Power of the electric field of the electron

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Gravitational constant of the electron:

$$G_e = \frac{c^2 x_e}{2\pi . m_e} = 3.81 \times 10^{34} m^{-3} \quad ; \qquad v_{ORB} = c$$

Electric field acceleration:

$$g_e = \frac{G_e m_e}{R_e{}^2} = \frac{2\pi . c^2}{x_e} = 2.3274 \times 10^{29}$$

$$a = \frac{3\pi . c^2}{x_e \alpha} = 4.784 \times 10^{31}$$

Power and force of one electron:

$$P_W = Fc = \frac{q_e{}^2 a^2}{6\pi\varepsilon_0 c^3} \ldots\ldots\ldots\ldots \Leftrightarrow \ldots\ldots\ldots F = \frac{q_e{}^2 a^2}{6\pi\varepsilon_0 c^4} = m_e a$$

$$a = \frac{6\pi\varepsilon_0 m_e c^4}{q_e{}^2} = \frac{3\pi . c^2}{x_e \alpha}$$

F = 43.58N ; $P_W = 1.3065 \times 10^{10} W$

$$\frac{q_e{}^2}{4\pi\varepsilon_0 R^2} = \frac{G_e m_e{}^2}{R^2}$$

Gyromagnetic ratio of the electron:

$$\gamma_e = \frac{x_e}{k_B'}\left(1 + \frac{\alpha}{2\pi}\right)\left(1 - 3\alpha^3\right) = 1.7608596971 \;\; 6 \times 10^{11} m^{-1}$$

$$k_B' = k_B\left(1 - \frac{\pi^3 \alpha^2}{2}\right) \quad ; \qquad \alpha = 1/\sqrt{137^2 + \pi^2}$$

x_e -- Electron Compton wavelength; k_B -- Boltzmann constant (m^2);

α -- Fine structure constant;

The Boltzmann constant has units square meter. The magnetic field or induction is a speed.

Helium ionization energies

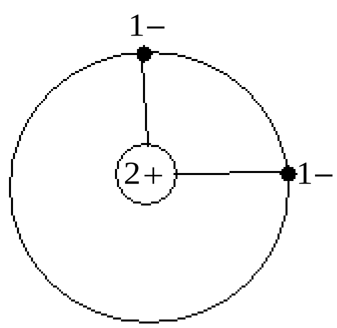
$$\begin{cases} E_T = \dfrac{q_e^{\ 2}}{2\pi\varepsilon_0 R} - \dfrac{1}{2} m_e v^2 = 54.41776 eV \\ v^2 = \dfrac{q_e^{\ 2}}{2\pi\varepsilon_0 R m_e} \end{cases}$$

$$\Leftrightarrow ....R = 3.646 \times 10^{-11} m.....;......R = \frac{n x_e}{2\pi\alpha}........;.......n = 0.5$$

$$v = \frac{\alpha.c}{n}$$

Approximation:

$$\begin{cases} E_T = 24.58387 eV \\ E_P = 2E_K \end{cases} \qquad \Leftrightarrow ....n = 1.107$$



Entropy

Entropy is an area or a capacitance.
The Boltzmann constant is the capacitance of the electron:

$$k_B' \approx \frac{2\varepsilon_0 x_e}{\pi} = 4\varepsilon_0 R_e$$

$Ent = mC_m = nk_B'$; m – Mass; C_m -- Specific heat capacity;

n – Degrees of freedom.

Black hole entropy:

$Ent = \pi.R^2$; R – Radius of the black hole

First ionization energy exact solution:

24.58 x 2 = 49.16 eV

$$\begin{cases} E_T = \dfrac{4q_e^2}{4\pi\varepsilon_0 R} - m_e v^2 - \dfrac{q_e^2}{4\pi\varepsilon_0 D} = 49.16q_e \\ m_e v^2 = \dfrac{q_e^2}{2\pi\varepsilon_0 R} - \dfrac{q_e^2}{8\pi\varepsilon_0 D} \end{cases}$$; D = 2R

$$\frac{q_e}{\pi\varepsilon_0 R}\left(\frac{1}{2} - \frac{1}{16}\right) = 49.16$$

$$R = \frac{7q_e}{16\pi\varepsilon_0 49.16} = 5.126 \times 10^{-11} m = \frac{nx_e}{2\pi\alpha}$$

n = 0.97

Is this a coincidence or not?

$c \approx \dfrac{10}{\alpha^{7/2}}$; $\dfrac{1}{xe} \approx \dfrac{100}{\alpha^{9/2}}$

$$Ae = \frac{cxe}{2\pi} \approx \frac{\alpha}{20\pi}$$

The meter and the second are not pure conventions.
They do not exist by chance.

The explanation of the quantum mechanics

The observables or the solutions

Equation of the observables (not the equation of the problem):

$$x^4 - Ax^3 + Bx^2 - Cx + D = 0$$

Real solutions or the observables: a, b, c, d

Equivalent system:

$$\begin{cases} a+b+c+d = A \\ ab+ac+ad+bc+bd+cd = B \\ abc+abd+acd+bcd = C \\ abcd = D \end{cases}$$

We don’t know the equations of the problem that give those solutions.

How to solve the system with a Basic program:

```
a = RND*10
b = RND*10
c = RND*10
d = RND*10
FOR n = 1 TO 10000
a = A – b – c – d
b = ( B – ac – ad – bc – bd – cd ) / a
c = ( C – abd – acd – bcd ) / a / b
d = D / a / b / c
PRINT a, b, c, d
NEXT n
```

(in a real program we can’t use a and A as different variables)

The electron in the hydrogen atom

Radius and speed:

$$R = \frac{nx_e}{2\pi.\alpha} \qquad ; \qquad v = \frac{c\alpha}{n}$$

Electron magnetic vector potential:

$$A_e = \frac{x_e c}{2\pi} = R.v = 1.158 \times 10^{-4}$$

Variations:

$$\Delta R = \frac{x_e}{2\pi.\alpha}(n_1 - n_2)\ldots\ldots\ldots\ldots;\ldots\ldots\ldots\ldots\Delta v = c\alpha\left(\frac{1}{n_2} - \frac{1}{n_1}\right)$$

$$\Delta R \Delta v = A_e \frac{(n_1 - n_2)^2}{n_1 n_2}$$

Heisenberg equation:

$$\Delta A_1(n, n-\beta) = \Delta R(n, n-\alpha)\Delta v(n-\alpha, n-\beta)$$

$$\Delta A_2(n, n-\beta) = \Delta v(n, n-\alpha)\Delta R(n-\alpha, n-\beta)$$

$$\Delta A_1 / \Delta A_2 = 1/2$$

Wave function:

$$\Psi = \frac{1}{\sqrt{\pi.R_B^{\ 3}}}\exp(-R/R_B) = L^{-3/2}$$

Are there fractional units. The square root of the intensity is fractional also.
The Bohr radius is calculated with classical mechanics.

Intensity:

$$I = H.E = \frac{B}{\mu_0}E = \frac{B^2 c}{\mu_0}$$

$$I = \frac{16\pi^2 {q_m}^2}{\mu_0 c^3} f^4 \quad = L.f^4 \quad ; \qquad L = m/f$$

$$I = \frac{1}{6} m f^3 \quad ; \qquad T = \frac{dI}{df} = \frac{1}{2} m f^2$$

Magnetic field of a particle or a wave:

$$B = \frac{4\pi.q_m}{x^2}$$

Mass current: $I_m = mf = \frac{\Delta m}{\Delta t}$

Corrected Schrodinger equation:

$$i \frac{h}{2\pi} \frac{d\Psi}{dt} = -\frac{h^2}{4\pi^2 m} \frac{d^2\Psi}{dx^2} + V\Psi$$

The wave function is an magnetic vector potential:

$$i \frac{dA}{dt} = -\frac{h}{2\pi.m} \frac{d^2 A}{dx^2} + v^2$$

v^2 – Squared speed = squared magnetic field = electric field = gravitational potential

$$A = A_0 \exp i(kx - wt)$$

$$\frac{dA}{dt} = -iA_0 w \exp i(kx - wt) \ \ ; \qquad \frac{d^2 A}{dx^2} = -k^2 A_0 \exp i(kx - wt)$$

$$\Leftrightarrow .... \ fmx^2 = h$$

$$\frac{h}{2\pi.m} = A_0 = \frac{cx}{2\pi} \qquad \Leftrightarrow .... \ i \frac{dA}{dt} = -A_0 \frac{d^2 A}{dx^2} + v^2$$

$$w = A_0 k^2 .... \Leftrightarrow .... \ f = c/x$$