{\omega}{k}$$

$$T_H = \frac{\hbar \times (\boldsymbol{v}_p)^3}{8\pi \times \boldsymbol{G} \times M \times k_B}$$

$$T_H = \frac{\hbar \times (\boldsymbol{v}_g)^3}{8\pi \times \boldsymbol{G} \times M \times k_B}$$

$\boldsymbol{v}_p$ is the Phase Velocity

This is derivation number 41

$$F_c = m \times a$$

$$a_c = \frac{(\omega)^2 \times r_n \times (\alpha)^2 \times (\boldsymbol{Z})^2}{(n)^4}$$

$$F_c = m \times \frac{(\omega)^2 \times r_n \times (\alpha)^2 \times (\boldsymbol{Z})^2}{(n)^4}$$

F_c is the Centripetal force

$$F_c = m \times a$$

$$a_c = \frac{k \times (\boldsymbol{C})^2 \times (\alpha)^2 \times (\boldsymbol{Z})^2}{(n)^3}$$

$$\boldsymbol{C} = \frac{\boldsymbol{\omega}}{\boldsymbol{k}}$$

$$a_c = \frac{\omega \times \boldsymbol{C} \times (\alpha)^2 \times (\boldsymbol{Z})^2}{(n)^3}$$

$$F_c = m \times \frac{\omega \times \boldsymbol{C} \times (\alpha)^2 \times (\boldsymbol{Z})^2}{(n)^3}$$

$$C = \frac{n \times v}{\alpha \times Z}$$

$$F_c = m \times \frac{\omega \times v \times \alpha \times \boldsymbol{Z}}{(n)^2}$$

$$\boldsymbol{p} = \boldsymbol{m} \times \boldsymbol{v}$$

$$F_c = \boldsymbol{p} \times \frac{\omega \times \alpha \times \boldsymbol{Z}}{(n)^2}$$

$$F_c = m \times \frac{\omega \times \boldsymbol{C} \times (\alpha)^2 \times (\boldsymbol{Z})^2}{(n)^3}$$

$$\boldsymbol{p} = \boldsymbol{m} \times \boldsymbol{C}$$

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$$F_c = \boldsymbol{p} \times \frac{\omega \times (\alpha)^2 \times (\boldsymbol{Z})^2}{(n)^3}$$

F_c is the Centripetal force

$$F_c = m \times a$$

$$a_c = \frac{k \times (\boldsymbol{C})^2 \times (\alpha)^2 \times (\boldsymbol{Z})^2}{(n)^3}$$

$$F_c = m \times \frac{k \times (\boldsymbol{C})^2 \times (\alpha)^2 \times (\boldsymbol{Z})^2}{(n)^3}$$

$$C = \frac{n \times v}{\alpha \times Z}$$

$$F_c = m \times \frac{k \times (v)^2}{n}$$

$$\boldsymbol{p} = \boldsymbol{m} \times \boldsymbol{v}$$

$$F_c = \boldsymbol{p} \times \frac{k \times v}{n}$$

$$v = \frac{\alpha \times C \times Z}{n}$$

$$F_c = \boldsymbol{p} \times \frac{k \times \alpha \times C \times Z}{(n)^2}$$

$$\boldsymbol{C} = \frac{\boldsymbol{\omega}}{\boldsymbol{k}}$$

$$F_c = \boldsymbol{p} \times \frac{\omega \times \alpha \times Z}{(n)^2}$$

F_c is the Centripetal force

$$F_c = \boldsymbol{p} \times \frac{k \times v}{n}$$

$$r = \frac{n}{k}$$

$$F_c = \boldsymbol{p} \times \frac{v}{r}$$

F_c is the Centripetal force

$$F_c = m \times \frac{k \times (\boldsymbol{C})^2 \times (\alpha)^2 \times (\boldsymbol{Z})^2}{(n)^3}$$

$$\boldsymbol{p} = \boldsymbol{m} \times \boldsymbol{C}$$

$$F_c = \boldsymbol{p} \times \frac{k \times \boldsymbol{C} \times (\alpha)^2 \times (\boldsymbol{Z})^2}{(n)^3}$$

$$\boldsymbol{C} = \frac{\boldsymbol{\omega}}{\boldsymbol{k}}$$

$$F_c = \boldsymbol{p} \times \frac{\omega \times (\alpha)^2 \times (\boldsymbol{Z})^2}{(n)^3}$$

F_c is the Centripetal force

$$F_c = m \times \frac{k \times (\boldsymbol{C})^2 \times (\alpha)^2 \times (\boldsymbol{Z})^2}{(n)^3}$$

$$\boldsymbol{E} = \boldsymbol{m} \times \boldsymbol{C}^2$$

$$F_c = \boldsymbol{E} \times \frac{k \times (\alpha)^2 \times (\boldsymbol{Z})^2}{(n)^3}$$

This is derivation number 42

$$a_c = \frac{G \times m \times \alpha \times Z}{R \times (r_n)^2}$$

$$a_c = \frac{k \times (\boldsymbol{C})^2 \times (\alpha)^2 \times (\boldsymbol{Z})^2}{(n)^3}$$

$$\boldsymbol{C} = \frac{\boldsymbol{\omega}}{\boldsymbol{k}}$$

$$a_c = \frac{\omega \times \boldsymbol{C} \times (\alpha)^2 \times (\boldsymbol{Z})^2}{(n)^3}$$

$$\frac{\omega \times \boldsymbol{C} \times (\alpha)^2 \times (\boldsymbol{Z})^2}{(n)^3} = \frac{G \times m \times \alpha \times Z}{R \times (r_n)^2}$$

$$C = \frac{n \times v}{\alpha \times Z}$$

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$$\frac{\omega \times v}{(n)^{2}} = \frac{G \times m}{R \times (r_n)^2} \quad \frac{v}{v}$$

$$\boldsymbol{R} = \frac{(m_e)^2}{(m_p)^2}$$

$$\boldsymbol{L} = \boldsymbol{m} \times \boldsymbol{v} \times \boldsymbol{r_n}$$

$$\frac{\omega \times (L)^2}{(n)^{2}} = G \times m \times v \times (m_p)^2$$

$$(m_p)^2 = \frac{\hbar \times C}{G}$$

$$\boldsymbol{p} = \boldsymbol{m} \times \boldsymbol{v}$$

$$\frac{\omega \times (L)^2}{(n)^{2}} = \hbar \times C \times \boldsymbol{p}$$

$$\boldsymbol{E} = \boldsymbol{p} \times \boldsymbol{C}$$

$$\frac{\omega \times (L)^2}{(n)^{2}} = \hbar \times \boldsymbol{E}$$

$$\boldsymbol{L} = \boldsymbol{n} \times \hbar$$

$$\frac{\omega \times L}{n} = \boldsymbol{E}$$

$$\boldsymbol{E} = \frac{\omega \times L}{n}$$

$$\boldsymbol{L} = \boldsymbol{n} \times \hbar$$

$$\boldsymbol{E} = \omega \times \hbar$$

$$\omega = 2\pi \times \boldsymbol{v}$$

$$\hbar = \frac{h_p}{2\pi}$$

$$E_n = h_{(p)} \times v$$

E_n is the photon energy is in joules

$$a_c = \frac{G \times m \times \alpha \times Z}{R \times (r_n)^2}$$

$$a_c = \frac{k \times (\boldsymbol{C})^2 \times (\alpha)^2 \times (\boldsymbol{Z})^2}{(n)^{3}}$$

$$\boldsymbol{C} = \frac{\boldsymbol{\omega}}{\boldsymbol{k}}$$

$$a_c = \frac{\omega \times \boldsymbol{C} \times (\alpha)^2 \times (\boldsymbol{Z})^2}{(n)^{3}}$$

$$\frac{\omega \times \boldsymbol{C} \times (\alpha)^2 \times (\boldsymbol{Z})^2}{(n)^{3}} = \frac{G \times m \times \alpha \times Z}{R \times (r_n)^2}$$

$$\boldsymbol{R} = \frac{(m_e)^2}{(m_p)^2}$$

$$\frac{\omega \times \boldsymbol{C} \times (\alpha)^2 \times (\boldsymbol{Z})^2}{(n)^{3}} = \frac{G \times (m_p)^2 \times \alpha \times Z}{m_e \times (r_n)^2}$$

$$(m_p)^2 = \frac{\hbar \times C}{G}$$

$$\frac{\omega \times \boldsymbol{C} \times (\alpha)^2 \times (\boldsymbol{Z})^2}{(n)^{3}} = \frac{\hbar \times C \times \alpha \times Z}{m_e \times (r_n)^2}$$

$$\frac{\omega \times \alpha \times Z}{(n)^{3}} = \frac{\hbar}{m_e \times (r_n)^2}$$

$$\boldsymbol{L} = \boldsymbol{n} \times \hbar$$

$$\frac{\omega \times \alpha \times Z}{(n)^{2}} = \frac{L}{m_e \times (r_n)^2}$$

$$\boldsymbol{L} = \boldsymbol{m} \times \boldsymbol{v} \times \boldsymbol{r_n}$$

$$\frac{\omega \times \alpha \times Z}{(n)^{2}} = \frac{v}{r_n}$$

$$C = \frac{n \times v}{\alpha \times Z}$$

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$$\frac{\omega}{n} = \frac{C}{r_n}$$

$$\omega = \boldsymbol{k} \times C$$

This is derivation number 43

$$F_g = m \times a_g$$

$$a_g = \frac{(\omega)^2 \times r_n \times \alpha \times R \times \boldsymbol{Z}}{(n)^4}$$

$$F_g = m \times \frac{(\omega)^2 \times r_n \times \alpha \times R \times \boldsymbol{Z}}{(n)^4}$$

$$F_g = m \times a_g$$

$$a_g = \frac{k \times (\boldsymbol{C})^2 \times \alpha \times R \times \boldsymbol{Z}}{(n)^3}$$

$$\boldsymbol{C} = \frac{\boldsymbol{\omega}}{\boldsymbol{k}}$$

$$a_g = \frac{\omega \times \boldsymbol{C} \times \alpha \times R \times \boldsymbol{Z}}{(n)^3}$$

$$F_g = m \times \frac{\omega \times \boldsymbol{C} \times \alpha \times R \times \boldsymbol{Z}}{(n)^3}$$

$$C = \frac{n \times v}{\alpha \times Z}$$

$$F_g = m \times \frac{\omega \times v \times R}{(n)^2}$$

$$\boldsymbol{p} = \boldsymbol{m} \times \boldsymbol{v}$$

$$F_g = \boldsymbol{p} \times \frac{\omega \times R}{(n)^2}$$

$$F_g = m \times \frac{\omega \times \boldsymbol{C} \times \alpha \times R \times \boldsymbol{Z}}{(n)^3}$$

$$\boldsymbol{p} = \boldsymbol{m} \times \boldsymbol{C}$$

$$F_g = \boldsymbol{p} \times \frac{\omega \times \alpha \times R \times \boldsymbol{Z}}{(n)^3}$$

F_g is the Gravitational force

$$F_g = m \times a_g$$

$$a_g = \frac{k \times (\boldsymbol{C})^2 \times \alpha \times R \times \boldsymbol{Z}}{(n)^3}$$

$$F_g = m \times \frac{k \times (\boldsymbol{C})^2 \times \alpha \times R \times \boldsymbol{Z}}{(n)^3}$$

$$C = \frac{n \times v}{\alpha \times Z}$$

$$F_g = m \times \frac{k \times (v)^2 \times R}{n \times \alpha \times \boldsymbol{Z}}$$

$$\boldsymbol{p} = \boldsymbol{m} \times \boldsymbol{v}$$

$$F_g = \boldsymbol{p} \times \frac{k \times v \times R}{n \times \alpha \times \boldsymbol{Z}}$$

$$v = \frac{\alpha \times C \times Z}{n}$$

$$F_g = \boldsymbol{p} \times \frac{k \times C \times R}{(n)^2}$$

$$\boldsymbol{C} = \frac{\boldsymbol{\omega}}{\boldsymbol{k}}$$

$$F_g = \boldsymbol{p} \times \frac{\omega \times R}{(n)^2}$$

F_g is the Gravitational force

$$F_g = \boldsymbol{p} \times \frac{k \times v \times R}{n \times \alpha \times \boldsymbol{Z}}$$

$$r = \frac{n}{k}$$

$$F_g = \boldsymbol{p} \times \frac{v \times R}{r \times \alpha \times \boldsymbol{Z}}$$

F_g is the Gravitational force

$$F_g = m \times \frac{k \times (\boldsymbol{C})^2 \times \alpha \times R \times \boldsymbol{Z}}{(n)^3}$$

$\boldsymbol{p} = \boldsymbol{m} \times \boldsymbol{C}$

$$F_g = \boldsymbol{p} \times \frac{k \times \boldsymbol{C} \times \alpha \times R \times \boldsymbol{Z}}{(n)^3}$$

$\boldsymbol{C} = \frac{\boldsymbol{\omega}}{\boldsymbol{k}}$

$$F_g = \boldsymbol{p} \times \frac{\omega \times \alpha \times R \times \boldsymbol{Z}}{(n)^3}$$

F_g is the Gravitational force

$$F_g = m \times \frac{k \times (\boldsymbol{C})^2 \times \alpha \times R \times \boldsymbol{Z}}{(n)^3}$$

$\boldsymbol{E} = \boldsymbol{m} \times \boldsymbol{C}^2$

$$F_g = \boldsymbol{E} \times \frac{k \times \alpha \times R \times \boldsymbol{Z}}{(n)^3}$$

This is derivation number 44

$$F_c = F_g$$

$$m \times \frac{v^2}{r} = M \times \frac{G \times m}{(r_n)^2}$$

$$v^2 = \frac{G \times m}{r_n}$$

v is the Orbital velocity

$$F_c = F_g$$

$$m \times \frac{v^2}{r} = \boldsymbol{p} \times \frac{\omega \times R}{(n)^2}$$

$\boldsymbol{p} = \boldsymbol{m} \times \boldsymbol{v}$

$$m \times \frac{v^2}{r} = \boldsymbol{m} \times \boldsymbol{v} \times \frac{\omega \times R}{(n)^2}$$

$\boldsymbol{L} = \boldsymbol{m} \times \boldsymbol{v} \times \boldsymbol{r_n} = \boldsymbol{n} \times \hbar$

$\boldsymbol{p} = \boldsymbol{m} \times \boldsymbol{v}$

$$\boldsymbol{p} \times v = n \times \hbar \times \frac{\omega \times R}{(n)^2}$$

$\boldsymbol{p} = \hbar \times \boldsymbol{k}$

$$v = \frac{\omega \times (m_e)^2}{n \times \boldsymbol{k} \times (m_p)^2}$$

$(m_p)^2 = \frac{\hbar \times C}{G}$

$$v = \frac{G \times \omega \times (m_e)^2}{n \times \boldsymbol{k} \times \hbar \times C}$$

$$v = \frac{G \times (m_e)^2}{n \times \hbar}$$

$\boldsymbol{L} = \boldsymbol{m} \times \boldsymbol{v} \times \boldsymbol{r_n} = \boldsymbol{n} \times \hbar$

$$v = \frac{G \times (m_e)^2}{\boldsymbol{L}}$$

$$v = \frac{G \times m_e}{\boldsymbol{v} \times \boldsymbol{r_n}}$$

$$v^2 = \frac{G \times m_e}{\boldsymbol{r_n}}$$

v is the Orbital velocity

This is derivation number 45

$$F_c = \boldsymbol{p} \times \frac{\omega \times \alpha \times \boldsymbol{Z}}{(n)^2}$$

$\boldsymbol{p} = \boldsymbol{m} \times \boldsymbol{v} = \hbar \times \boldsymbol{k}$

$$F_c = \hbar \times \boldsymbol{k} \times \frac{\omega \times \alpha \times \boldsymbol{Z}}{(n)^2} \quad \frac{\boldsymbol{k}}{\boldsymbol{k}}$$

$$F_c = \hbar \times \boldsymbol{k}^2 \times \frac{\omega \times \alpha \times \boldsymbol{Z}}{\boldsymbol{k} \times (n)^2}$$

$$\boldsymbol{C} = \frac{\boldsymbol{\omega}}{\boldsymbol{k}}$$
$$\boldsymbol{v_p} = \frac{\boldsymbol{\omega}}{\boldsymbol{k}}$$

$$F_c = \hbar \times \boldsymbol{k}^2 \times \frac{\boldsymbol{C} \times \alpha \times \boldsymbol{Z}}{(n)^2}$$
$$F_c = \hbar \times \boldsymbol{k}^2 \times \frac{v_p \times \alpha \times \boldsymbol{Z}}{(n)^2}$$
$$F_c = \hbar \times \boldsymbol{k}^2 \times \frac{\boldsymbol{v_g} \times \alpha \times \boldsymbol{Z}}{(n)^2}$$

This is derivation number 46

$$F_g = \boldsymbol{p} \times \frac{\omega \times R}{(n)^2}$$

$$\boldsymbol{p} = \boldsymbol{m} \times \boldsymbol{v} = \hbar \times \boldsymbol{k}$$

$$F_g = \hbar \times \boldsymbol{k} \times \frac{\omega \times R}{(n)^2} \quad \frac{\boldsymbol{k}}{\boldsymbol{k}}$$
$$F_g = \hbar \times \boldsymbol{k}^2 \times \frac{\omega \times R}{\boldsymbol{k} \times (n)^2}$$

$$\boldsymbol{C} = \frac{\boldsymbol{\omega}}{\boldsymbol{k}}$$
$$\boldsymbol{v_p} = \frac{\boldsymbol{\omega}}{\boldsymbol{k}}$$

$$F_g = \hbar \times \boldsymbol{k}^2 \times \frac{\boldsymbol{C} \times R}{(n)^2}$$
$$F_g = \hbar \times \boldsymbol{k}^2 \times \frac{v_p \times R}{(n)^2}$$
$$F_g = \hbar \times \boldsymbol{k}^2 \times \frac{\boldsymbol{v_g} \times R}{(n)^2}$$

This is derivation number 47

$$a_c = \frac{(\omega)^2 \times r_n \times (\alpha)^2 \times (\boldsymbol{Z})^2}{(n)^4}$$

$$a_c = \frac{v^2}{r}$$

$$\frac{v^2}{r} = \frac{(\omega)^2 \times r_n \times (\alpha)^2 \times (\boldsymbol{Z})^2}{(n)^4}$$

$$a = (\omega)^2 \times r_n = n \times k \times (\boldsymbol{C})^2$$

$$\frac{v^2}{r} = \frac{a \times (\alpha)^2 \times (\boldsymbol{Z})^2}{(n)^4}$$
$$a_\alpha = \frac{v^2 \times (n)^4}{(\alpha)^2 \times r \times (\boldsymbol{Z})^2}$$

$$a_\alpha = (\omega)^2 \times r_n = n \times k \times (\boldsymbol{C})^2$$

a_α is the Angular acceleration

This is derivation number 48

$$a_g = \frac{(\omega)^2 \times r_n \times \alpha \times R \times \boldsymbol{Z}}{(n)^4}$$

$$a_g = \frac{G \times m}{(r_n)^2}$$

$$\frac{G \times m}{(r_n)^2} = \frac{(\omega)^2 \times r_n \times \alpha \times R \times \boldsymbol{Z}}{(n)^4}$$

$$a = (\omega)^2 \times r_n = n \times k \times (\boldsymbol{C})^2$$

$$\frac{G \times m}{(r_n)^2} = \frac{a \times \alpha \times R \times \boldsymbol{Z}}{(n)^4}$$
$$a_\alpha = \frac{G \times m \times (n)^4}{(r_n)^2 \times \alpha \times R \times \boldsymbol{Z}}$$

$$a_\alpha = (\omega)^2 \times r_n = n \times k \times (\boldsymbol{C})^2$$

a_α is the Angular acceleration

This is derivation number 49

$$\mu_L = I \times A$$

$\mu_L (Electron\ magnetic\ moment)$
$I\ (Loop\ area)$
$A\ (Electric\ current)$

$$I = \frac{e}{T}$$

$$T = \frac{(2\pi)^2 \times r_n}{v}$$

$$I = \frac{e}{\frac{2\pi \times r_n}{v}} = \frac{e \times v}{2\pi \times r_n}$$

$$A = \pi \times (r_n)^2$$

$$\mu_L = \frac{e \times v}{2\pi \times r_n} \times \pi \times (r_n)^2$$

$$\mathbf{\mu_L = \frac{e \times v \times r_n}{2}}$$

$\boldsymbol{L = m_e \times v \times r_n = n \times \hbar}$

$\boldsymbol{v \times r_n = \frac{L}{m}}$

$$\boldsymbol{\mu_L = -\frac{e \times L}{2m_e}}$$

$\mu_L (Electron\ magnetic\ moment)$

This is derivation number 50

To explain the motion of an electron in the first level, we must consider that the orbital angular momentum is not equal to zero, so it must be considered to represent the principal quantum number, such as in this case.

$$L = \sqrt{l(l+1)} \times \hbar$$

$$L^2 = l(l+1) \times \hbar^2$$

$\boldsymbol{L}\ (The\ orbital\ angular\ momentum)$

$$\boldsymbol{L_D} = \sqrt{((n)^2 - \boldsymbol{n_D})} \times \hbar$$

$$\boldsymbol{L_D^2} = ((n)^2 - \boldsymbol{n_D}) \times \hbar^2$$

n is the principal quantum number

$\boldsymbol{L = m_e \times v \times r_n}$

It is similar to Niels Bohr's equation for particles, so the laws of particles and waves apply to it.

$$\boldsymbol{L_D^2} = ((n)^2 - \boldsymbol{n_D}) \times \hbar^2$$

$$\boldsymbol{L_D = m \times v \times r_n \times \sqrt{\left(\frac{l}{n}\right)}}$$

n is the principal quantum number

$$\boldsymbol{v} = \frac{x}{t}$$

$x = 2\pi \times r_n$
$t = T$

$$v = \frac{2\pi \times r_n}{T}$$

$\boldsymbol{\nu} = \frac{1}{T}$

$$\boldsymbol{C} = \frac{2\pi \times r_n \times \nu}{2}$$

$C = \frac{n \times v}{\alpha \times Z}$

$$\boldsymbol{v} = \frac{2\pi \times r_n \times \nu \times \alpha \times Z}{2 \times n} \quad \frac{v \times r_n}{v \times r_n}$$

$$\boldsymbol{\frac{v}{r} = \frac{2\pi \times \nu \times \alpha \times Z}{2 \times n}}$$

$$\boldsymbol{\frac{v}{r} = \frac{\omega \times \alpha \times Z}{2 \times n}}$$

$$\frac{v^2}{r} = \frac{2\pi \times r_n \times v \times \alpha \times Z \times v}{2 \times n \times r_n}$$

$$a_c = \frac{v^2}{r}$$

$$a_c = \frac{2\pi \times r_n \times v \times \alpha \times Z \times v}{2 \times n \times r_n}$$

$$\omega = 2\pi \times \boldsymbol{v}$$

$$\boldsymbol{a_c} = \frac{\boldsymbol{r_n} \times \boldsymbol{\omega} \times \boldsymbol{\alpha} \times \boldsymbol{Z} \times \boldsymbol{v}}{\boldsymbol{2} \times \boldsymbol{n} \times \boldsymbol{r_n}}$$

$$\boldsymbol{r} = \frac{\boldsymbol{n}}{\boldsymbol{k}}$$

$$\boldsymbol{a_c} = \frac{\boldsymbol{\omega} \times \boldsymbol{\alpha} \times \boldsymbol{Z} \times \boldsymbol{v}}{\boldsymbol{2} \times \boldsymbol{k} \times \boldsymbol{r_n}}$$

$$\frac{\boldsymbol{v}}{\boldsymbol{r}} = \frac{\boldsymbol{\omega} \times \boldsymbol{\alpha} \times \boldsymbol{Z}}{\boldsymbol{2} \times \boldsymbol{n}}$$

$$\boldsymbol{a_c} = \frac{(\boldsymbol{\omega} \times \boldsymbol{\alpha} \times \boldsymbol{Z})^2}{\boldsymbol{4} \times \boldsymbol{n} \times \boldsymbol{k}}$$

This is derivation number 51

$$F_\alpha = m \times a_\alpha$$

$$a_\alpha = \frac{v^2 \times (n)^4}{(\alpha)^2 \times r \times (\boldsymbol{Z})^2}$$

$$F_\alpha = m \times \frac{v^2 \times (n)^4}{(\alpha)^2 \times r \times (\boldsymbol{Z})^2}$$

$$\boldsymbol{p} = \boldsymbol{m} \times \boldsymbol{v}$$

$$F_\alpha = \boldsymbol{p} \times \frac{v \times (n)^4}{(\alpha)^2 \times r \times (\boldsymbol{Z})^2}$$

$$v = \frac{\alpha \times C \times Z}{n}$$

$$F_\alpha = \boldsymbol{p} \times \frac{C \times (n)^3}{\alpha \times r \times \boldsymbol{Z}}$$

$$F_\alpha = \boldsymbol{p} \times \frac{v_p \times (n)^3}{\alpha \times r \times \boldsymbol{Z}}$$

$$F_\alpha = \boldsymbol{p} \times \frac{\boldsymbol{v_g} \times (n)^3}{\alpha \times r \times \boldsymbol{Z}}$$

$$\boldsymbol{C} = \frac{\boldsymbol{\omega}}{\boldsymbol{k}}$$

$$F_\alpha = \boldsymbol{p} \times \frac{\boldsymbol{\omega} \times (n)^3}{\alpha \times r \times \boldsymbol{k} \times \boldsymbol{Z}}$$

F_α is the Gravitational angular

$$F_\alpha = \boldsymbol{p} \times \frac{\boldsymbol{\omega} \times (n)^3}{\alpha \times r \times \boldsymbol{k} \times \boldsymbol{Z}}$$

$$r = \frac{n}{k}$$

$$F_\alpha = \boldsymbol{p} \times \frac{\boldsymbol{\omega} \times (n)^2}{\alpha \times \boldsymbol{Z}} \quad \frac{\boldsymbol{k}}{\boldsymbol{k}}$$

$$\boldsymbol{p} = \boldsymbol{m} \times \boldsymbol{v} = \hbar \times \boldsymbol{k}$$

$$\boldsymbol{C} = \frac{\boldsymbol{\omega}}{\boldsymbol{k}}$$

$$\boldsymbol{F_\alpha} = \hbar \times \boldsymbol{k}^2 \times \frac{\boldsymbol{C} \times (\boldsymbol{n})^2}{\boldsymbol{\alpha} \times \boldsymbol{Z}}$$

$$\boldsymbol{F_\alpha} = \hbar \times \boldsymbol{k}^2 \times \frac{\boldsymbol{v_p} \times (\boldsymbol{n})^2}{\boldsymbol{\alpha} \times \boldsymbol{Z}}$$

$$\boldsymbol{F_\alpha} = \hbar \times \boldsymbol{k}^2 \times \frac{\boldsymbol{v_g} \times (\boldsymbol{n})^2}{\boldsymbol{\alpha} \times \boldsymbol{Z}}$$

F_α is the Gravitational angular

$$F_\alpha = m \times \frac{v^2 \times (n)^4}{(\alpha)^2 \times r \times (\boldsymbol{Z})^2}$$

$$v = \frac{\alpha \times C \times Z}{n}$$

$$F_{\alpha} = m \times \frac{C^2 \times (n)^2}{r}$$

$\boldsymbol{p = m \times C}$

$$F_{\alpha} = \boldsymbol{p} \times \frac{C \times (n)^2}{r}$$

$\boldsymbol{C = \frac{\omega}{k}}$

$$F_{\alpha} = \boldsymbol{p} \times \frac{\boldsymbol{\omega} \times (n)^2}{r \times \boldsymbol{k}}$$

$r = \frac{n}{k}$

$$F_{\alpha} = \boldsymbol{p} \times \boldsymbol{\omega} \times n$$

$$\boldsymbol{p = m \times C}$$

F_{α} is the Gravitational angular

$$F_{\alpha} = m \times \frac{v^2 \times (n)^4}{(\alpha)^2 \times r \times (\boldsymbol{Z})^2}$$

$v = \frac{\alpha \times C \times Z}{n}$

$$F_{\alpha} = m \times \frac{C^2 \times (n)^2}{r}$$

$\boldsymbol{E = m \times C^2}$

$$F_{\alpha} = \boldsymbol{E} \times \frac{(n)^2}{r}$$

$r = \frac{n}{k}$

$$F_{\alpha} = \boldsymbol{E} \times n \times k$$

This is derivation number 52

$$\boldsymbol{L_l}^2 = \boldsymbol{L_l}^2$$

$$\boldsymbol{L_l}\ (\boldsymbol{The\ orbital\ angular\ momentum})$$

$$\boldsymbol{l(l+1)} \times \hbar^2 = ((\boldsymbol{n})^2 - \boldsymbol{n}) \times \hbar^2$$

$$\boldsymbol{l(l+1)} = ((\boldsymbol{n})^2 - \boldsymbol{n})$$

$$((\boldsymbol{l})^2 + \boldsymbol{l}) = ((\boldsymbol{n})^2 - \boldsymbol{n})$$

$$(\boldsymbol{n})^2 - ((\boldsymbol{l})^2 + \boldsymbol{l}) = (\boldsymbol{n})$$

$$(\boldsymbol{n_D}) = (\boldsymbol{n})^2 - ((\boldsymbol{l})^2 + \boldsymbol{l})$$

$$(\boldsymbol{n_D}) = \frac{(\boldsymbol{n})^2 - ((\boldsymbol{l})^2 + \boldsymbol{l})}{\left(\frac{(\boldsymbol{n}) - \boldsymbol{l}}{(\boldsymbol{n}) - \boldsymbol{l}}\right)}$$

This is derivation number 53

$$\boldsymbol{L_a} = \boldsymbol{m} \times \boldsymbol{v} \times \boldsymbol{r_n} = \boldsymbol{n} \times \hbar$$

$(\boldsymbol{n_D}) = \frac{(n)^2 - ((l)^2 + l)}{\left(\frac{(n) - l}{(n) - l}\right)}$

$$\boldsymbol{L_D} = \frac{(\boldsymbol{n})^2 - ((\boldsymbol{l})^2 + \boldsymbol{l})}{\left(\frac{(\boldsymbol{n}) - \boldsymbol{l}}{(\boldsymbol{n}) - \boldsymbol{l}}\right)} \hbar \times \sqrt{\frac{(\boldsymbol{l}^2 + \boldsymbol{l})}{(\boldsymbol{n})^2}}$$

$\boldsymbol{L_D}$ is the $\boldsymbol{David's\ orbital\ angular\ momentum}$

$\boldsymbol{L_a}$ is the angular momentum

This is derivation number 54

$$\boldsymbol{L_l} = \sqrt{\boldsymbol{l(l+1)}} \times \hbar$$

$$\boldsymbol{L_l}^2 = \boldsymbol{l(l+1)} \times \hbar^2$$

$$\boldsymbol{L_l}^2 = (\boldsymbol{l}^2 + \boldsymbol{l}) \times \hbar^2$$

$\boldsymbol{l = n - 1}$

$$\boldsymbol{L_l}^2 = ((\boldsymbol{n-1})^2 + (\boldsymbol{n-1})) \times \hbar^2$$

$$\boldsymbol{L_D^2} = ((\boldsymbol{n})^2 - \boldsymbol{n_D}) \times \hbar^2$$

$\boldsymbol{L_l}$ is the $\boldsymbol{orbital\ angular\ momentum}$

This is derivation number 55

$$L_t^2 = L_D^2 = L_l^2$$

L_t is the total momentum

L_a is the angular momentum

L_l is the ***orbital angular momentum***

L_D is the ***David's orbital angular momentum***

$L_a = m \times v \times r_n = n \times \hbar$

$$L_D = \frac{(n)^2 - ((l)^2 + l)}{\left(\frac{(n) - l}{(n) - l}\right)} \times \hbar \times \sqrt{\frac{(l^2 + l)}{(n)^2 \times \left(\frac{(n) - l}{(n) - l}\right)}}$$

$L_l = \sqrt{l(l+1)} \times \hbar = \sqrt{((n)^2 - n_D)} \times \hbar$

$$L_t^2 = \left(n\hbar \times \sqrt{\frac{(l^2 + l)}{(n)^2 \times \left(\frac{(n) - l}{(n) - l}\right)}}\right)^2 = \left(\sqrt{((n)^2 - n_D)} \times \hbar\right)^2$$

$$L_t^2 = \left(\frac{(n)^2 - ((l)^2 + l)}{\left(\frac{(n) - l}{(n) - l}\right)} \times \hbar \times \sqrt{\frac{(l^2 + l)}{(n)^2 \times \left(\frac{(n) - l}{(n) - l}\right)}}\right)^2 = ((n)^2 - n_D) \times \hbar^2$$

$$L_t^2 = \left(\frac{(n)^2 - ((l)^2 + l)}{\left(\frac{(n) - l}{(n) - l}\right)} \times \sqrt{\frac{(l^2 + l)}{(n)^2 \times \left(\frac{(n) - l}{(n) - l}\right)}}\right)^2 \times \hbar^2 = ((n)^2 - n_D) \times \hbar^2$$

$$L_t = \sqrt{\left(\frac{(n)^2 - ((l)^2 + l)}{\left(\frac{(n) - l}{(n) - l}\right)} \times \sqrt{\frac{(l^2 + l)}{(n)^2 \times \left(\frac{(n) - l}{(n) - l}\right)}}\right)^2} \times \hbar + \sqrt{((n)^2 - n_D)} \times \hbar$$

$$L_t = \sqrt{\left(\frac{(n)^2 - ((l)^2 + l)}{\left(\frac{(n) - l}{(n) - l}\right)} \times \sqrt{\frac{(l^2 + l)}{(n)^2 \times \left(\frac{(n) - l}{(n) - l}\right)}}\right)^2} \times \hbar$$

$$L_t = \sqrt{((n)^2 - n_D)} \times \hbar$$

L_t is the total momentum

L_a is the angular momentum

L_l is the ***orbital angular momentum***

This is derivation number 56

$$L_l = \sqrt{l(l+1)} \times \hbar$$
$$L_l{}^2 = l(l+1) \times \hbar^2$$
$$L_l{}^2 = (l^2 + l) \times \hbar^2$$

$l = n - 1$

$$L_l{}^2 = ((n-1)^2 + (n-1)) \times \hbar^2$$
$$L_D^2 = ((n)^2 - n_D) \times \hbar^2$$

This is derivation number 57

$$L_l^2 = L_a^2$$

$L_a^2 = L_a \times L_a$

$L_a = n \times \hbar$

$$L_l^2 = n\hbar \times L_a$$

$n = (n - 1)$

$$L_l^2 = (n \times \hbar - \hbar) \times L_a$$

$L_a = n \times \hbar$

$$L_l^2 = (\boldsymbol{n} \times \hbar - \hbar) \times (\boldsymbol{n} \times \hbar)$$

$$L_l^2 = ((\boldsymbol{n})^2 \times \hbar^2 - \boldsymbol{n} \times \hbar^2)$$

$$L_D^2 = ((\boldsymbol{n})^2 - \boldsymbol{n}_D) \times \hbar^2$$

This is derivation number 58

$$L_l = \sqrt{l(l+1)} \times \hbar$$

$$L_l^{\,2} = l(l+1) \times \hbar^2$$

$$L_l^{\,2} = (l^2 + l) \times \hbar^2 \quad \frac{(\boldsymbol{n})^2}{(\boldsymbol{n})^2}$$

$$L_l^{\,2} = \frac{(\boldsymbol{n})^2 (l^2 + l) \times \hbar^2}{(\boldsymbol{n})^2}$$

$$L_l = \sqrt{\frac{(\boldsymbol{n})^2 (l^2 + l) \times \hbar^2}{(\boldsymbol{n})^2}} \times \hbar$$

$$L_l = \boldsymbol{n} \times \sqrt{\frac{(l^2 + l)}{(\boldsymbol{n})^2}} \times \hbar$$

$$L_D = \boldsymbol{n}\hbar \times \sqrt{\frac{(l^2 + l)}{(\boldsymbol{n})^2}}$$

$$L_D = \boldsymbol{n}\hbar \times \sqrt{\frac{(l^2 + l)}{(\boldsymbol{n})^2 \times \left(\frac{(\boldsymbol{n}) - l}{(\boldsymbol{n}) - l}\right)}}$$

$$L_D = \boldsymbol{n}\hbar \times \sqrt{\left(\frac{((l)^2 + l)}{(\boldsymbol{n})^2 \times \left(\frac{(\boldsymbol{n}) - l}{(\boldsymbol{n}) - l}\right)}\right)}$$

l is the ***orbital quantum number***

L_D is the ***David's orbital angular momentum***

This is derivation number 59

$$\langle r \rangle_{n,l} = \frac{a_0}{2} \,|\, 3n^2 - l(l+1) \,|$$

$$\langle r \rangle_{n,l} = \frac{a_0}{2} \,|\, 3n^2 - (l^2 + l) \,| \quad \frac{\hbar^2}{\hbar^2}$$

$$L_D^2 = ((\boldsymbol{n})^2 - \boldsymbol{n}_D) \times \hbar^2$$

$$\langle r \rangle_{n,l} = \frac{a_0}{2} \,|\, 3n^2 - ((\boldsymbol{n})^2 - \boldsymbol{n}_D) \,| \quad \frac{\hbar^2}{\hbar^2}$$

$$\frac{\langle r \rangle_{n,l}}{\hbar^2} = \frac{a_0}{2} \,|\, 3n^2\hbar^2 - L_D^2 \,|$$

$$\frac{\langle r \rangle_{n,l}}{\hbar^2} = \frac{a_0}{2} \,|\, 3n^2\hbar^2 - \left(\boldsymbol{n}\hbar \times \sqrt{\frac{(l^2 + l)}{(\boldsymbol{n})^2 \times \left(\frac{(\boldsymbol{n}) - l}{(\boldsymbol{n}) - l}\right)}}\right)^2 \,|$$

$$\frac{\langle r \rangle_{n,l}}{\hbar^2} = \frac{a_0 \times n^2\hbar^2}{2} \,|\, 3 - \left(\sqrt{\frac{(l^2 + l)}{(\boldsymbol{n})^2 \times \left(\frac{(\boldsymbol{n}) - l}{(\boldsymbol{n}) - l}\right)}}\right)^2 \,|$$

$$\langle r \rangle_{n,l} = \frac{a_0 \times n^2}{2} \,|\, 3 - \left(\sqrt{\frac{(l^2 + l)}{(\boldsymbol{n})^2 \times \left(\frac{(\boldsymbol{n}) - l}{(\boldsymbol{n}) - l}\right)}}\right)^2 \,|$$

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$$\langle r \rangle_{n,l} = a_0 \times n^2 \mid \frac{3}{2} - \frac{\left(\sqrt{\frac{(l^2 + l)}{(n)^2 \times \left(\frac{(n) - l}{(n) - l}\right)}}\right)^2}{2} \mid$$

$$\langle r \rangle_{n,l} = a_0 \times n^2 \mid \frac{3}{2} - \frac{\frac{(l^2 + l)}{(n)^2 \times \left(\frac{(n) - l}{(n) - l}\right)}}{2} \mid$$

$$\langle r \rangle_{n,l} = a_0 \times n^2 \mid \frac{3}{2} - \frac{(l^2 + l)}{2(n)^2 \times \left(\frac{(n) - l}{(n) - l}\right)} \mid$$

$$D_r = \frac{3}{2} - \frac{(l^2 + l)}{2(n)^2 \times \left(\frac{(n) - l}{(n) - l}\right)}$$

D_r is the $David's\ constant\ adjusted\ for\ radius$

$$\langle r \rangle_{n,l} = a_0 \times n^2 \mid D_r \mid$$

This is derivation number 60

$$F_c = m \times \frac{v^2}{r} \quad \frac{m}{m}$$

$$F_c = m^2 \times \frac{v^2}{r \times m}$$

$$p = m \times v$$

$$F_c = \frac{p^2}{r \times m}$$

$$p = \hbar \times k$$

$$F_c = \frac{(\hbar \times k)^2}{r \times m}$$

$$k = \frac{2\pi}{\lambda}$$

$$F_c = \frac{(\hbar \times 2\pi)^2}{r \times m \times \lambda^2}$$

$$C = \lambda \times \nu$$

$$F_c = \frac{(\hbar \times 2\pi \times \nu)^2}{r \times m \times C^2}$$

$$C = \frac{n \times v}{\alpha \times Z}$$

$$F_c = \frac{(\hbar \times 2\pi \times \nu \times \alpha \times Z)^2}{r \times m \times (n \times v)^2}$$

$$L_a = m \times v \times r_n$$

$$F_c = \frac{(\hbar \times 2\pi \times \nu \times \alpha \times Z)^2}{L_a \times v \times (n)^2}$$

$$v = 2\pi \times r \times \nu$$

$$F_c = \frac{(\hbar \times 2\pi \times \nu \times \alpha \times Z)^2}{L_a \times 2\pi \times r \times \nu \times (n)^2}$$

$$F_c = \frac{(\hbar \times \alpha \times Z)^2}{L_a \times r \times (n)^2}$$

$$r = \frac{n}{k}$$

$$F_c = \frac{(\hbar \times \alpha \times Z)^2 \times k}{L_a \times (n)^3}$$

$$L_a = n \times \hbar$$

$$F_c = \frac{(\alpha \times Z)^2 \times \hbar \times k}{(n)^4}$$

$$F_c = \frac{(\alpha \times Z)^2 \times p}{(n)^4}$$

This is derivation number 61

$$2kE = m_e \times (v)^2 \quad \frac{m}{m}$$

$$2kE = m^2 \times \frac{v^2}{m}$$

$$p = m \times v$$

$$2kE = \frac{p^2}{m}$$

$$p = \hbar \times k$$

$$2kE = \frac{(\hbar \times k)^2}{m}$$

$$k = \frac{2\pi}{\lambda}$$

$$2kE = \frac{(\hbar \times 2\pi)^2}{m \times \lambda^2}$$

$$C = \lambda \times v$$

$$2kE = \frac{(\hbar \times 2\pi \times v)^2}{m \times C^2}$$

$$C = \frac{n \times v}{\alpha \times Z}$$

$$2kE = \frac{(\hbar \times 2\pi \times v \times \alpha \times Z)^2}{m \times (n \times v)^2} \quad \frac{r}{r}$$

$$L_a = m \times v \times r_n$$

$$2kE = \frac{(\hbar \times 2\pi \times v \times \alpha \times Z)^2 \times r}{L_a \times (n)^2 \times v}$$

$$n \times \lambda = 2\pi \times r_n$$

$$2kE = \frac{(\hbar \times v \times \alpha \times Z)^2 \times 2\pi \times \lambda}{L_a \times n \times v}$$

$$C = \lambda \times v$$

$$2kE = \frac{(\hbar \times \alpha \times Z)^2 \times 2\pi \times v \times C}{L_a \times n \times v}$$

$$v = \frac{\alpha \times C \times Z}{n}$$

$$2kE = \frac{(\hbar)^2 \times 2\pi \times v \times \alpha \times (Z)^2}{L_a \times n}$$

$$L_a = n \times \hbar$$

$$2kE = \frac{\hbar \times 2\pi \times v \times \alpha \times (Z)^2}{(n)^2}$$

$$\hbar = \frac{h_p}{2\pi}$$

$$2kE = \frac{h_p \times v \times \alpha \times (Z)^2}{(n)^2}$$

This is derivation number 62

$$2kE = m_e \times (v)^2 \quad \frac{m}{m}$$

$$2kE = m^2 \times \frac{v^2}{m}$$

$$p = m \times v$$

$$2kE = \frac{p^2}{m}$$

$$p = \hbar \times k$$

$$2kE = \frac{(\hbar \times k)^2}{m}$$

$$k = \frac{2\pi}{\lambda}$$

$$2kE = \frac{(\hbar \times 2\pi)^2}{m \times \lambda^2} \quad \frac{(n)^2}{(n)^2}$$

$$n \times \lambda = 2\pi \times r_n$$

$$2kE = \frac{(\hbar \times 2\pi \times n)^2}{m \times (2\pi \times r_n)^2}$$

$$2kE = \frac{(\hbar \times n)^2}{m \times (r_n)^2}$$

This is derivation number 63

$$2kE = \frac{k_c(e)^2}{r_n}$$

k_c *is the Coulomb constant*

$$2kE = 2kE$$

$$\frac{k_c(e)^2}{r_n} = \frac{(\hbar \times n)^2}{m \times (r_n)^2}$$

$$k_c \times (e)^2 = \frac{(\hbar \times n)^2}{m \times r_n}$$

$$r_n = \frac{(\hbar \times n)^2}{m \times k_e \times (e)^2}$$

This is derivation number 64

$$2kE = 2kE$$

$$\frac{k_c(e)^2}{r_n} = \frac{(\hbar)^2 \times 2\pi \times v \times \alpha \times (Z)^2}{n \times L_a}$$

$$L_a = m \times v \times r_n$$

$$\frac{k_c(e)^2}{r_n} = \frac{(\hbar)^2 \times 2\pi \times v \times \alpha \times (Z)^2}{n \times m \times v \times r_n}$$

$$k_c(e)^2 = \frac{(\hbar)^2 \times 2\pi \times v \times \alpha \times (Z)^2}{n \times m \times v}$$

$$p = m \times v$$

$$k_c(e)^2 = \frac{(\hbar)^2 \times 2\pi \times v \times \alpha \times (Z)^2}{n \times p}$$

$$p = \hbar \times k$$

$$k_c(e)^2 = \frac{(\hbar)^2 \times 2\pi \times v \times \alpha \times (Z)^2}{n \times \hbar \times k}$$

$$k_c(e)^2 = \frac{\hbar \times 2\pi \times v \times \alpha \times (Z)^2}{n \times k}$$

$$k = \frac{n}{r}$$

$$k_c(e)^2 = \frac{\hbar \times 2\pi \times v \times \alpha \times (Z)^2}{n \times \frac{n}{r}}$$

$$\frac{k_c(e)^2}{r_n} = \frac{\hbar \times 2\pi \times v \times \alpha \times (Z)^2}{n \times n}$$

$$\hbar = \frac{h_p}{2\pi}$$

$$2kE = \frac{h_p \times v \times \alpha \times (Z)^2}{(n)^2}$$

This is derivation number 65

$$kE = \frac{h_p \times v \times \alpha \times (Z)^2}{2(n)^2}$$

$$kE = \frac{6.62607004 \times 10^{-34} \times 9.016535737 \times 10^{17} \times 7.297352563 \times 10^{-3} \times (Z)^2}{2(n)^2}$$

$$kE = \frac{4.3597447139 \times 10^{-18} \times (Z)^2}{2(n)^2} = \frac{2.1798723567 \times 10^{-18} \times (Z)^2}{(Z)^2}$$

$$\Delta kE = \frac{2.1798723567 \times 10^{-18} \times (Z)^2}{(n)^2\, e} = \frac{3.605693099\ eV \times (Z)^2}{(n)^2}$$

$$\Delta E_n = -\frac{h_p \times v \times \alpha}{2e} \times \left(\frac{(Z)^2}{(n_2)^2} - \frac{(Z)^2}{(n_1)^2}\right)$$

$$\Delta E_n = -\frac{6.62607004 \times 10^{-34} \times 9.016535737 \times 10^{17} \times 7.297352563 \times 10^{-3}}{2 \times 1.60217662 \times 10^{-19}} \times \left(\frac{(Z)^2}{(n_2)^2} - \frac{(Z)^2}{(n_1)^2}\right)$$

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$$\Delta E_n = \frac{-13.605693099\ eV}{1} \times \left(\frac{(Z)^2}{(n_2)^2} - \frac{(Z)^2}{(n_1)^2}\right)$$

This is derivation number 66

$$L_l = \sqrt{l(l+1)} \times \hbar$$
$$L_l^2 = l(l+1) \times \hbar^2$$
$$L_l\ (The\ orbital\ angular\ momentum)$$

This is derivation number 67

$$L_l = \sqrt{l(l+1)} \times \hbar$$
$$L_l{}^2 = l(l+1) \times \hbar^2$$
$$L_l{}^2 = (l^2 + l) \times \hbar^2 \quad \frac{(n)^2}{(n)^2}$$
$$L_l{}^2 = \frac{(n)^2(l^2 + l) \times \hbar^2}{(n)^2}$$
$$L_l = \sqrt{\frac{(n)^2(l^2 + l) \times \hbar^2}{(n)^2}} \times \hbar$$
$$L_l = n \times \sqrt{\frac{(l^2 + l)}{(n)^2}} \times \hbar$$
$$L_D = n\hbar \times \sqrt{\frac{(l^2 + l)}{(n)^2}}$$
$$L_D = n\hbar \times \sqrt{\frac{(l^2 + l)}{(n)^2 \times \left(\frac{(n) - l}{(n) - l}\right)}}$$
$$D_L = \sqrt{\frac{(l^2 + l)}{(n)^2 \times \left(\frac{(n) - l}{(n) - l}\right)}}$$

D_L is the $David's\ constant\ for\ orbital\ momentum$

$$L_D = n\hbar \times D_L$$

This is derivation number 68

$$L_D = \sqrt{((n)^2 - n_D)} \times \hbar$$
$$(n_D) = \frac{(n)^2 - ((l)^2 + l)}{\left(\frac{(n) - l}{(n) - l}\right)}$$
$$L_D = \sqrt{\left((n)^2 - \frac{(n)^2 - ((l)^2 + l)}{\left(\frac{(n) - l}{(n) - l}\right)}\right)} \times \hbar$$

This is derivation number 69

$$L_D = n\hbar \times \sqrt{\frac{(l^2 + l)}{(n)^2 \left(\frac{(n) - l}{(n) - l}\right)}}$$
$$L_a = m \times v \times r_n = n \times \hbar$$
$$L_D = m \times v \times r_n \times \sqrt{\frac{(l^2 + l)}{(n)^2 \left(\frac{(n) - l}{(n) - l}\right)}}$$

This is derivation number 70

$$L_D = m \times v \times r_n \times \sqrt{\frac{(l^2 + l)}{(n)^2 \left(\frac{(n) - l}{(n) - l}\right)}} \quad \frac{v \times r_n}{v \times r_n}$$

 doi:10.20944/preprints202501.1265.v20

$$L_D = \frac{m \times (v)^2 \times (r_n)^2}{v \times r_n} \times \sqrt{\frac{(l^2 + l)}{(n)^2 \left(\frac{(n) - l}{(n) - l}\right)}}$$

$$a_c = \frac{v^2}{r}$$

$$L_D = \frac{m \times a_c \times (r_n)^2}{v} \times \sqrt{\frac{(l^2 + l)}{(n)^2 \left(\frac{(n) - l}{(n) - l}\right)}}$$

$$\frac{v}{r} = \frac{\omega \times \alpha \times Z}{2 \times n}$$

$$L_D = \frac{m \times a_c \times r_n \times 2 \times n}{\omega \times \alpha \times Z} \times \sqrt{\frac{(l^2 + l)}{(n)^2 \left(\frac{(n) - l}{(n) - l}\right)}}$$

$$F_c = m \times a_c$$

$$L_D = \frac{F_c \times r_n \times 2 \times n}{\omega \times \alpha \times Z} \times \sqrt{\frac{(l^2 + l)}{(n)^2 \left(\frac{(n) - l}{(n) - l}\right)}} \qquad \frac{2\pi}{2\pi}$$

$$n \times \lambda = 2\pi \times r_n$$

$$L_D = \frac{F_c \times \lambda \times 2 \times (n)^2}{\omega \times \alpha \times Z \times 2\pi} \times \sqrt{\frac{(l^2 + l)}{(n)^2 \left(\frac{(n) - l}{(n) - l}\right)}}$$

$$k = \frac{2\pi}{\lambda}$$

$$L_D = \frac{F_c \times 2 \times (n)^2}{\omega \times \alpha \times Z \times k} \times \sqrt{\frac{(l^2 + l)}{(n)^2 \left(\frac{(n) - l}{(n) - l}\right)}}$$

$$\omega = C \times k$$
$$\omega = v_p \times k$$

$$L_D = \frac{F_c \times 2 \times (n)^2}{\alpha \times Z \times C \times (k)^2} \times \sqrt{\frac{(l^2 + l)}{(n)^2 \left(\frac{(n) - l}{(n) - l}\right)}}$$

$$L_D = \frac{F_c \times 2 \times (n)^2}{\alpha \times Z \times v_p \times (k)^2} \times \sqrt{\frac{(l^2 + l)}{(n)^2 \left(\frac{(n) - l}{(n) - l}\right)}}$$

$$C = \frac{n \times v}{\alpha \times Z}$$

$$L_D = \frac{F_c \times 2 \times n}{v \times (k)^2} \times \sqrt{\frac{(l^2 + l)}{(n)^2 \left(\frac{(n) - l}{(n) - l}\right)}}$$

This is derivation number 71

$$L_D = m \times v \times r_n \times \sqrt{\frac{(l^2 + l)}{(n)^2 \left(\frac{(n) - l}{(n) - l}\right)}}$$

$$L_D = m \times v \times \sqrt{\frac{(l^2 + l) \times (r_n)^2}{(n)^2 \left(\frac{(n) - l}{(n) - l}\right)}}$$

$$r = \frac{n}{k}$$

$$L_D = m \times v \times \sqrt{\frac{(l^2 + l)}{(k)^2 \left(\frac{(n) - l}{(n) - l}\right)}}$$

$$p = m \times v$$

$$L_D = p \times \sqrt{\frac{(l^2 + l)}{(k)^2 \left(\frac{(n) - l}{(n) - l}\right)}}$$

$$L_D = \sqrt{\frac{(l^2 + l) \times (p)^2}{(k)^2 \left(\frac{(n) - l}{(n) - l}\right)}}$$

$$p = \hbar \times k$$

$$L_D = \sqrt{\frac{(l^2 + l) \times (\hbar)^2}{\left(\frac{(n) - l}{(n) - l}\right)}}$$

$$L_D = \hbar \times \sqrt{\frac{(l^2 + l)}{\left(\frac{(n) - l}{(n) - l}\right)}}$$

This is derivation number 72

$$mC\,\psi = i\hbar\gamma^{\mu}\partial_{\mu}\psi$$
$$mC\psi = i\hbar\gamma^{\mu}(\partial_{\mu} + \Gamma_{\mu})\psi$$
$$\nabla_{\mu} = (\partial_{\mu} - \Gamma_{\mu})$$

$$i\hbar\frac{\partial\psi}{\partial t} = \hat{H}\psi$$

Classical Schrödinger equation

$$\hat{H}_{atom} = -\frac{\hbar^2}{2m_e}\nabla^2 - \frac{Z \times (e)^2}{4\pi \times \varepsilon_0 \times r_n}$$

Hamiltonian of an electron in a hydrogen atom

$$V_{(white)}(r) = E_0 e^{-r/r_0}$$

Potential energy of a small spherical body whose size decreases with distance, such as a white hole.

E_0 (Potential Energy) / (Screening energy)

r (radial coordinate)

r_0 Range of the eyebrow effect

$$\hat{H}_{total} = \hat{H}_{atom} + V_{(white)}(r)$$

We put the equation of the black hole ejection

$$i\hbar\frac{\partial\psi}{\partial t} = [\hat{H}]\psi$$

$$\hat{H}_{total} = \hat{H}_{atom} + V_{(white)}(r)$$

$$i\hbar\frac{\partial\psi}{\partial t} = [\hat{H}_{atom} + V_{(white)}(r)]\psi$$

$$i\hbar\frac{\partial\psi}{\partial t} = [-\frac{\hbar^2}{2m_e}\nabla^2 - \frac{Z \times (e)^2}{4\pi \times \varepsilon_0 \times r_n} + E_0 e^{-r/r_0}]\psi$$

$$E\_0 \text{ Determines the extent of the blocking or voltage correction effect.}$$

$$V(r) = -\frac{Ze^2}{4\pi\varepsilon_0 r} + E_0 e^{-r/r_0}$$

If we assume that the singularity is nothing but a white hole, this makes it necessary to make a modification to the Schrödinger equation.

$$i\hbar\frac{\partial\psi}{\partial t} = [-\frac{\hbar^2}{2m_e}\nabla^2 - \frac{Z \times (e)^2}{4\pi \times \varepsilon_0 \times r_n} + E_0 e^{-r/r_0}]\psi$$

E_0 is the energy displacement, zero

There is another modification that we can enter into a second equation, and E_0 is the energy displacement, zero.

This is derivation number 73

These are some equations after removing the speed of light and putting in the phase speed. The phase velocity was included because it became clear from the derivation, I made that from Einstein's perspective on the speed of light he was focusing on the speed of light in a vacuum and did not consider other media such as water which affect the speed of light as Christian Huygens explained it and therefore this had to be into account in the calculations.

This will enable us to add the group velocity as a result of adding the phase velocity when the speed of light is constant.

$R_{\mu\nu} - \frac{1}{2} R g_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi G}{(v_p)^4} T_{\mu\nu}$

$$R_{\mu\nu} - \frac{1}{2} R g_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi G}{(\boldsymbol{v}_g)^4} T_{\mu\nu}$$

1. (General quantitative relativity)

$$ds^2 = -\left(1 - \frac{2GM}{(\boldsymbol{v}_p)^2 r}\right)(\boldsymbol{v}_p)^2 dt^2 + \left(1 - \frac{2GM}{(\boldsymbol{v}_p)^2 r}\right)^{-1} dr^2 + r^2 d\Omega^2$$

$$ds^2 = -\left(1 - \frac{2GM}{(\boldsymbol{v}_g)^2 r}\right)(\boldsymbol{v}_g)^2 dt^2 + \left(1 - \frac{2GM}{(\boldsymbol{v}_g)^2 r}\right)^{-1} dr^2 + r^2 d\Omega^2$$

2. (*Schwarzschild Metric*)

$$ds^2 = -\left(1 - \frac{2GMr}{\rho^2 (\boldsymbol{v}_p)^2}\right)(\boldsymbol{v}_p)^2 dt^2 - \frac{4GMar}{\rho^2 (\boldsymbol{v}_p)^2} \sin^2\theta \, dt d\phi + \frac{\rho^2}{\Delta} dr^2 + \rho^2 d\theta^2 + \left(r^2 + a^2 + \frac{2GMa^2}{\rho^2 (\boldsymbol{v}_p)^2} \sin^2\theta\right) \sin^2\theta \, d\phi^2$$

$$ds^2 = -\left(1 - \frac{2GMr}{\rho^2 (\boldsymbol{v}_g)^2}\right)(\boldsymbol{v}_g)^2 dt^2 - \frac{4GMar}{\rho^2 (\boldsymbol{v}_g)^2} \sin^2\theta \, dt d\phi + \frac{\rho^2}{\Delta} dr^2 + \rho^2 d\theta^2 + \left(r^2 + a^2 + \frac{2GMa^2}{\rho^2 (\boldsymbol{v}_g)^2} \sin^2\theta\right) \sin^2\theta \, d\phi^2$$

$$\rho^2 = r^2 + a^2 \cos^2\theta$$

$$\Delta = r^2 - \frac{2GMr}{(\boldsymbol{v}_p)^2} + a^2$$

$$\Delta = r^2 - \frac{2GMr}{(\boldsymbol{v}_g)^2} + a^2$$

3. (*Kerr Metric*)

$$ds^2 = -\left(1 - \frac{2GMr - Q^2}{\rho^2 (\boldsymbol{v}_p)^2}\right)(\boldsymbol{v}_p)^2 dt^2 - \frac{4GMar}{\rho^2 (\boldsymbol{v}_p)^2} \sin^2\theta \, dt d\phi + \frac{\rho^2}{\Delta} dr^2 + \rho^2 d\theta^2 + \left(r^2 + a^2 + \frac{(2GMr - Q^2)a^2}{\rho^2 (\boldsymbol{v}_p)^2} \sin^2\theta\right) \sin^2\theta \, d\phi^2$$

$$ds^2 = -\left(1 - \frac{2GMr - Q^2}{\rho^2 (\boldsymbol{v}_g)^2}\right)(\boldsymbol{v}_g)^2 dt^2 - \frac{4GMar}{\rho^2 (\boldsymbol{v}_g)^2} \sin^2\theta \, dt d\phi + \frac{\rho^2}{\Delta} dr^2 + \rho^2 d\theta^2 + \left(r^2 + a^2 + \frac{(2GMr - Q^2)a^2}{\rho^2 (\boldsymbol{v}_g)^2} \sin^2\theta\right) \sin^2\theta \, d\phi^2$$

4. (*Kerr − Newman Metric*)

$$R_s = \frac{2GM}{(\boldsymbol{v}_p)^2}$$

$$R_s = \frac{2GM}{(\boldsymbol{v}_p)^2}$$

5. (*Schwarzschild Radius*)

$$\Delta t' = \frac{\Delta t}{\sqrt{1 - \frac{2GM}{(\boldsymbol{v}_p)^2 r}}}$$

$$\Delta t' = \gamma \Delta t = \frac{\Delta t}{\sqrt{1 - \frac{v^2}{(\boldsymbol{v}_g)^2}}}$$

6. $(Gravitational\ Time\ Dilation)$

$$z = \frac{1}{\sqrt{1 - \frac{2GM}{(\boldsymbol{v}_p)^2 r}}} - 1$$

$$z = \frac{1}{\sqrt{1 - \frac{2GM}{(\boldsymbol{v}_g)^2 r}}} - 1$$

7. $(Gravitational\ Redshift)$

$$\theta_E = \sqrt{\frac{4GM}{(\boldsymbol{v}_p)^2} \frac{D_{LS}}{D_L D_S}}$$

$$\theta_E = \sqrt{\frac{4GM}{(\boldsymbol{v}_g)^2} \frac{D_{LS}}{D_L D_S}}$$

8. $(Einstein\ Ring\ or\ Gravitational\ Lensing\ Angle)$

$$\left(\frac{\dot{a}}{a}\right)^2 = \frac{8\pi G}{3}\rho - \frac{k}{a^2} + \frac{\Lambda}{3}$$

9. $(Friedmann\ Equation)$

$$\Delta\omega = \frac{6\pi GM}{(\boldsymbol{v}_p)^2 a(1 - e^2)}$$

$$\Delta\omega = \frac{6\pi GM}{(\boldsymbol{v}_g)^2 a(1 - e^2)}$$

$$\Delta\varphi = \frac{6\pi \mathrm{GM}}{(\boldsymbol{v}_p)^2 a(1 - e^2)}$$

$$\Delta\varphi = \frac{6\pi \mathrm{GM}}{(\boldsymbol{v}_g)^2 a(1 - e^2)}$$

Δφ is the additional precession per orbit.

10. $(Perihelion\ Precession\ of\ Mercury)$

$$\boldsymbol{L}^2 = \boldsymbol{L}^2$$

$\boldsymbol{L}$ (***The orbital angular momentum***)

$$\boldsymbol{l}(\boldsymbol{l}+\boldsymbol{1}) \times \hbar^2 = ((\boldsymbol{n})^2 - \boldsymbol{n}) \times \hbar^2$$

$$\boldsymbol{l}(\boldsymbol{l}+\boldsymbol{1}) = ((\boldsymbol{n})^2 - \boldsymbol{n})$$

$$((\boldsymbol{l})^2 + \boldsymbol{l}) = ((\boldsymbol{n})^2 - \boldsymbol{n})$$

$$(\boldsymbol{n})^2 - ((\boldsymbol{l})^2 + \boldsymbol{l}) = (\boldsymbol{n})$$

$$(\boldsymbol{n}) = (\boldsymbol{n})^2 - ((\boldsymbol{l})^2 + \boldsymbol{l})$$

The electron generates a constant field while rotating around the nucleus, but when it gains energy, it generates a changing field. This explains why it has a torque resulting from the energy during the experiment. Therefore, if the electron is observed in its normal state without being excited, the electron will behave as a particle, and if it is excited, it will behave as a wave.

The Mössbauer effect proved that general relativity is true. Relativity explains that the fastest speed is the speed of light. However, if the Mössbauer effect differs depending on the medium it is in, due to the refractive index, then relativity will differ.

5. Method

My name is Ahmed. I have made a theoretical derivation of the equation of general relativity as explained in this research for the purpose of obtaining an equation that can be applied within the quantum world so that it describes the movement of the electron during the quantum jump in the Bohr model. After that, the researcher Samira reviewed the research and verified it, and then she worked on applying this theory to the movement of the electron during the occurrence of the quantum leap, using previous research and matching it with the results of this equation to determine its validity.

This part of the research will explain the spectrum of the hydrogen atom in a new way, as the results presented in these tables from previous research match the results extracted from the equation, and this is consistent with the validity of this equation. Because the new equation is consistent with the photon energy equation. We will discuss that part of the research in the results and discussion.

Table 5 shows the measurement results tested.[3] (Nanni, 2015)

Table 5. it represents the theoretical and experimental value of the hydrogen atom. Using the photon energy law mentioned above, this table.

$$\Delta E = E_{n'} - E_n = h\frac{c}{\lambda} \quad \rightarrow \quad \frac{1}{\lambda} = \frac{4}{B}\left(\frac{1}{n'^2} - \frac{1}{n^2}\right)$$

The way toward the quantum mechanics was definitely opened! The calculated wavelength values vs the experimental ones are listed in table

Spectral Line	*Experimental Value*	*Theoretical Value*
-----	(nm)	(nm)
λ(n'=2, n=1)	121.5	122.0
λ(n'=3, n=1)	102.5	103.0
λ(n'=4, n=1)	97.2	97.3
λ(n'=2, n=3)	656.1	656.3
λ(n'=2, n=4)	486.0	486.1
λ(n'=3, n=4)	1874.6	1875.0

My scientific research explains how the universe initially expanded so quickly that the change in phase velocity from the speed of light led to this expansion in spacetime. Since I put the phase velocity in place of the speed of light in general relativity because of the derivative I did, and this equation will be known as general quantum relativity, then this means that the speed of light was moving differently, and this will lead to spacetime being affected by different media, as my equations show, so the universe was initially expanding, and then inflation occurred as a result of the phase velocity differing from the speed of light, which led to the expansion of spacetime faster than light, and this led to homogeneity in the cosmic background.

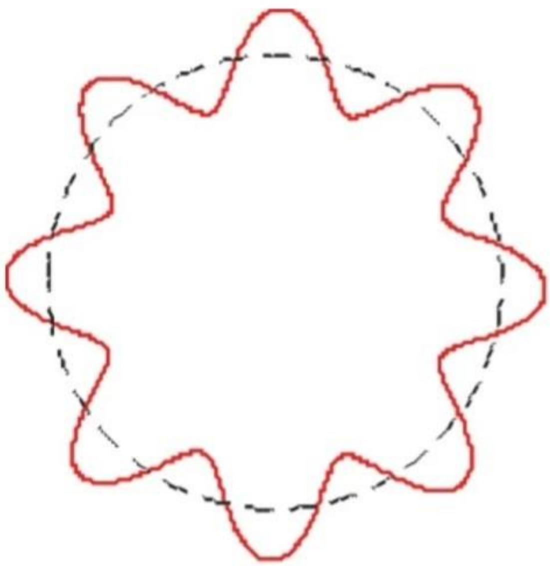

Figure 1. Bohr hydrogen atomic model incorporating de Broglie's .[4] (Jordan, 2024).

This drawing, taken from previous research, shows how the quantum leap occurs through interference, as my equation showed. When interference occurs between the orbit occupied by the electron and the energy level higher than the electron's orbit, it occurs in the form of wave interference of this type as a result of a contraction in the fabric of space-time. The black circle represents the orbit occupied by the electron, while the red color represents how interference occurs from the orbit higher to the orbit occupied by the electron in the form of wave interference. In other words, the upper level works to contract, forming a wave equal to the same wave as the level occupied by the electron through the de Broglie equation. $n \times \lambda = 2\pi \times r$

If we make the electron quantum entangled in particle accelerators, then if we make one of these electrons be in a short line and the other be in a long line, when one approaches the speed of light, the other must exceed the speed of light. In other words, the two entangled bodies are in two dimensions, that is, different dimensions, and this happens as a result, a distortion of space-time, which makes during the measurement that the speed is breached, but in reality it does not exceed the speed. This is the same idea as the distortion of the orbits that I explained. Because it is assumed that the electron does not move from its position, however, a distortion occurs in the orbit with the highest energy, and it forms a wave similar to the orbit occupied by the electron, according to De Broglie's laws. This occurs through the distortion of space-time as a result of the increase in energy.

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^2 \times 4}{\lambda\, nm \times \boldsymbol{e}} \frac{\left(l_{(p)}\right)^2}{\boldsymbol{\Delta E_n}} T_{\mu\nu}$$

Because the equation connects more than one equation into a single equation. As

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi \times G}{C^4} T_{\mu\nu}$$

$$\Delta E_n = \frac{h_p \times C}{\lambda\, nm \times e}$$

$$n \times \lambda = 2\pi \times r_n$$

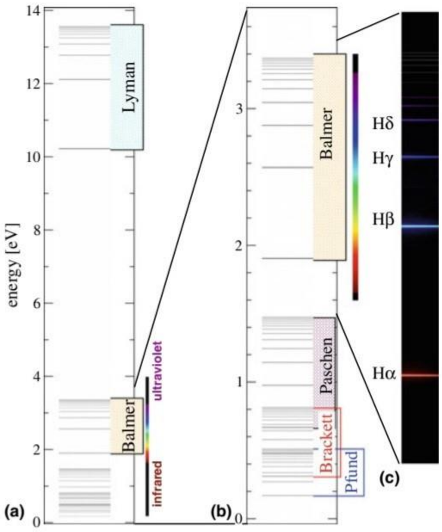

Figure 2. The observed emission line spectrum of atomic hydrogen in chapter 2 atoms.[5] (Manini, 2020).

Table 6. shows the measurement results of one of the previous researches related to the spectrum of the hydrogen atom in chapter 2 atoms.[5] (Manini, 2020).

The 4 lowest-energy series of spectral lines of atomic hydrogen

name	lower *n*	lowest energy [eV]	max energy [eV]	spectral region
Lyman series	1	10.2	13.6	UV
Balmer series	2	1.89	3.40	Visible-UV
Paschen series	3	0.66	1.51	IR
Brackett series	4	0.31	0.85	IR

This shape is a result of the fact that the electron, after a quantum leap occurred as a result of an interference between the orbital that it occupies and the energy level above it, was in an unstable state. Therefore, when the highest level of energy returns to its position, it releases energy in the form of spectral lines. These lines are determined according to the amount of energy, as shown in the picture.

6. Results Obtained

This scientific research aims to prove a theory by comparing the practical results of this theory with the original results and making the comparison in a table. We will discuss that here .

My theory is based on introducing the curvature of spacetime into the equation, but quantum mechanics shows that it is not affected by gravity. How to interact with the curvature of spacetime has not yet been proven. As a result, my equations show a way to conduct an experiment that enables direct interaction with the curvature of spacetime. Therefore, this experiment practically proves that quantum mechanics made a mistake in its concept when it showed gravity does not interact with it. How to conduct an experimental experiment to prove the validity of my equations

Steps to conduct the experiment

1) The place where the experiment will take place must be chosen, and it must be at a high altitude, such as Mount Everest because the higher the altitude, the less gravity.

2) The experiment is about creating a quantum leap for the electron so that we can know the emission lines that represent the fingerprint of the element and compare them at different heights. Let us take the example of the hydrogen atom. After knowing the choice of the element, the device that will measure the spectral lines of the element must be taken to Mount Everest, where the experiment will be conducted.

3) We will excite the element keeping all elements constant as energy and the comparison will be between wavelength and curvature of spacetime. The first measurement is at the bottom of the mountain, that is, before climbing the mountain first. Then we measure in the middle of the mountain, then we test at the top of the mountain and compare the atomic spectra. If my theoretical results are correct, there will be skewing of the spectral lines at different heights due to distortion of the fabric of space-time.

4) If we measure atomic spectra, we also measure the Zeeman, Stark, and magneto-stark effects separately.

The reason they were not previously able to measure the curvature of space-time is because my equations show that the effect of energy and wavelength when measured as two variables will cancel each other out, so space-time will not be affected.

Gravitational Effect on Atomic Energy Levels

Objective: Measure the effect of gravity on atomic energy levels

Equipment:

• A gas sample (e.g., hydrogen or cesium) in a vacuum chamber.

• A laser to excite electrons at specific energy levels.

• A high-precision spectrometer.

• A variable gravitational field (e.g., using aircraft simulating microgravity).

Procedure:

.1 Measure the atomic spectrum in a normal gravitational environment.

.2 Measure the spectrum in a reduced-gravity environment (e.g., during parabolic flights).

.3 Compare the energy levels and emission lines.

Expected Outcome:

• If the spectrum shifts at different gravitational strengths, it indicates that gravity affects atomic energy levels

My equations clearly show that if proven in practical experiments, it indicates that the gravitational constant G is not a cosmic constant in quantum mechanics, but is affected by the wavelength and the energy difference, that is, it is variable. In other words, gravity is not an absolute quantity, but rather the quantum state is influenced by me. For this reason, quantum mechanics is not related to general relativity.

My equations explain the effect (magnetic attraction) and Bayfield-Brown effect My equations confirm the effect of electromagnetism on gravity.

Well, with these experiments, the Pound-Rebecca experiments, also known as gravitational redshift, will prove what the equation tells you.

$$\boldsymbol{G_{\mu v} + \Lambda g_{\mu v} - T_{\mu v} = \frac{8\pi \times G}{C^4} = 2.0766474428 \times 10^{-43}} \qquad (16)$$

$$\boldsymbol{E_n = E_2 - E_1}$$

$$\boldsymbol{\Delta E_n = \frac{-13.605693099\ eV}{1} \times \left(\frac{(Z)^2}{(n_2)^2} - \frac{(Z)^2}{(n_1)^2}\right)}$$

$$G_{\mu v} + \Lambda g_{\mu v} = \frac{(2\pi)^6 \times (\hbar)^4 \times 4}{(\lambda\, nm \times e)^5 \times (\mu_0 \times \varepsilon_0)^2} \frac{\left(l_{(p)}\right)^2}{(\Delta E_n)^5} T_{\mu v}$$

$$G_{\mu v} + \Lambda g_{\mu v} = \frac{(2\pi)^6 \times (1.0545718 \times 10^{-34})^4 \times 4}{(\lambda\, nm \times e)^5 \times (4\pi \times 10^{-7} \times 8.854187813 \times 10^{-12})^2} \frac{(1.616255011 \times 10^{-35})^2}{(\Delta E_n)^5} T_{\mu v}$$

$$G_{\mu v} + \Lambda g_{\mu v} = \frac{6.4231253544 \times 10^{-167}}{(\lambda\, nm \times e)^5} \frac{1}{(\Delta E_n)^5} T_{\mu v}$$

$$(\Delta E_n)^5 = \frac{6.4231253544 \times 10^{-167}}{(\lambda\, nm \times e)^5} \frac{1}{G_{\mu v} + \Lambda g_{\mu v} - T_{\mu v}}$$

$$(\Delta E_n)^5 = \frac{6.4231253544 \times 10^{-167}}{(\lambda\, nm \times e)^5} \frac{1}{\boldsymbol{2.0766474428 \times 10^{-43}}}$$

$$(\lambda\, nm)^5 = \frac{3.0930261448 \times 10^{-124}}{(\Delta E_n \times e)^5}$$

$$(\lambda\, nm)^5 = \frac{3.0930261448 \times 10^{-124}}{\left(\boldsymbol{\frac{-13.605693099\ eV}{1}} \times \left(\boldsymbol{\frac{(Z)^2}{(n_2)^2} - \frac{(Z)^2}{(n_1)^2}}\right) \times e\right)^5}$$

$$\lambda\, nm = 5\sqrt{\frac{3.0930261448 \times 10^{-124}}{\left(\boldsymbol{\frac{-13.605693099\ eV}{1}} \times \left(\boldsymbol{\frac{(Z)^2}{(n_2)^2} - \frac{(Z)^2}{(n_1)^2}}\right) \times 1.60217662 \times 10^{-19}\right)^5}}$$

$$\lambda = 656.11227252\ nm$$

This example of a hydrogen atom in the Balmer series.

$$G_{\mu v} + \Lambda g_{\mu v} = \frac{4 \times (\hbar)^8 \times (2\pi)^{10}}{(\mu_0 \times \varepsilon_0)^4 \times (\lambda\, nm)^9 \times (\boldsymbol{e})^9} \frac{\left(l_{(p)}\right)^2}{(\boldsymbol{\Delta E_n})^9} T_{\mu v}$$

$$\boldsymbol{\Delta E_n = \frac{h_p \times C}{\lambda} = \frac{1239.8419637\ eVnm}{\lambda}}$$

Photon energy equation.

$$(\boldsymbol{\Delta E_n})^9 = \frac{4 \times (\hbar)^8 \times (2\pi)^{10}}{(\mu_0 \times \varepsilon_0)^4 \times (\lambda\, nm)^9 \times (\boldsymbol{e})^9} \frac{\left(l_{(p)}\right)^2}{G_{\mu v} + \Lambda g_{\mu v}} T_{\mu v}$$

Example of a hydrogen atom.

$$\boldsymbol{\Delta E_n = 9\sqrt{\frac{4 \times (\hbar)^8 \times (2\pi)^{10}}{(\mu_0 \times \varepsilon_0)^4 \times (\lambda\, nm)^9 \times (e)^9} \frac{\left(l_{(p)}\right)^2}{G_{\mu v} + \Lambda g_{\mu v} - T_{\mu v}}}}$$

Example of a hydrogen atom in the Balmer series.

We remove the energy level (n)

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$$\boldsymbol{\Delta E_n} = \mathbf{9}\sqrt{\frac{\mathbf{4.8160445107} \times \mathbf{10}^{-223}}{(\ \boldsymbol{\lambda}\ \mathbf{nm}\ )^9 \times (\boldsymbol{e})^9}}$$

$$\boldsymbol{\Delta E_n} = 9\sqrt{\frac{4.8160445107 \times 10^{-223}}{(\ 656.11227252\ )^9 \times (1.60217662 \times 10^{-19})^9}}$$

$\Delta E_n = 1.8896795971$

The unit of measurement for photon energy is electron volt (eV), the wavelength is (nm)

$$\lambda\ nm = \frac{1}{R_\infty \times \left(\frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_2})^2} - \frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_1})^2}\right)}$$

$$R_\infty = 1.0973731731 \times 10^7\ m^{-1}$$

$$\boldsymbol{\Delta E_n} = \frac{\boldsymbol{h_p} \times \boldsymbol{C}}{\boldsymbol{\lambda}}$$

$$\boldsymbol{\Delta E_n} = -\frac{\boldsymbol{h_p} \times \boldsymbol{C} \times \alpha}{\mathbf{2}\boldsymbol{e} \times \boldsymbol{\lambda}} \times \left(\frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_2})^2} - \frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_1})^2}\right)$$

$$\lambda = \frac{2\pi \times r_n}{n}$$

$$\boldsymbol{\Delta E_n} = -\frac{\boldsymbol{h_p} \times \boldsymbol{C} \times \alpha}{\mathbf{2}\boldsymbol{e} \times \frac{2\pi \times r_n}{n}} \times \left(\frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_2})^2} - \frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_1})^2}\right)$$

$$\lambda = \frac{2\pi \times r_n}{n} = \frac{2\pi \times 5.29177202590 \times 10^{-11} \times (\boldsymbol{n})^2}{n}$$

$$\lambda = \frac{2\pi \times r_n}{n} = 2\pi \times 5.29177202590 \times 10^{-11} \times \boldsymbol{n}$$

$$\boldsymbol{\Delta E_n} = -\frac{6.62607004 \times 10^{-34} \times \mathbf{299792458} \times 7.297352563 \times 10^{-3}}{\mathbf{2} \times 1.60217662 \times 10^{-19} \times 2\pi \times 5.29177202590 \times 10^{-11}} \times \left(\frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_2})^2} - \frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_1})^2}\right)$$

$$\boldsymbol{\Delta E_n} = \frac{\mathbf{-13.605693099}\ \boldsymbol{eV}}{\mathbf{1}} \times \left(\frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_2})^2} - \frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_1})^2}\right)$$

$$\boldsymbol{\Delta E_n} = -\frac{\boldsymbol{h_p} \times \boldsymbol{C} \times \alpha}{\mathbf{2}\boldsymbol{e} \times \boldsymbol{\lambda}} \times \left(\frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_2})^2} - \frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_1})^2}\right)$$

$$\boldsymbol{\Delta E_n} = -\frac{6.62607004 \times 10^{-34} \times \mathbf{299792458} \times 7.297352563 \times 10^{-3}}{\mathbf{2} \times 1.60217662 \times 10^{-19} \times \mathbf{3.324918425} \times 10^{-10}} \times \left(\frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_2})^2} - \frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_1})^2}\right)$$

$$\boldsymbol{\Delta E_n} = \frac{\mathbf{-13.605693099}\ \boldsymbol{eV}}{\mathbf{1}} \times \left(\frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_2})^2} - \frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_1})^2}\right)$$

$$\boldsymbol{\Delta E_n} = -\frac{\boldsymbol{h_p} \times \nu \times \alpha}{\mathbf{2}\boldsymbol{e}} \times \left(\frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_2})^2} - \frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_1})^2}\right)$$

$$\boldsymbol{\Delta E_n} = -\frac{6.62607004 \times 10^{-34} \times \mathbf{9.016535737} \times 10^{17} \times 7.297352563 \times 10^{-3}}{\mathbf{2} \times 1.60217662 \times 10^{-19}} \times \left(\frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_2})^2} - \frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_1})^2}\right)$$

$$\boldsymbol{\Delta E_n} = \frac{\mathbf{-13.605693099}\ \boldsymbol{eV}}{\mathbf{1}} \times \left(\frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_2})^2} - \frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_1})^2}\right)$$

The unit of measurement for $\boldsymbol{\Delta E_n}$ photon energy is electron volt (eV)

$$\boldsymbol{E_n} = \frac{\boldsymbol{h_p} \times \boldsymbol{C}}{\boldsymbol{\lambda}}$$

$$\lambda = \frac{2\pi \times r_n}{n}$$

$$\boldsymbol{E_n} = \frac{n \times \boldsymbol{h_p} \times \boldsymbol{C}}{2\pi \times r_n} = \frac{\boldsymbol{n} \times 6.62607004 \times 10^{-34} \times \mathbf{299792458}}{2\pi \times 5.29177202590 \times 10^{-11} \times (\boldsymbol{n})^2}$$

$$\boldsymbol{E_n} = \frac{5.9744197314 \times 10^{-16}\ \boldsymbol{J}}{\boldsymbol{n}}$$

$$\boldsymbol{\Delta E_n} = -\frac{\boldsymbol{h_p} \times \nu \times \alpha}{\mathbf{2}\boldsymbol{e}} \times \left(\frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_2})^2} - \frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_1})^2}\right)$$

$$\boldsymbol{E_n} = \frac{\boldsymbol{h_p} \times \boldsymbol{C}}{\boldsymbol{\lambda}}$$

$$\boldsymbol{\Delta}\ \boldsymbol{h_p} \times \nu = -\frac{\boldsymbol{h_p} \times \nu \times \alpha}{\mathbf{2}\boldsymbol{e}} \times \left(\frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_2})^2} - \frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_1})^2}\right)$$

$$\boldsymbol{\Delta\nu} = -\frac{\nu \times \alpha}{\mathbf{2}} \times \left(\frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_2})^2} - \frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_1})^2}\right)$$

$$\nu = \frac{\nu \times (n)^2}{2\pi \times r_n \times \alpha \times Z}$$

$$\boldsymbol{\Delta\nu} = -\frac{\frac{\nu \times (n)^2}{2\pi \times r_n \times \alpha} \times \alpha}{\mathbf{2}} \times \left(\frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_2})^2} - \frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_1})^2}\right)$$

$$\boldsymbol{\Delta\nu} = -\frac{\nu \times (n)^2}{4\pi \times r_n} \times \left(\frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_2})^2} - \frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_1})^2}\right)$$

$$\boldsymbol{\Delta\nu} = -\frac{2187691.261}{4\pi \times 5.29177202590 \times 10^{-11}} \times \left(\frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_2})^2} - \frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_1})^2}\right)$$

$$\boldsymbol{\Delta\nu} = \frac{\mathbf{-3.289842008} \times \mathbf{10^{15}}\ \boldsymbol{eV}}{\mathbf{1}} \times \left(\frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_2})^2} - \frac{(\boldsymbol{Z})^2}{(\boldsymbol{n_1})^2}\right)$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi \times (p)^4 \times Z^4}{(n)^4} \frac{(\alpha)^4 \times G}{\left(h_{(p)} \times \frac{\Delta\nu \times 2\ eV}{\alpha} \times \frac{1}{\left(\frac{(Z)^2}{(n_1)^2} - \frac{(Z)^2}{(n_2)^2}\right)}\right)^4} T_{\mu\nu}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi \times (p)^4 \times Z^4}{(n)^4} \frac{(\alpha)^8 \times G}{\left(h_{(p)} \times \Delta\nu \times 2 \times e\right)^4} \times \left(\frac{(Z)^2}{(n_1)^2} - \frac{(Z)^2}{(n_2)^2}\right) T_{\mu\nu}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi \times (p)^4 \times Z^4}{(n)^4} \frac{(\alpha)^8 \times G}{(\Delta E_n \times 2 \times e)^4} \times \left(\frac{(Z)^2}{(n_1)^2} - \frac{(Z)^2}{(n_2)^2}\right) T_{\mu\nu}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi \times (p)^4 \times Z^4}{(n)^4} \frac{(\alpha)^8 \times G}{\left(\frac{-13.605693099\ eV}{1} \times \left(\frac{(Z)^2}{(n_2)^2} - \frac{(Z)^2}{(n_1)^2}\right) \times 2 \times e\right)^4} \times \left(\frac{(Z)^2}{(n_1)^2} - \frac{(Z)^2}{(n_2)^2}\right) T_{\mu\nu}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi \times (p)^4 \times Z^4}{(n)^4} \frac{(\alpha)^8 \times G}{\left(\frac{-13.605693099\ eV}{1} \times 2 \times e\right)^4} T_{\mu\nu}$$

$$\boldsymbol{h_p} = m_e \times \boldsymbol{C} \times \alpha \times \mathbf{2}\boldsymbol{\pi} \times \boldsymbol{r_n}$$

$$\boldsymbol{C} = \boldsymbol{\lambda} \times \boldsymbol{v}$$

$$\boldsymbol{h_p} = m_e \times \boldsymbol{\lambda} \times \boldsymbol{v} \times \alpha \times \mathbf{2}\boldsymbol{\pi} \times \boldsymbol{r_n}$$

Space-time represents in the equation the force of attraction of the nucleus for the electron. Where we take the hydrogen atom compared to the sodium atom. We find after comparison that the undulations that occur in the sodium atom are higher than those that occur in the hydrogen atom. That is, during the occurrence of the quantum jump of the electron, the higher energy level than the level occupied by the electron undulates. So the number of ripples (ripple amplitude) is higher than that of the hydrogen atom during the occurrence of the quantum jump, and this is consistent with the de Broglie equation. $n \times \lambda$ is represented by a ratio to space-time. It is the number of ripples that occur in the energy level higher than the level occupied by the electron until interference occurs between the two levels, the higher energy level and the level occupied by the electron. In other words, as the number of orbitals occupied by the electron increases, the number of ripples that occur at the higher energy levels increases, causing the curvature (contraction) of the fabric of space-time. The interference between the two levels occurs in a wave form so that the quantum jump of the electron occurs. The photon's energy is represented by a ratio to the fabric of space-time, the force that causes the fabric of space-time to bend (contract). The more energy increases, the more space-time contracts through the occurrence of quantum disturbances at the highest energy level, which makes the highest energy level generate waves similar to the orbital number occupied by the electron. Because of these disturbances that occur at the highest energy level, the two levels interfere with each other, the highest energy level, and the level occupied by the electron. A quantum leap occurs, and this is consistent with the quantum Zeno effect, where the electron will remain fixed in its position. This is what my equation indicates, as I explain that these quantum fluctuations occur through a contraction in the fabric of space-time. This contraction occurs as a result of this tissue absorbing energy. Because of this, contraction affects the energy levels in the atom. This contraction works to contract the energy

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level higher than the level occupied by the electron. Wave interference occurs between the highest energy level and the level occupied by the electron, and a quantum jump occurs from the observer's perspective. But from the electron's perspective, it remains fixed in its position.

The Casimir effect is according to a law that states that after all the objects acting on the plates disappear until imaginary particles are detected. My equation proves that there is one thing that was not included in the calculations, which is the effect of space-time. Since the plates have a static mass that works to curve space-time, and the presence of imaginary particles works when they collide with each other, they disappear. But according to the law of conservation of energy, the energy will not disappear and will affect the fabric of space-time, making it turbulent like a water wave, and these disturbances that occur on it form waves. This wave works to impact the panels from moving in and out, and because the external disturbances are higher than the internal ones, they cause the panels to move towards each other.

This relationship shows that although we cannot measure what happens when an electronic quantum jump occurs. This law also shows that there is a relationship between the energy of the photon and the fabric of space-time, even if it is not measured by measuring devices. Because measuring devices are considered primitive devices when making the process of measuring the quantitative world. What is being measured are the spectra of the elements being measured, not what happens to the electron when the quantum jump of the electron to the higher level. Second, Maxwell told Rutherford that the electron changes direction as it orbits the nucleus, so it must lose energy to cause a collision with the nucleus, which it does not. My equation tells me the electron moves in a large circle around the nucleus. A body moving in a large circle whose direction of motion is in a straight line. Thus, the electron moves in a straight line. Newton's law states that an object at rest remains at rest unless acted upon by an external or internal force. Likewise, an object in motion stays in motion unless an external or internal force affects its movement, the electron does not lose energy.

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^5 \times (\hbar)^4 \times 4}{(\lambda\, nm \times e)^4} \frac{G}{(\Delta E_n)^4} T_{\mu\nu}$$

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{(2\pi)^6 \times (\hbar)^4 \times 4}{(\lambda\, nm \times e)^5 \times (\mu_0 \times \varepsilon_0)^2} \frac{\left(l_{(p)}\right)^2}{(\Delta E_n)^5} T_{\mu\nu}$$

The results of the experimental value were obtained by using the results of previous research on the hydrogen atom. I prove in Table 7 that the results of the equations are identical to their original results in Table 5, which indicates the validity of this law

Table 7. Comparing my theoretical results through my equation with previous results.

	Theoretical value (My work)				**Experimental value**
Spectral Line	Energy		λ		λ
λ(n′=2, n=1)	10.204269824	eV	121.50227268	nm	121.5 nm
λ(n′=3, n=1)	12.093949421	eV	102.51754257	nm	102.5 nm
λ(n′=4, n=1)	12.75533728	eV	97.20181814	nm	97.20 nm
λ(n′=3, n=2)	1.8896795971	eV	656.11227245	nm	656.1 nm
λ(n′=4, n=2)	2.5510674561	eV	486.0090907	nm	486.0 nm
λ(n′=4, n=3)	0.66138785898	eV	1874.6064927	nm	1874.6 nm

$\boldsymbol{\Delta E_n = E_2 - E_1}$

$$\boldsymbol{\Delta E_n = \frac{h_p \times C}{\lambda} = \frac{1239.8419637\ eVnm}{\lambda}}$$

Photon energy equation.

$$\boldsymbol{\Delta E_n = \frac{-13.605693099\ eV}{1} \times \left(\frac{(Z)^2}{(n_2)^2} - \frac{(Z)^2}{(n_1)^2}\right)}$$

These are the results of a relationship between energy and wavelength. The observed results show that whenever the energy increases, the wavelength decreases, as shown by this equation in the hydrogen atom.

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7. Conclusions

After the idea of research has been clarified using theoretical and practical scientific evidence to explain the phenomenon of the quantum leap and quantum entanglement from a new perspective, these equations would be used in the following:

1) serving humanity in the advancement of scientific research.
2) using these equations to explore space and quantum world.
3) using these equations in developing communications machines.

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