the general science journal

Unified Absolute Relativity Theory N4

António Saraiva – 2010-04-05
ajps2@hotmail.com

Cooper pair capacitor

We can generate negative mass with a Cooper pair capacitor.

Dielectric width:

$$R = \frac{x_e \alpha^{-2}}{\pi} = 1.45 \times 10^{-8} m$$

R – Cooper pair distance; x_e -- Electron Compton wavelength;
α -- Fine structure constant.

We can store a large amount of negative charge with a Cooper pair capacitor, generating a negative dipole that is a negative mass.

$$m = \frac{Q.k_B}{R}$$

m – Mass; Q – Electric charge; k_B -- Boltzmann constant;

Longitudinal waves and absolute time

For Einstein light must be absolute, like god.
The truth is that transverse light is relative. The Doppler effect and astronomical aberration are proofs that light speed is relative.
Causality is related not with transversal light but with longitudinal light speeds reaching infinite. For longitudinal waves time is absolute.

$$\lim_{c \to \infty} \begin{cases} x = \dfrac{x_0 + vt_0}{\sqrt{1 - v^2/c^2}} \\ t = \dfrac{t_0 + vx_0/c^2}{\sqrt{1 - v^2/c^2}} \end{cases} = \begin{cases} x = x_0 + vt_0 \\ t = t_0 \end{cases}$$

$$\frac{x}{t} = \frac{x_0 + vt_0}{t_0} \qquad \Leftrightarrow \qquad w = w_0 + v$$

It’s impossible to violate causality because it’s not related with light speed.
Time doesn’t exist in nature.

Electron rest energy

It’s possible that some constants have wrong values, with errors greater than we say.

Force inside the electron:

$$F = 2q_e E \; ; \qquad q_e = E\frac{4}{3}\pi R^3 \; ; \qquad R = \frac{x_e}{2\pi}$$

F – Force; q_e -- Electron charge; E – Electric field; x_e -- Compton wavelength.

Energy:

$$E_e = FR \qquad \Leftrightarrow \qquad E_e = \frac{6\pi .q_e^{\;2}}{x_e^{\;2}}$$

Exact value:

$$Ee = \frac{6\pi .qe2}{xe2}\frac{1}{1+\frac{\alpha}{2}} = 0.511MeV$$

α -- Fine structure constant.

Supposing that the mass and wavelength are correct:

New electron charge:

$$q_{eB} = 1.60196042\times 10^{-19} C$$

$$q_e = 1.602176462\times 10^{-19} C$$

Or must exist another correction to the energy.

The signs of the mass

See the Unified Absolute Relativity Theory at:

www.wbabin.net/saraiva/saraiva305.pdf
www.wbabin.net/saraiva/saraiva306.pdf
www.wbabin.net/saraiva/saraiva307.pdf

The mass is a vector that can be positive, negative and imaginary.
The macroscopic mass is imaginary (i).

$$\text{Force} \begin{cases} + \ ..\mathrm{Re}\,pulsion \\ - \ ..Atraction \end{cases}$$

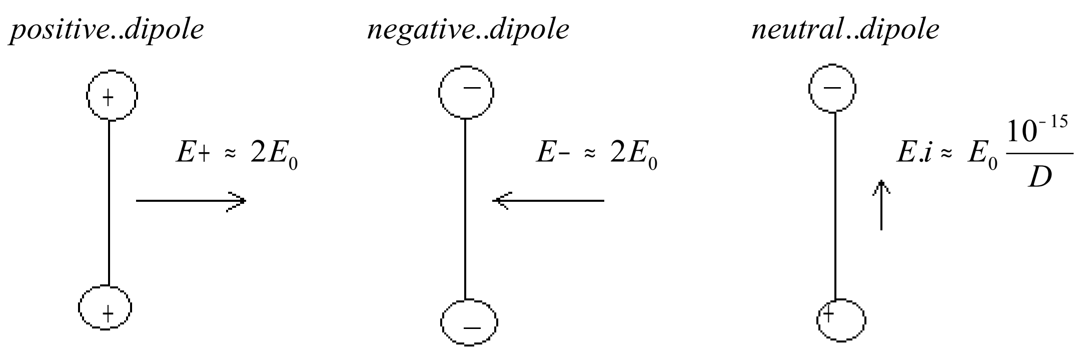
General formula of the mass:

$$m = \frac{\sqrt{q_1}\sqrt{q_2}.k_B}{d}$$

m – Mass; q – Electric charge; k_B -- Boltzmann constant; d – Distance between poles.

q1	q2	m
+	+	+
-	-	-
+	-	i

Electric fields of the dipoles:



The neutral dipole has an electric field much lower than the positive and negative dipoles, what explains the weakness of the gravity.

$E = q / L^3$; $m = E.q / a$; a – Acceleration

The forces:

$$F = G \frac{m_1.m_2}{D^2}$$

m1	m2	F
+	+	+
+	-	-
i	i	-
i	+_	+_i
-	-	+

Imaginary forces are orthogonal.
A ship with positive or negative mass is not attracted by the earth.
A Cooper pair capacitor generates negative mass.

Magnetic charges also generate mass:

$$m = q_m^{\ 2} \ ; \qquad m = \frac{q_e.q_m}{LV}$$

A possible wave equation

Magnetic field:

$$B = B_0 \sin\left(\frac{4\pi^2 S}{x^2}\right) \qquad \text{and} \qquad S = (ct - x)(ct + x) = 1.9 \times 10^{-34} m^2$$

Electric field:

$$E = E_0 \cos\left(\frac{4\pi^2 S}{x^2}\right)$$

$$\frac{dB}{dx} = B_0 \cos\left(\frac{4\pi^2 S}{x^2}\right) 4\pi^2 S \frac{-2}{x^3}$$

$$x^2 = c^2 t^2 - S \qquad \Leftrightarrow$$

$$\Leftrightarrow \qquad B = B_0 \sin\left(\frac{4\pi^2 S}{c^2 t^2 - S}\right)$$

$$\frac{dB}{dt} = B_0 \cos\left(\frac{4\pi^2 S}{x^2}\right) 4\pi^2 S \frac{-2c^2 t}{x^4}$$

$$\Leftrightarrow \qquad \frac{dB}{dt} = \frac{c^2}{w}\frac{dB}{dx} \qquad \text{and} \qquad w = \frac{x}{t}$$

$$\frac{dE}{dt} = \frac{c^2}{w}\frac{dE}{dx} \qquad \text{and} \qquad \frac{c^2}{w} = \text{Group speed}$$

Three kinds of mass

Mass can be generated by three kinds of dipoles: electric dipoles, magnetic dipoles and electromagnetic dipoles.

Electric dipole:

$$m = \frac{\sqrt{q_1 . q_2}\, k_B}{d}$$

m – Mass; q – Electric charge; k_B -- Boltzmann constant; d – Distance between poles.

Magnetic dipole:

$$m = \frac{q_{m1} . q_{m2} . x^3}{2 k_B d}$$

q_m -- Magnetic charge; x -- Compton wavelength.

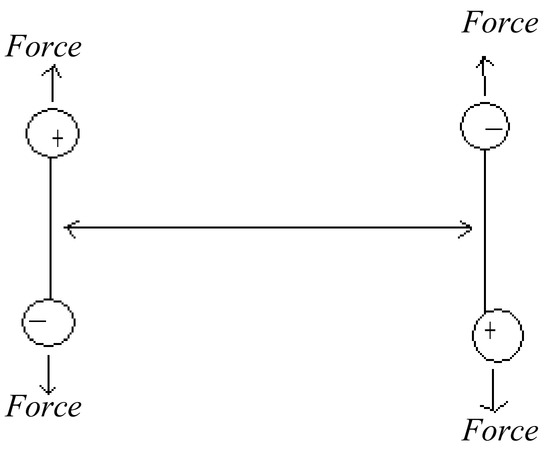
Electromagnetic dipole:

$$m = \frac{2 q_m q_e}{cd} \quad ; \qquad \text{c – Light speed.}$$

There are only two fundamental particles. All other particles are composed of them. The unified force is the Cooper pair force.

Mass defect

When two neutral dipoles interact, it exists a force that stretches the dipoles. The distance of the dipoles increase so the mass becomes smaller.



For the proton in an alfa particle:

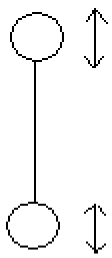
$$\frac{\Delta m_p}{m_p} = 0.724\% \quad \Leftrightarrow \quad d_2 = d(1+\alpha)$$

m_p -- Proton mass; α -- Fine structure constant.

The protons don’t generate dipoles.

Mass oscillation

The magnetic dipoles can oscillate:



What does this means

Energy of the vacuum quantum:

$$E_0 = \frac{\varepsilon_0^2}{\mu_0^2} = 310MeV$$

Energy of the proton:

$$E_P \approx 3E_0$$

Energy of the W boson:

$$E_W = 1.9\frac{E_0}{\alpha}$$

Energy of the Z boson:

$$E_Z = 2.1\frac{E_0}{\alpha}$$

$$\frac{E_W + E_Z}{2} = 2\frac{E_0}{\alpha}$$

Neutral quantum of the vacuum

$$E_0 = 310MeV \quad \text{and} \quad \frac{m_e}{m_\nu} = \frac{\alpha^{-3}}{2\pi}$$

m_e -- Electron mass; m_ν -- Neutrino mass.

$$m_0 = \frac{E_0}{c^2} = 5.526\times 10^{-28}kg \quad \text{and} \quad \frac{m_0}{m_{0N}} = \frac{\alpha^{-3}}{2\pi}$$

$$m_{0N} = 1.35\times 10^{-33}kg$$

$$E_{0N} = 756.864eV$$

General permittivity and permeability

Energy:

$$E = \frac{\varepsilon^2}{\mu^2} \quad \text{and} \quad E = \frac{h.c^2 f}{w^2} = h.c^2 f\varepsilon\mu \ ; \quad w = \frac{1}{\sqrt{\varepsilon\mu}}$$

For charged particles:

$$f = c\frac{-hc + \sqrt{h^2c^2 + 4E^2S}}{2ES}$$

$$\Leftrightarrow \qquad \varepsilon^2 = \frac{2SE^{5/2}}{hc^3\left(-hc + \sqrt{h^2c^2 + 4E^2S}\right)}$$

For $4E^2S >> h^2c^2$

$$\varepsilon^2 = \frac{\sqrt{S}E^{3/2}}{hc^3} \qquad \text{and} \qquad E = mc^2$$

Permittivity of the mass quantum:

$$\varepsilon^3 = \frac{1}{G} \qquad \Leftrightarrow \qquad \varepsilon = 2.466\times 10^3 m..(L)$$

$$\Leftrightarrow \qquad m = 4.4\times 10^{-7} kg \quad ; \quad \text{Planck mass} = 2.2\times 10^{-8} kg$$

$$\mu^2 = \frac{\sqrt{SE}}{hc^3} \qquad \Leftrightarrow \qquad \mu = 1.24\times 10^{-2}..(L^{-1}V^{-2})$$

E – Energy; ε -- Permittivity; μ -- Permeability; h – Planck constant; c – Light speed; f -- Frequency; w – Variable light speed; $S = 1.9\times 10^{-34} m^2$;
G – Gravitational constant.

Correction of the mass formula or electric dipole moment

$$m = \frac{q.k_B}{x}\frac{2\pi\sqrt{2}}{2\pi\sqrt{2} + \alpha} \quad ; \qquad k_B = 1.38064302\times 10^{-23} m^2 ; \qquad \frac{\Delta k_B}{k_B} = 5.27\times 10^{-6}$$

The entropy is an area as like in black holes.
m – Mass; q – Electric charge; k_B -- Boltzmann constant; x – Compton wavelength or distance; α -- Fine structure constant.

$$\frac{k_B}{x_e^2} = \frac{1}{2\sqrt{2\pi\alpha}} \quad ; \qquad x_e \text{ -- Electron Compton wavelength.}$$

Electron's electric field:

$$E = \frac{\pi.c^2 me}{qx_e} = \frac{6\pi^2 q}{x_e^3} = \frac{\pi.c^2 k_B}{x_e^2} = 6.62\times 10^{17} = 2.34\pi.c^2$$

m_e -- Electron mass.

Electron energy relations:

$$E_e = \frac{E_0 \alpha}{2\pi\sqrt{2}} \qquad \text{and} \qquad E_0 = \frac{\varepsilon_0^2}{\mu_0^2} = 310 MeV$$

E_e -- Electron rest energy

$$13.6 eV = \frac{E_0 \alpha^3}{2\pi\sqrt{2}} \; ; \qquad \frac{E_e}{13.6} = \frac{2}{\alpha^2}$$

Why renormalization works

Renormalization works because infinite is equal to zero.

$$e^{ix} = \cos x + i \sin x$$

For $x = \pi$:

$$e^{i\pi} = -1$$

$$\log e^{i\pi} = \log(-1) \qquad \Leftrightarrow \qquad \log(-1) = i\pi$$

Lets prove that infinite is equal to zero:

$$0 = +\infty = -\infty$$

$$\log 0 = \log(+\infty)$$

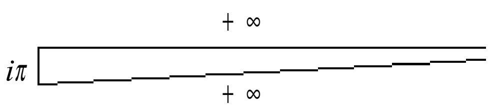
$$-\infty = +\infty$$

$$\log(-\infty) = \log(+\infty)$$

$$\log(-1) + \log(+\infty) = +\infty$$

$$i\pi + (+\infty) = +\infty$$

$$+\infty = +\infty$$



$$+\infty = \sqrt{(i\pi)^2 + (+\infty)^2}$$

$$+\infty = \sqrt{-\pi^2 + (+\infty)} = +\infty$$

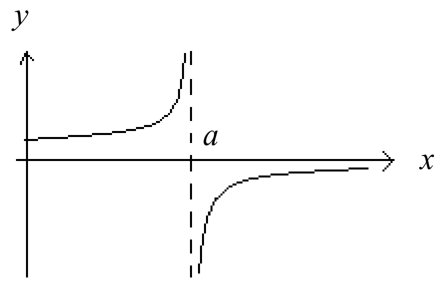
So:

$$0 = +\infty = -\infty$$

Mathematical and natural equations

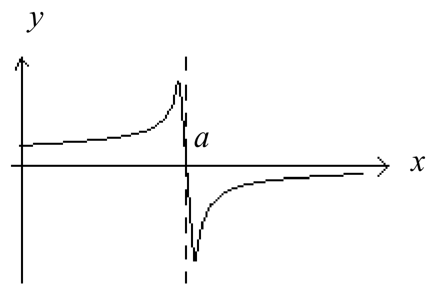
Mathematical equation:

$$y = \frac{1}{a - x}$$



Natural equation:

$$y = \frac{a - x}{(a - x)^2 + \alpha}$$



$$x_{MX} = a \pm \sqrt{\alpha} \quad ; \qquad y_{MX} = \pm \frac{1}{2\sqrt{\alpha}}$$

This natural equation happens in several real problems as the double sonic boom and the slow light propagation.

Group speed in UART

Phase speed:

$$w = \sqrt{c^2 - Sf^2} \quad ; \qquad w = \frac{cx}{\sqrt{S + x^2}}$$

Group speed:

$$V = \frac{d\omega}{dk}$$

$$c^2t^2 - x^2 = S \qquad \Leftrightarrow \qquad \omega = \frac{2\pi .kc}{\sqrt{4\pi^2 + Sk^2}}$$

$$V = \frac{cx^3}{(S + x^2)^{3/2}} \quad ; \qquad V = \frac{(c^2 - Sf^2)^{3/2}}{c^2}$$

$$V = \frac{w^3}{c^2}$$

w -- Phase speed; c – Light speed; $S = 1.9\times 10^{-34} m^2$; f -- Frequency;
x -- Wavelength; V -- Group speed; $\omega = 2\pi f$ -- Angular speed;
$k = 2\pi / x$; t – Period.

Sun's corona temperature problem

Is not the corona that has a higher temperature than normal.
Is the surface that has a lower temperature than normal. The magnetic field at the surface absorbs a lot of energy.
The normal sun's 22 years cycle has a variation of the global temperature on earth of one degree.

Total energy of the sun:

$$E = 3.845\times 10^{26} J \quad ; \qquad D_{ES} = 1.5\times 10^{11} m$$

The temperature is an energy surface density as surface tension.
Temperature at earth:

$$T_E = \frac{E}{4\pi D_{ES}^{\;2}} = 1360K = 1087^{\circ}C$$

Measured value:

$$T_E = 1150^{\circ}C$$

Temperature at sun's surface:

$$T_S = \frac{E}{4\pi {R_S}^2} = 6.2 \times 10^7 K = 6.2 \times 10^7 {}^oC \quad ; \qquad R_S = 7 \times 10^8 m$$

This is the maximum temperature at the corona.
Real temperature at the surface:

$$T_S = 5500^o C = 5778K$$

Sun’s magnetic field:

$$B = 4 \times 10^{-4} T \qquad \text{and} \qquad \Delta T = 6.2 \times 10^7 K$$

$$\frac{\Delta E}{V} = \frac{B^2}{2\mu_0} = 6.4 \times 10^{-2} J/m^3$$

$$\Delta T = \frac{\Delta E}{A} \qquad \Leftrightarrow$$

$$\Delta T = \frac{B^2 L}{2\mu_0}$$

$$L = R_S = 7 \times 10^8 m$$

$$\Delta T = 4.46 \times 10^7 K$$

Is the magnetic field that lowers the temperature at the surface.

The usual magnetic moment is only a momentum

Magnetic dipole moment problem

The magnetic dipole moment of the electron is only a momentum. SI units.

Particle	MDM
Electron	$9.284764 \times 10^{-24} J/T$
Proton	$1.4106067 \times 10^{-26}$
Neutron	9.66236×10^{-27}
Muon	$4.4904478 \times 10^{-26}$

True magnetic dipole moment of the electron:

$$\mu_e = q_m x_e = \frac{hx_e}{2q_e} = 5.0165 \times 10^{-27} \text{ Weber.meter}$$

qm – Magnetic charge; xe – Compton wavelength; h – Planck constant; qe – Electric charge.

Momentum of the electron in hydrogen atom:

$$p_e = \frac{m_e c}{137.036}\left(1 + \frac{\varepsilon_0}{x_e}\right)\left(1 + \frac{m_e c^2 \mu_0^2}{\varepsilon_0^2}\right) = 9.28 \times 10^{-24}$$

Energy of the quantum of the vacuum:

$$E_0 = \frac{\varepsilon_0^2}{\mu_0^2} = 310 MeV$$

Momentum of the electron:

$$p_e = q_e A_e = I.Area = 9.27485 \times 10^{-24}$$

qe – Electric charge; Ae – Magnetic potential; I – Electric current; c – Light speed

$$A_e = \frac{cx_e}{4\pi}$$

$$q_e \frac{cx_e}{4\pi} = I.Area = q_e f_e \pi .R^2 \qquad \text{and} \qquad R = \frac{x_e}{2\pi}$$

f_e -- Electron Compton frequency

$$q_e \frac{cx_e}{4\pi} = q_e f_e \frac{x_e^2}{4\pi} \qquad \Leftrightarrow \qquad x_e = \frac{c}{f_e}$$

So, an electric current times an area is a momentum, not a magnetic dipole moment.~
This is a proof of our theory of units unification.

True magnetic dipole moment of the particles:
The magnetic dipole moment is a magnetic charge times a distance.

$$\mu = q_m x \ ; \qquad q_m = 2.0678 \times 10^{-15} Weber$$

Proton:

$$\mu_P = q_m x_P = 2.73 \times 10^{-30}$$

Neutron:

$$\mu_N = q_m x_N = 2.86 \times 10^{-32}$$

Muon: $\mu_\mu = 2.43 \times 10^{-29}$

Units unification in S. I. system

Everything is made of speed and distance. Time doesn't exist in nature. There are only 3 distance dimensions.

Definition of mass

Wavelength of the electron: $x_e = 2.426 \times 10^{-12} m$
Light speed = c

Particular electron relations:

Electron charge -- $q_e \approx x_e^3 c^2$

Planck's constant -- $h \approx x_e^5 c^3$

Magnetic flux quantum -- $\Phi_0 \approx x_e^2 c$

Inverse permeability -- $\frac{1}{\mu_0} \approx x_e c^2$

Permittivity -- $\varepsilon_0 \approx x_e$

Electron energy -- $E \approx x_e^4 c^4$

Electron mass -- $m \approx x_e^4 c^2$

Boltzmann constant -- $k_B \approx x_e^2$

Using: distance = L and speed = V

So, the mass is equal: $M = L^4V^2$

List of units

Mass -- $M = L^4V^2$

Time -- $T = LV^{-1}$

Electric charge -- $q = L^3V^2$

Electric dipole moment -- $d = qL = M = L^4V^2$

The electric dipole moment is a mass.

Magnetic charge -- $q_m = \Phi_0 = \frac{h}{2q} = L^2V$

Planck's constant -- $h = L^5V^3$

Magnetic flux quantum -- $\Phi_0 = q_m = \sqrt{M}$

Inverse permeability = Density = Electric potential = $\frac{1}{\mu} = LV^2$

Magnetic current -- $I_m = LV^2$

Magnetic field -- $B = V$ (Magnetic flux density)

Electric field -- $E = V^2$

Electric current = Magnetic voltage -- $I = L^2V^3$

Permittivity -- $\varepsilon = L$

Force -- $F = L^3V^4$

Magnetic potential = Inverse resistance -- $A = \frac{1}{\Omega} = LV$

= Circulation

Gravitational constant -- $G = L^{-3}$

Pressure -- LV^4

Farad -- L^2

Henry -- V^{-2}

Energy -- $E = L^4V^4$

Moment -- L^4V^3

Watt -- L^3V^5

Magnetic field strength -- $H = LV^3$

Electric flux -- $L^2V^2 = \sqrt{Energy}$

Acceleration = Magnetic current density -- $a = J_M = L^{-1}V^2$

Energy -- $E = \left(\frac{\varepsilon}{\mu}\right)^2$

Electric current density -- $J_E = V^3$

Electric displacement field -- $D = \frac{1}{\mu} = LV^2$

Magnetic current -- $I_m = LV^2$

$$x_G = \frac{1}{\sqrt[3]{G}}$$

Boltzmann constant -- $k_B = L^2$

The temperature is an energy surface density:

$$T_k = \frac{E}{L^2} = L^2V^4$$

Magnetic dipole moment = L^3V = Weber.meter

Units table

	L-1	L0	L	L2	L3	L4	L5
V-1	Thermal Resistance; Electric Resistance		Time; Inverse Frequency				
V0			Distance; Permittivity	Surface; Capacitance; Boltzmann Constant	Volume; Inverse Gravitational Constant		
V	Frequency; Vorticity	Speed; Magnetic Field	Magnetic Potential; Conductance; Circulation	Magnetic Charge; Magnetic Flux	True Magnetic Dipole Moment		
V2	Acceleration; Current Density	Electric Field; Inverse Inductance	Magnetic Current; Electric Voltage; Inverse Permeability	Electric Flux; Q.M. Probability	Electric Charge	Mass; Electric Dipole Moment	
V3	Sound Resistance	Electric Current Density; Potential Vorticity	Magnetic Field Strength	Magnetic Voltage; Electric Current		Momentum; False Magnetic Moment	Planck Constant; Angular Momentum
V4			Pressure; Energy Density	Temperature; Surface Tension	Force	Energy; Torque	
V5	Luminance	Spectral Irradiance	Intensity; Irradiance		Power		

The Stefan-Boltzmann law is wrong

The sun's cycle of 22 years generates a temperature variation on earth of one degree.

There's no global warming. Now the sun's cycle is at a minimum and temperatures are lower.

Wrong law:

$$\frac{E}{A.t} = \sigma T^4 \qquad \text{and} \qquad \sigma = 5.67 \times 10^{-8}$$

Our law:

$$\frac{E}{A} = T$$

E – Energy; A – Area; t – Time; T – Temperature.

Measured temperature in earth orbit:

$$T = 1150^{\circ}C \;; \qquad E = 1360J$$

According to Stefan law:

$$T = 120°C$$

According to our law:

$$T = 1087°C$$

The temperature at the sun's surface is lower than normal due to the magnetic field.

Why the mistake for earth:

$$t = 1s$$

$$\begin{cases} \frac{E}{A} = T \\ \frac{E}{A} = \sigma T^4 \end{cases} \Leftrightarrow \quad T = 260K$$

The Stefan-Boltzmann law is wrong II

Stefan-Boltzmann law (SI units):

$$\frac{E}{At} = \sigma T^4 \quad \text{and} \quad \sigma = 5.67 \times 10^{-8}$$

$$\Leftrightarrow \quad E \equiv T^4$$

Rayleigh-Jeans law (valid for low frequencies):

$$\frac{E}{A} = \frac{2f^2kT}{c^2} = \frac{2kT}{\lambda^2}$$

or

$$\frac{E}{Vt} = \frac{2ckT}{\lambda^4}$$

$$\Leftrightarrow \quad E \equiv T$$

Another relation:

$$E = PV = nRT$$

or

$$E = kT$$

$$\Leftrightarrow \quad E \equiv T$$

Our exact formula, the temperature is an energy surface density:

$$T = \frac{E}{A} \qquad \Leftrightarrow \qquad E \equiv T$$

E – Energy; A – Area; T – Temperature; f – Frequency; k – Boltzmann constant;
c – Light speed; λ -- Wavelength; V – Volume; t – Time; P – Pressure.

Sonoluminescence

$$T = \frac{E}{A} \;; \qquad T_0 = 300K$$

Bubble radius:

$$R_{MAX} = 50\mu\, m\,; \quad R_{MIN} = 0.5\mu\, m\,; \quad R_{MED} = 5\mu\, m$$

$$\Delta T = \frac{E}{A^2}\Delta A$$

$$E = 4\pi R_{MX}{}^2 \times 300$$

$$A = 4\pi R_{MED}{}^2$$

$$\Delta A = 4\pi\,(R_{MX}{}^2 - R_{MIN}{}^2)$$

$$\Leftrightarrow \qquad \Delta T = 3\times 10^6 K$$

Nuclear fusion temperature:

$$T = 8\times 10^6 K$$

Electron-Neutrino bound state

Accelerating fields:

$$g_e = \frac{Sf_e{}^3}{c} \;; \qquad g_\nu = \frac{Sf_\nu{}^3}{w_\nu}$$

$$f_e = 1.236\times 10^{20} Hz\,; \quad f_\nu = 1.574\times 10^{36} Hz\,; \quad w_\nu = 2.18\times 10^{19} m/s$$

$$g_e = 1.205\times 10^{18}; \quad g_\nu = 3.423\times 10^{55}$$

$$g = \sqrt{g_e g_\nu} = 6.42 \times 10^{36}$$

Force electron-neutrino:

$$F = m_\nu g = 14.13N \quad ; \qquad m_\nu = 2.2 \times 10^{-36} kg$$

$$x = \sqrt{S} \quad ; \qquad R = \frac{N\sqrt{S}}{2\pi} \quad ; \qquad S = 1.9 \times 10^{-34} m^2$$

$$R^2 = \frac{q^2}{8\pi \varepsilon_0 F} \qquad \Leftrightarrow \qquad R = 2.86 \times 10^{-15} m$$

$$N = 3\pi / \alpha$$

Energy:

$$E = FR = 0.252 MeV = E_e / 2$$

True mass of the proton

The usual mass of the proton is wrong, because the energy momentum relation formula is also wrong.

Wrong formula:

$$E = \frac{E_0}{\sqrt{1 - v^2 / c^2}}$$

Correct formula:

$$E = E_0 \sqrt{1 - v^2 / c^2}$$

Wrong energy-momentum relation:

$$E^2 = E_0^{\ 2} + p^2 c^2$$

Correct relation:

$$E^2 = E_0^{\ 2} + 3v^2 p^2 - p^2 c^2$$

Derivation:

$$E^2 = E_0{}^2(1 - v^2/c^2) = E_0{}^2 - E_0{}^2 v^2/c^2$$

$$E_0{}^2 = m_0{}^2 c^4 \ ; \qquad m_0{}^2 = m^2(1 - v^2/c^2)^3 = m^2(1 - 3v^2/c^2)$$

$$\Leftrightarrow \qquad E^2 = E_0{}^2 + 3v^2 p^2 - p^2 c^2$$

When both formulas give the same result:

$$p^2 c^2 = 3v^2 p^2 - p^2 c^2 \qquad \Leftrightarrow \qquad v = \sqrt{2/3}c$$

The mass of the W boson is correct because: $w_W \approx \sqrt{2/3}c$

For the proton the correct mass is greater:

$$m_{02} \approx \frac{m_0 c}{\sqrt{c^2 - 2v^2}}$$

Mass of the hydrogen:

$$m_H = 1.00794u \qquad \text{and} \qquad u = 1.660538782 \times 10^{-27} kg$$

Hydrogen deuterium abundance: the correct abundance is not 150ppm but 15ppm.

$$2.0135532127 \times 1.5 \times 10^{-5} + x(1 - 1.5 \times 10^{-5}) = 1.00794$$

Exact mass of the hydrogen:

$$m_H = 1.007925$$

Subtracting the electron we get the correct mass of the proton:

$$m_P = 1.6728 \times 10^{-27} kg \qquad \text{Not } 1.6726 \times 10^{-27} kg$$

Note that the mass spectrometer don't measure average masses but the true mass of each isotope.

Units variation with speed

Length, time and speed:

$$x = x_0\sqrt{1 - v^2/c^2}$$

$$t = t_0/\sqrt{1 - v^2/c^2} \ ; \qquad f = f_0\sqrt{1 - v^2/c^2}$$

$$w = w_0(1 - v^2/c^2) \; ; \qquad v = v_0(1 - v^2/c^2) \quad \Leftrightarrow \quad v = c\frac{-c + \sqrt{c^2 + 4v_0^{\,2}}}{2v_0}$$

Mass, acceleration and force:

$$m = m_0/(1 - v^2/c^2)^{3/2} \; ; \qquad a = a_0(1 - v^2/c^2)^{3/2}$$

$$F = F_0$$

Electric and magnetic charge:

$$q = q_0/(1 - v^2/c^2) \; ; \qquad q_m = q_{m0}(1 - v^2/c^2)$$

Angular momentum and momentum:

$$h = h_0 \; ; \qquad p = p_0/\sqrt{1 - v^2/c^2}$$

Energy:

$$E_Y = E_{Y0}\sqrt{1 - v^2/c^2}$$

Permittivity and permeability:

$$\varepsilon = \varepsilon_0/(1 - v^2/c^2)^{7/8} \; ; \qquad \mu = \mu_0/(1 - v^2/c^2)^{9/8}$$

Temperature:

$$T = T_0/\sqrt{1 - v^2/c^2}$$

Magnetic potential, magnetic field and electric field:

$$A = A_0(1 - v^2/c^2)^{3/2}$$

$$B = B_0 \; ; \qquad E = E_0(1 - v^2/c^2)$$

Earth flyby anomaly

The flyby anomaly is a relativistic correction of our theory:

Angle correction:

$$\delta = \frac{3GM\varepsilon \sin\theta}{c^2 a(1 - \varepsilon^2)} \; ; \qquad \theta = \pi/2 \; ; \qquad \Delta v = \delta . R$$

Speed variation:

$$\Delta v = \frac{3GM\varepsilon R}{c^2 a(1-\varepsilon^2)}$$

We don't know the values of R, so we do R/a = 1

	ε	$\Delta v(mm/s)$	our Δv	a (km)
Galileo	2.47	3.92	6.47	4977.0
Near	1.81	13.46	10.6	8493.3

$M = 6\times 10^{24} kg$; a – Semi major axis; c – Light speed.
G – Gravitational constant; R – Local radius of the orbit; ε -- Eccentricity.

Speed of the forces

Light speed:

$$w = \frac{x}{t} = \sqrt{c^2 - Sf^2} \quad ; \qquad c^2t^2 - x^2 = S = 1.9\times 10^{-34} m^2$$

Speed of the forces:

$$V = \frac{\Delta x}{\Delta t} \qquad \text{and} \qquad x = \sqrt{c^2t^2 - S}$$

$$\Leftrightarrow \qquad V = \frac{c^2 t}{x} = \frac{c^2}{w}$$

For the electron:

$$V_e = \sqrt{c^2 + Sf_e^{\,2}} \qquad \text{and} \qquad f_e = 1.236\times 10^{20} Hz$$

For the universe:

$$w^2 = \frac{hc}{\sqrt{S}M} \qquad \text{and} \qquad M \approx 1\times 10^{53} kg$$

$$w = 3.8\times 10^{-31} m/s \qquad \Leftrightarrow \qquad V = 2.4\times 10^{47} m/s$$

Delay to the centre of the universe:

$$t = \frac{R_U}{V} = 5.48\times 10^{-22} s$$

For the earth:

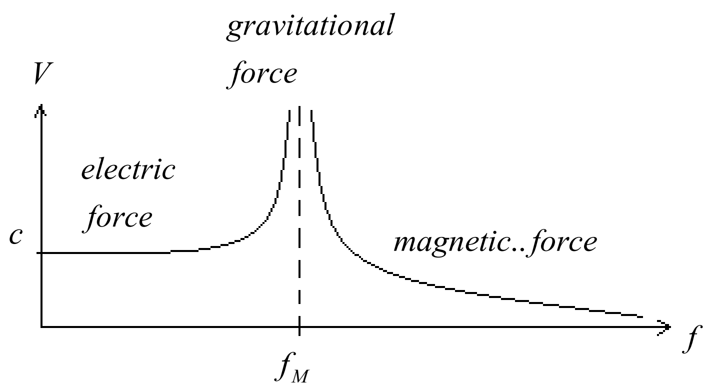
$$V = 1.84 \times 10^{33} m/s\,; \qquad t = 3.5 \times 10^{-27} s$$

Speed of the gravity with mass:

$$V = 7.5 \times 10^{20} \sqrt{M}$$

There is never aberration of the forces because both bodies have the same delay, relative to an average distance between them. The interactions happen at half way of the bodies.

If not the electrons orbits should be unstable.



All forces are electric.
f – Frequency.

Black holes

Acceleration field:

$$g = \frac{Sf^3}{w}\,; \qquad f = \frac{cf_0\sqrt{c^2 - v^2}}{c^2 + vw_0}\,; \qquad w = c^2\,\frac{w_0 + v}{c^2 + vw_0}$$

$$\Leftrightarrow \qquad g = \frac{Scf_0^{\,3}(c^2 - v^2)^{3/2}}{(c^2 + vw_0)^2(w_0 + v)}$$

The force at the surface of a black hole is zero.
Then it is imaginary, oriented to the poles.
The acceleration at the centre of a black hole is also zero.

Matter-antimatter asymmetry

There's no asymmetry.
The mass is the electric dipole moment, so it is a vector.
There are four kinds of mass:

Negative, positive and imaginary: positive and negative.

The total mass of the universe is equal to zero, as the charge.

The sixth sense

We have a stereoscopic sensor of acceleration or force and we can detect the variations of the moon's gravity.

Rotating Superconductor B

A rotating superconductor generates a gravitational field because the positive charges rotate and the electrons are at rest.
Gravitomagnetism doesn't exist.

The usual magnetic dipole moment is only a momentum:

$$p = mv = I\pi .R^2$$

m – mass; v – speed; p – momentum; I – Electric current; R – Radius of rotation.

$$m = \frac{I\pi .R}{\omega} \quad \Leftrightarrow \quad m = \frac{q\pi .R}{t.2\pi .f}$$

$$\Leftrightarrow \quad m = \frac{qR}{2}$$

ω -- angular speed; q – electric charge; t – time; f – frequency.

$$m = \frac{F}{g} \quad \Leftrightarrow \quad g = \frac{2FR}{qR^2} \quad \text{and} \quad FR = \frac{1}{2}mv^2$$

$$g = \frac{mv^2}{qR^2}$$

F – force; g – Acceleration; E – energy.

$$v = \omega R \quad \Leftrightarrow \quad g = \frac{m_P}{q}\omega^2$$

m_P -- mass of the proton.

Exact formula for acceleration:

$$g = \frac{m_P}{4q}\omega^2$$

Experimental data:

$$g = 10^{-3} m/s^2 \ ; \qquad f = 6500c/\min = 1.1\times 10^2 Hz$$

$$\omega = 2\pi f = 6.8\times 10^2 Hz$$

Our formula:

$$g = 1.2\times 10^{-3} m/s^2$$

Some formulas

Magnetocaloric effect:

$$T_B = \alpha \frac{B^2 L}{2\mu_0}$$

T_B -- Temperature; α -- coefficient; B – magnetic field; L – length: perimeter
μ_0 -- permeability.

Electrocaloric effect:

$$T_E = \beta \frac{\varepsilon_0 E^2 L}{2}$$

T_E -- temperature; β -- coefficient; ε_0 -- permittivity; E – electric field.

At sun's surface $\alpha = 1$

Our inner ear balance system can detect the position of the moon.

Gravitational wave detection

The usual detectors depend on the length contraction and we don't know if macroscopic lengths suffer any contraction.

A much more efficient detector are accelerometers.

The gravitational waves are waves of acceleration or force.

Spacetime doesn't exist.

Usual method:

$$L = L_0\sqrt{1 - v^2/c^2} \qquad \text{and} \qquad v^2 = \frac{GM}{D}$$

$$\Leftrightarrow \qquad \Delta L = \frac{L_0 GM}{2c^2 D^2}\Delta D$$

For $L_0 = 10km$; M = 1kg; D = 1m; $\Delta D = 0.1m$

$$\Delta L = 3.7\times 10^{-25} m$$

Accelerometer method:

$$\Delta g = \frac{2GM}{D^3}\Delta D$$

$$\Delta g = 1.3\times 10^{-11} m/s^2$$

With accelerometers we can produce and detect gravitational waves in a lab.

Speed of the waves:

$$V = 7.5\times 10^{20}\sqrt{m} \qquad \text{with} \qquad m = 2\times 10^{30} kg$$

For f = 1Hz $\Leftrightarrow$ $\lambda = 10^{36} m$

The Pioneer Anomaly B

The Pioneer anomaly is a systematic error due to the wrong Stefan-Boltzmann law.

Total possible error:

$$\Delta g = (8\pm 3)\times 10^{-10} m/s^2$$

Observed acceleration:

$$\Delta g = 8.74\times 10^{-10} m/s^2$$

Value of the wrong acceleration due to sun's radiation:

$$\Delta g = 5\times 10^{-10} m/s^2$$

Wrong and correct irradiance or intensity:

$$I_{WR} = \sigma T^4 \quad ; \qquad I_{OK} = \frac{T}{t}$$

Pressure:

$$P = \frac{I}{c}$$

Acceleration:

$$F = PA \qquad \text{and} \qquad A = 6m^2$$

$$\Delta g = 6\frac{P_{WR} - P_{OK}}{259}$$

T – temperature; t – time; c – light speed; F – force

The correct pressure is lower than the wrong pressure, so it appears an acceleration towards the sun.

Correct calculations:

$$D = 45AU = 6.75 \times 10^{12} m$$

$$I = \frac{3.845 \times 10^{26}}{4\pi D^2} = 0.67W/m^2$$

T = I = 0.67K

P = I/c and F = 6P

$$g = \frac{F}{259} = 5.2 \times 10^{-11} m/s^2$$

$$5.2 \times 10^{-11} << 5 \times 10^{-10}$$

Wrong calculations and temperature:

$$5 \times 10^{-10} = \frac{F}{259}$$

$$P = F/6 = 2.16 \times 10^{-8}$$

$$I = Pc = 6.47W/m^2$$

$$I = \sigma T^4 \qquad \Leftrightarrow \qquad T = 103.4K$$

This is the wrong temperature for a distance:

$$\frac{3.845\times 10^{26}}{4\pi .D^2} = \sigma T^4 \quad \Leftrightarrow \quad D = 14.5AU$$

Proton Cooper pair

True mass of the proton:

$$m = 1.6728\times 10^{-27} kg \quad ; \qquad E = mc^2 = 938.3721 MeV$$

Proton Compton frequency:

$$f = \frac{-h + \sqrt{h^2 + 4m^2c^2S}}{2mS} = 2.2687\times 10^{23} Hz$$

Proton wave speed:

$$w = \sqrt{c^2 - Sf^2} = 2.99776\times 10^8 m/s$$

Proton Compton wavelength:

$$x = \frac{w}{f} = 1.32\times 10^{-15} m$$

Proton Cooper pair distance:

$$R = \frac{N^2 x}{\pi}$$

Cooper pair force:

$$F = mg \qquad \text{and} \qquad g = \frac{Sf^3}{w} = 7.4537\times 10^{27} m/s^2$$

$$F = 12.47N = \frac{q^2}{4\pi\varepsilon_0 R^2} \quad \Leftrightarrow \quad N = 3.2$$

$$\Leftrightarrow \quad R = 4.3\times 10^{-15} m$$

The deuterium is a Cooper pair between a proton and a neutron.

Theoretical electric dipole moment of the Cooper pair:

$$\Delta m = \frac{qk_B}{R} = 5.142\times 10^{-28} kg$$

But we don't observe this extra mass so, the protons and neutrons don't generate mass.
Only electrons, positrons and neutrinos electric dipole moments generate mass.
We must have electrons and neutrinos inside the proton and the neutron.

Degeneracy Pressures

Approximation for the electron:

$$P_e = x_e c^4 = 2 \times 10^{22}\,Pa$$

x_e -- Electron Compton wavelength; c – Light speed.

(Electron temperature: $T_e = x_e{}^2 c^4 = 4.75 \times 10^{10}\,K$)

Electron degeneracy pressure, exact formula:

$$P = E/V \qquad \Leftrightarrow \qquad P_e = \frac{6\pi^2 m_e c^2}{x_e{}^3} = 3.4 \times 10^{23}\,Pa$$

m_e -- Electron mass.

Neutron degeneracy pressure:

$$P_N = \frac{6\pi^2 m_N c^2}{x_P{}^3} = 3.9 \times 10^{36}\,Pa$$

m_N -- Neutron mass; x_P -- Proton Compton wavelength.

The neutron is a false neutral particle.

Planck degeneracy pressure:

$$P_{PL} = \frac{6\pi^2 hc}{x_{PL}{}^4} = 7.3 \times 10^{106}\,Pa$$

Gravitational pressure at the center of a star or a planet:

$$P = \frac{GM^2}{4\pi R^4} \; ; \qquad \text{For earth:} \quad P_E = 1.14 \times 10^{11}\,Pa$$

For the sun: $P_S = 8.84 \times 10^{13}\,Pa$ ($1Atm = 10^5\,Pa$)

Gravitational pressure at the center of a black hole:

$$P = \frac{GM^2}{4\pi R^4} \quad \text{and} \quad R = \frac{GM}{c^2}$$

$$\Leftrightarrow \quad P = \frac{c^8}{4\pi G^3 M^2}$$

Super massive black hole:

$$M = 8.2 \times 10^{36} kg \quad \Leftrightarrow \quad P = 2.6 \times 10^{23} Pa$$

Mass for the neutron pressure:

$$P_N = 3.9 \times 10^{36} = \frac{c^8}{4\pi G^3 M^2} \quad \Leftrightarrow \quad M = 2.12 \times 10^{30} kg$$

The local universe is a black hole and we live at its surface:

Universe mass: $M_U = 1 \times 10^{53} kg \quad \Leftrightarrow \quad P = 1.75 \times 10^{-9} Pa$

Vacuum pressure:

$$P_V = \frac{M_U c^2}{\frac{4}{3}\pi R_U{}^3} = 9.77 \times 10^{-10} Pa$$

There are no singularities in black holes.
General relativity equations are wrong.

Natural equation for black holes:

$$P = \frac{c^8 M^2}{4\pi . G^3 (M^4 + 4.27 \times 10^{13})}$$

Quantum LC circuit

Quantum LC circuits have two Schrodinger equations that have wrong units:

$$\frac{ih}{2\pi}\frac{d\varphi}{dt} = -\frac{h^2}{8\pi^2 L}\frac{d^2\varphi}{dx^2} + \frac{Q^2\varphi}{2C}$$

$$\frac{ih}{2\pi}\frac{d\varphi}{dt} = -\frac{h^2}{8\pi^2 C}\frac{d^2\varphi}{dx^2} + \frac{\phi^2\varphi}{2L}$$

Those formulas are wrong.

Correct formulas:

$$\frac{ih}{2\pi}\frac{d\varphi}{dt} = -\left(\frac{h^2}{8\pi^2 L}\frac{d^2\varphi}{dx^2}\right)^{1/2} + \frac{Q^2\varphi}{2C}$$

$$\frac{ih}{2\pi}\frac{d\varphi}{dt} = -\left(\frac{h^2}{8\pi^2 C}\frac{d^2\varphi}{dx^2}\right)^{2/3} + \frac{\phi^2\varphi}{2L}$$

Entropy

The entropy is an area or a surface like in black holes.
It is also an electric capacitance.

Entropy or capacitance of a sphere:

$$S = 4\pi\,\varepsilon_0 R$$

For the electron: $R = \frac{x_e}{2\pi}$

$2\varepsilon_0 x_e \approx k_B$; k_B -- Boltzmann constant; ε_0 -- Vacuum permittivity.

Ice melting entropy per particle:

$$\Delta S = 3.7\times 10^{-23} m^2 = 2.7 k_B$$

Entropy is quantized, fundamental relation:

$$c^2 t^2 - x^2 = S = 1.9\times 10^{-34} m^2$$

Flying saucers accelerations

Magnetic field: $B = 10^6 T$

$$B = \frac{\mu_0 Il}{4\pi D^2} \;; \qquad \frac{dB}{dD} = \frac{B}{2\pi D}$$

Acceleration:

$$g = B\frac{dB}{dD} = \frac{B^2}{2\pi D} = 3.2\times 10^{10}\, m/s^2$$

Human beings inside a flying saucer don't feel accelerations at this value, because the field transmits the force to each atom of the body.

Super Dense Black Holes

Black holes can have any density. The idea that black holes must be very dense is wrong.
Black holes can exist without any gravitational collapse or degenerate matter.

Pressure at the centre of a black hole:

$$\frac{GM^2}{4\pi R^4} > P \qquad \Leftrightarrow \qquad \frac{M}{R^2} > \sqrt{\frac{4\pi P}{G}}$$

Acceleration:

$$\frac{GM}{R^2} > \sqrt{4\pi .GP}$$

Mass:

$$\frac{c^8}{4\pi .G^3 M^2} > P \qquad \Leftrightarrow \qquad M < \sqrt{\frac{c^8}{4\pi .G^3 P}}$$

Force at the centre:

$$F = Mg = \frac{c^4}{G} = 1.2\times 10^{44}\, N$$

Any black hole must have this force in the centre.

For super dense black holes with neutron degenerate matter:

$$P = 3.9\times 10^{36}\, Pa$$

$$\Leftrightarrow \qquad M < 2.12\times 10^{30}\, kg \;; \qquad g > 5.7\times 10^{13}\, m/s^2$$

Super dense black holes must have initial low masses.

There's a mole of stars in the universe.

Density of a black hole:

$$\rho = \frac{3c^6}{4\pi .G^3 M^2}$$

For: $M = 8.2\times 10^{36} kg \quad \Leftrightarrow \quad \rho = 8.7\times 10^{6} kg/m^3$

According to the Big Bang theory the older stars have the same age as the universe.
But, the existence of the heavy elements proves that there are death stars with a double age.
The universe is not expanding, it's rotating.

Neutrino degeneracy pressure:

$$P = \frac{mc^2 6\pi^2}{S^{3/2}} = 4.42\times 10^{33} Pa$$

Radiation pressure at the centre of the sun:

$$P = \frac{T}{x} = \frac{1.5\times 10^{7}}{6\times 10^{-7}} = 2.5\times 10^{13} Pa$$

T – Temperature; x – Wavelength.

The Stefan-Boltzmann law is wrong, another proof:

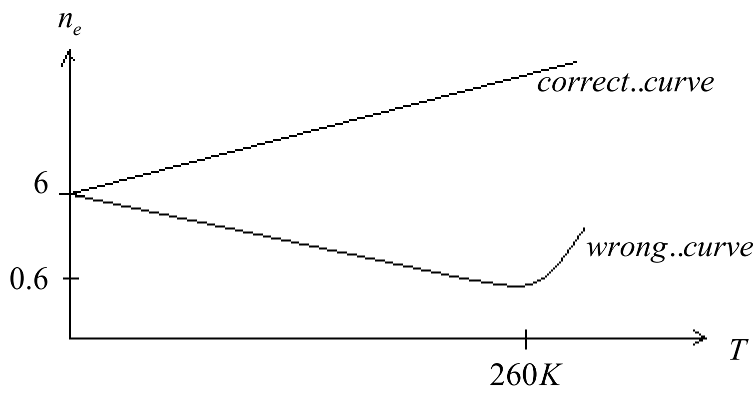
$$\sigma = 5.67\times 10^{-8} \; ; \qquad \sigma = \frac{1}{x_e{}^7 c^{11}} = 1.15\times 10^{-12}$$

x_e -- Electron Compton wavelength; c – Light speed.

The quantum of circulation, the conductance quantum and the magnetic vector potential have the same units.

Dark rate at low temperature

Anomalous dark rate at low temperature is an error.
The error is due to the wrong Stefan Boltzmann law used at the thermometer.



Correct equation:

$$I = \frac{T}{t} \quad \Leftrightarrow \quad n_e = \frac{1}{E}T + 6.6$$

Stefan Boltzmann wrong equation:

$$T = \sqrt[4]{\frac{I}{\sigma}} \quad \Leftrightarrow \quad n_e = \frac{1}{E}\sigma T^4 + 6$$

Anomalous curve:

$$n_e = \frac{1}{E}(T - \sigma T^4) + 0.6 \quad \text{for} \quad T \in [200{,}300]$$

$$T = \sigma T^4 \quad \text{with} \quad \sigma = 5.67 \times 10^{-8}$$

$$\Leftrightarrow \quad T = 260K$$

I – Intensity; T – Temperature; t – Time; E – Energy; n_e -- Number of electrons per area per time.

For low temperatures the dark rate is proportional to the temperature.

The sixth sense

We have in the head two 3D acceleration detectors so, we can detect gravitational waves.

Gravitational waves do exist, but they don't contract or expand macroscopic lengths.

The detectors we have don't work.

True gravitational waves are waves of force or acceleration. They must be detect with accelerometers.

Humans can detect gravitational waves from the moon:

$$D = 3.84 \times 10^8 m\,; \quad \Delta D = 4.26 \times 10^7 m\,; \quad M = 7.35 \times 10^{22} kg$$

$$g = \frac{GM}{D^2}$$

$$\Delta g = \frac{2GM}{D^3}\Delta D$$

$$\Delta g = 7.4\times 10^{-6} ms^{-2}$$

The mass is the electric dipole moment - B

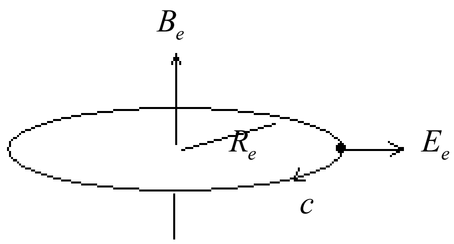
The mass is the electric dipole moment:

$$m = \frac{q.k}{d}$$

m – mass; q – electric charge; k – Boltzmann constant; d – Compton wavelength.

Coulomb meter = kilogram

The electron



$R_e = \frac{x_e}{2\pi}$; x_e - Electron Compton wavelength.

A particle is a rotating wave.

Magnetic field of the electron:

$$B_e = \frac{\mu_0 I}{2R} = \frac{\pi\mu_0 q_e f_e^2}{c} = 3.2232\times 10^7 m/s$$

Electric field of the electron:

$$E_e = \frac{\pi . q_e}{\varepsilon_0 x_e^2} = 9.65915\times 10^{15} m^2/s^2$$

$$E_e / B_e = c$$

μ_0 - Vacuum permeability; q_e - Electric charge; f_e - Compton frequency; c – Light speed; ε_0 - Vacuum permittivity.

$$q_e = E_e \frac{\varepsilon_0 x_e^2}{\pi} = E_e 4\pi R_e^2 \varepsilon_0$$

Volume of the charge:

$$V_e = \varepsilon_0 4\pi R_e^2 = 1.6587 \times 10^{-35} m^3$$

Magnetic charge of the electron:

$$q_m = B_e \frac{\pi . R_e^2}{\alpha} = \frac{h}{2q_e}$$

q_m - Magnetic charge (Weber); α - Fine structure constant.

Area of the charge:

$$A_e = \frac{\pi . R_e^2}{\alpha} = 6.4181 \times 10^{-23} m^2$$

$$B_e = \frac{c}{9.3} ; \qquad E_e = \frac{c^2}{9.3}$$

Electric and magnetic fields of a wave

Electric field:

$$E = \frac{\pi . q_e}{\varepsilon_0 x^2}$$

Magnetic field:

$$B = \frac{\pi \mu_0 q_e f^2}{c} = \frac{\pi . q_e}{\varepsilon_0 c x^2} \quad ; \qquad E / B = c$$

q_e - Electric charge; ε_0 - Vacuum permittivity; x - Wavelength;
μ_0 - Vacuum permeability; f - Frequency; c – Light speed.

For a visible photon:

$$f = 5 \times 10^{14} Hz \; ; \qquad x = 6 \times 10^{-7} m$$

$$E = 1.58 \times 10^{5} V / m..or..m^2 / s^2 \; ; \qquad B = 5.27 \times 10^{-4} T..or..m / s$$

In a wave the maximum magnetic field is in quadrature with the maximum electric field, not in phase.

Energy of the wave:

$$E_Y = hf = 3.3 \times 10^{-19} J$$

Energy of the magnetic field:

$$E_Y = \frac{B^2}{\mu_0} x^3 2.2\pi = 3.3 \times 10^{-19} J$$

Energy of the electric field:

$$E_Y = \varepsilon_0 E^2 x^3 2.2\pi = 3.3 \times 10^{-19} J$$

For B = c $\Leftrightarrow$ $x = 7.953 \times 10^{-13} m$

Force between a magnetic charge (Weber) and a magnetic field:

$$F = \frac{q_m B}{\mu_0} = q_e E$$

$$q_m = \frac{h}{2 q_e} \qquad \Leftrightarrow \qquad \frac{2 \mu_0 q_e^2 c}{h} = 4\alpha$$

q_m - Magnetic charge; h – Planck constant; α - Fine structure constant.

The magnetic field B is a speed.
The electric field is a squared speed.
Speeds of what?
Speeds of the vacuum particles.

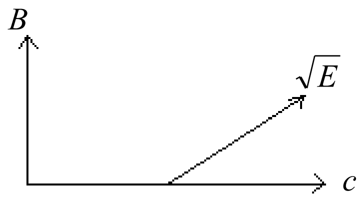
Energy of the charged one:

$$E_Y = \frac{\varepsilon_0^2}{\mu_0^2} = 310MeV$$

$$x = 4 \times 10^{-15} m \quad ; \qquad m = 5.5235 \times 10^{-28} kg$$

Energy of the neutral one:

$$E_0 = 2\pi E_Y \alpha^3 = 756.52eV \quad ; \qquad m_0 = 1.3486 \times 10^{-33} kg$$



A particle is a rotating wave.
Condition for the existence of a particle:

$$\begin{cases} F = \dfrac{mc^2}{R} = \dfrac{mc^2 2\pi}{x} \\ F = \dfrac{q_e q_m c}{\pi R^2} = \dfrac{hc2\pi}{x^2} \end{cases} \Leftrightarrow \qquad mcx = h \quad ; \quad (mwx = h)$$

m – Mass; c – Light speed; x – Wavelength; h – Planck constant.

Intensity and acceleration of charges

In classical physics an orbiting electron doesn't radiate energy because the total acceleration at the electron is zero.

Also an electron at rest in a gravitational field doesn't radiate because the total acceleration is zero.

When an electron accelerates it emits a photon.

When the electron decelerates it absorbs a photon.

In hydrogen atom the change of orbits are accelerations and decelerations.

The Larmor formula is wrong:

$$P = \frac{q^2 a^2}{6\pi \varepsilon_0 c^3}$$

Correct formulas:

Force:

$$F = m_e a$$

m_e - Electron mass; a – Acceleration; c – Light speed.

Power:

$$P = Fc \qquad \Leftrightarrow \qquad P = m_e ca$$

Intensity:

$$I = P / 4\pi R^2 \quad ; \quad \text{R = 1m}$$

$$I = \frac{m_e ca}{4\pi}$$

Approximate values for hydrogen:

$$F = \frac{13.6 \times 2\pi}{137 x_e} = 4.12 \times 10^{-8} N = m_e a$$

$$\Leftrightarrow \qquad a = 4.52 \times 10^{22} = \frac{\pi . c^2}{137^3 x_e} \quad ; \quad \Delta t = \frac{137^2 x_e}{2\pi . c}$$

$$P = 12.35W \quad ; \quad I = 0.983 W / m^2$$

For $R = R_e = \frac{137 x_e}{2\pi}$ $\Leftrightarrow$ $I = 3.51 \times 10^{20} W / m^2$

Intensity:

$$I = \frac{m_e ca}{4\pi} \quad \text{and} \quad a = \frac{\Delta v}{\Delta t}$$

$$\Delta v = \frac{c}{137}\left(\frac{1}{n_1} - \frac{1}{n_2}\right)$$

$$\lambda = n 137 x_e \quad ; \quad v = \frac{c}{n137}$$

$$t = \frac{\lambda}{v} = \frac{n^2 137^2 x_e}{c}$$

$$\Delta t = \frac{1372 x_e}{c}(n_1^{\,2} - n_2^{\,2})\frac{137}{2\pi} \quad ; \quad x_e \text{ - Electron Compton wavelength.}$$

$$a = \frac{2\pi \, .c^2}{137^4 x_e n_1 n_2 (n_1 + n_2)}$$

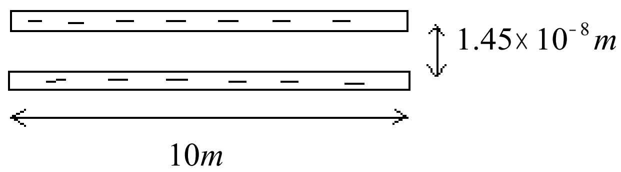
$$I = \frac{m_e c}{4\pi}\frac{2\pi \, .c^2}{137^4 x_e n_1 n_2 (n_1 + n_2)}$$

This is not correct but the correct solution is very near.
This is the way we must go.

Flying Saucers

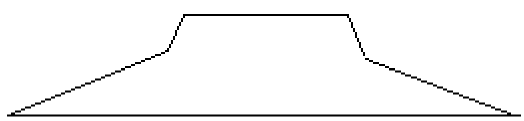
If flying saucers don't exist, they must be invented.

Flying saucers generate a negative mass with a Cooper-pair capacitor to become with a zero mass.



Diameter = 10m ; Weight = 30Tons

$$30Tons = \frac{Qk}{d} \quad \Leftrightarrow \quad Q = 3.51 \times 10^{19} C$$



Magnetic field: $B = 10^6 T$

Magnetic acceleration of the diamagnetic bodies:

$$g = \frac{B^2}{R} \quad ; \qquad R = 3m \qquad \Leftrightarrow \qquad g = 3.3 \times 10^{11} ms^{-2}$$

The bodies inside don't feel accelerations.

Known speed and acceleration in atmosphere:

$$v = 5 \times 10^4 m/s \; ; \qquad g = 1.3 \times 10^6 m/s^2$$

Voyage of 50 light years:

Time = 3 hours

Maximum speed = $5.5 \times 10^{13} m/s$

Propulsion system:

The craft is a magnet in a superconductor.
The vacuum is a superfluid and a superconductor.

Magnetic fields

A magnetic field is a speed. The speed of the particles of the vacuum:

$$m_0 = \varepsilon_0{}^4 c^2 = 5.5 \times 10^{-28} kg$$

Energy:

$$E_Y = \frac{B^2}{\mu_0} x^3 2.2\pi = \frac{1}{2} mv^2 \qquad \text{and} \qquad v = B$$

For x = xe

$$m = \frac{4.4\pi . x_e{}^3}{\mu_0} = 1.57 \times 10^{-28} kg$$

Electric field: E = Bc and v = B

$$E_Y = \varepsilon_0 E^2 x^3 2.2\pi = \frac{1}{2} mv^2$$

For x = xe

$$m = 4.4\pi \varepsilon_0 c^2 x_e{}^3 = 1.57 \times 10^{-28} kg$$

False magnetic dipole moment

Religion is ignorance.

The usual magnetic moment is only a momentum.

For the electron:

$$p = mv + q_e A$$

$$mv = \frac{m_e c}{137} = 2 \times 10^{-24}$$

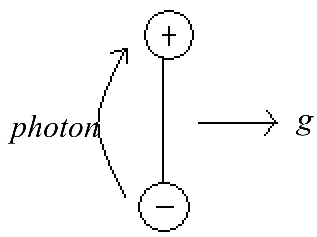
$$q_e A = \frac{q_e c \varepsilon_0 k_B}{137 x_e^2} = 7.28 \times 10^{-24}$$

$$p = \mu_e = 9.28 \times 10^{-24} \quad \text{(SI units)}$$

p – Momentum; m – Mass; v – Speed; m_e - Electron mass; c – Light speed; q_e - Electric charge; A – Magnetic potential; $137 = \alpha^{-1}$ -- α - Fine structure constant; ε_0 - Vacuum permittivity; k_B - Boltzmann constant; x_e - Electron Compton wavelength.

The inertia is the capacity of masses of keeping its state of movement. It's not a resistance force.
The electric charges resist to accelerations, masses don't.

A negative accelerated charge emits a photon.
An accelerated mass doesn't emit or absorb.
A mass is an electric dipole.
So, a positive accelerated charge absorbs a photon.

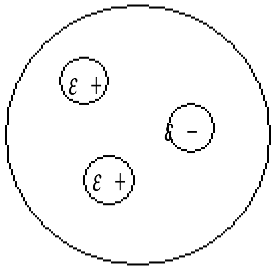


Pion energy:

$$E_{\pi +} = 139.6 MeV \,; \qquad E_{\pi 0} = 135.0 MeV$$

$$\frac{E_{\pi+} + E_{\pi 0}}{2} = 137.27 MeV$$

Proton:



$$m_{\varepsilon} = m_0 = 5.5 \times 10^{-28} kg \; ; \qquad m_0 = \frac{\varepsilon_0^{\,2}}{\mu_0^{\,2}} / c^2$$

Electron:

$$\frac{m_0}{m_e} = \frac{137^2}{\pi^3} \qquad \Leftrightarrow \qquad m_e = \frac{\pi^3 \alpha^2 \varepsilon_0^{\,2}}{c^2 \mu_0^{\,2}}$$

$$\frac{hc\varepsilon_0}{\pi^3 q_e^{\,2}} = 2.2$$

W and Z bosons:

$$\frac{E_W + E_Z}{2} = 2 \times 137 E_0 \; ; \qquad E_0 = \frac{\varepsilon_0^{\,2}}{\mu_0^{\,2}} = 310 MeV$$

Huge magnetic fields

Rotating superconductors generate a magnetic field because the electrons stay at rest and the positive charges rotate.

By this way we can generate huge magnetic fields.

Magnetic field:

$$B = \frac{\mu_0 I}{2R} \qquad \Leftrightarrow \qquad B = \frac{\mu_0 n q_e \omega}{4\pi R}$$

$$n = \frac{m}{m_P} \qquad \Leftrightarrow \qquad B = 9.6\frac{m\omega}{R}$$

B – Magnetic field; μ_0 - Vacuum permeability; I – Electric current; R – Radius; q_e - Electron charge; ω - Angular speed; m – Mass of the superconductor; m_P - Proton mass.

For:

$\omega = 1000 rot/\min = 16.7$; m = 1000kg; R = 0.3m

$$\Leftrightarrow \qquad B = 5.3\times 10^5 T$$

Magnetic field of a wave

$$B = \frac{\pi . q_e}{x^2}\sqrt{\frac{\mu_0}{\varepsilon_0}} \quad ; \qquad E = Bc$$

B = c $\Leftrightarrow$ $x = 7.953\times 10^{-13} m$ $\Leftrightarrow$ $m = 2.78\times 10^{-30} kg$

x - Compton wavelength; ε_0 - Vacuum permittivity.

Volume of the energy:

$$\rho_E = \frac{E_Y}{V} = \frac{B^2}{\mu_0} \qquad \Leftrightarrow$$

$$V = 137\frac{x^3}{2\pi^2}$$