the general science journal

Unified Absolute Relativity Theory N6

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www.wbabin.net/saraiva/saraiva328.pdf
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Speed of the magnetricity in spin ice

The fundamental magnetic monopole is the neutrino.
Spin ice monopoles have greater charges and masses.

Charge of the spin ice monopole:

$$Q_m = q_m \frac{\pi}{2\alpha} \quad ; \qquad q_m = \frac{h}{2q_e} Weber$$

q_m -- Magnetic charge or magnetic flux quantum; q_e -- Electric charge;
h – Planck constant; α -- Fine structure constant; c – Light speed.

Mass of the spin ice monopole:

$$m = q_e \sqrt{S}\, \frac{\pi}{2\alpha} = 4.77 \times 10^{-34} kg \; ; \qquad S = 1.9 \times 10^{-34} m^2$$

Speed of the magnetic wave in a spin ice electric insulator:

$$w = \frac{h}{m\sqrt{S}} = c^2 \; ; \qquad V = \frac{c^2}{3} = 3 \times 10^{16} m/s$$

The wave speed is not the speed of the monopoles as the electricity speed is not the speed of the electrons.

Magnetic and electric resistance:

$$R_M = \frac{1}{R_E}$$

A good magnetic conductor must be an electric insulator.

Resistivity:

$$\rho_M = \frac{1}{\rho_E}\frac{A^2}{l^2} \; ; \qquad \text{A – Area ; l – Length}$$

Power:

$$P = R_M I_M{}^2 \; ; \qquad I_M = \frac{Q_m}{t} Weber/s$$

Magnetic and electric resistance of spin ice

Magnetic voltage:

$$V_M = I_E = \frac{Q_e}{t} = \frac{h}{2Q_m t}$$

Magnetic current:

$$I_M = \frac{Q_m}{t}$$

Magnetic resistance:

$$R_M = \frac{V_M}{I_M} = \frac{h}{2Q_m{}^2} \; ; \qquad Q_m = q_m \frac{\pi}{2\alpha} \; ; \qquad q_m = \frac{h}{2q_e}$$

$$R_M = \frac{2h\alpha^2}{\pi^2 q_m{}^2} = \frac{8q_e{}^2\alpha^2}{\pi^2 h} = 1.67\times10^{-9}\,\Omega^{-1}$$

Electric resistance:

$$R_E = \frac{1}{R_M} = 598M\Omega$$

God commanded: let there be light
Einstein commanded: let light speed be absolute
Lemaitre commanded: let God start the Big Bang

Mass of a micro black hole

$$\frac{m}{R} = \frac{c^2}{G_e} \quad ; \qquad G_e = \frac{q_e^{\ 2}}{4\pi\varepsilon_0 m_e^{\ 2}}$$

$$R = \frac{nx}{2\pi} \qquad \Leftrightarrow \qquad \frac{2\pi.m}{x} = \frac{nc^2}{G_e}$$

$$\frac{Shc}{x^2} = \frac{\pi.q_e^{\ 2}}{4\varepsilon_0 n^4}$$

$$\Leftrightarrow \qquad m^{10} = \frac{q_e^{\ 2} ch^5}{64\varepsilon_0 \pi^3 G_e^{\ 4} S}$$

$$\Leftrightarrow \qquad m = 4.67\times 10^{-29} kg \quad ; \qquad \text{E = 26.2 MeV}$$

Vacuon:

$$m_0 = \frac{310MeV}{c^2} = 5.53\times 10^{-28} kg$$

$$\frac{m_0}{m} = \frac{1}{\sqrt{\alpha}}$$

The electron, the positron, the neutrinos and the vacuons generate dipoles.
The protons and the neutrons don't generate dipoles and have imaginary mass.

An electric dipole is equal to a magnetic dipole:

$$m = \frac{q_e k_B}{d} = \frac{hk_B}{2q_m d} = \frac{h}{wd} \quad ; \qquad q_m = \frac{ck_B}{2}$$

Magnetic periodic table

(Number of neutrons)

N0 1																	He 2
3	Li 4											Be 5	B C 6	N 7	O 8	9	F Ne 10
11	Na Mg 12											13	Al Si 14	15	P S 16	17	Cl 18
19	K Ca 20	21	Ar 22	23	Sc 24	25	Ti 26	27	V Cr 28	29	Mn Fe 30	Ni 31	Co 32	33	34	Cu Zn 35	36
37	38	Ga 39	40	Ge 41	As 42	43	44	Se Br 45	46	47	Kr Rb 48	49	Sr Y 50	Zr 51	Nb 52	53	Mo 54
55	Tc 56																

Number of active charges in a conductor

Electric insulators are very good magnetic conductors.

Electric current and electric voltage:

$$I_E = \frac{Q_e}{t} \; ; \qquad V_E = \frac{Q_m}{t}$$

Electric resistance:

$$R_E = \frac{Q_m}{Q_e} = \frac{h}{2{Q_e}^2} = \frac{h}{2{n_E}^2{q_e}^2} = \frac{2{n_M}^2{q_m}^2}{h}$$

$$R_E = R_M \quad \Leftrightarrow \quad R_E = 1\Omega \quad \Leftrightarrow \quad n_E = 113.6$$

$$\Leftrightarrow \quad n_M = 8.84 \times 10^{-3}$$

There are fractionary charges.

$$n_E = 1 \quad \Leftrightarrow \quad R_E = \frac{h}{2{q_e}^2} = 12.91 k\Omega$$ -- Resistance quantum

$$q_m = \frac{h}{2q_e}$$

$$R_E = \frac{Q_m}{Q_e} \;; \qquad R_{VA} = \sqrt{\frac{\mu_0}{\varepsilon_0}}$$

$$\sqrt{\frac{\mu_0}{\varepsilon_0}} = \frac{q_m}{q_e} 4\alpha$$

Mathematical theories of the solutions or observables

The equations of the solutions have no physical meaning, so quantum mechanics has no physical meaning as the standard model or qed.

Physical equation:

$$x^5 - bx^4 + cx^3 - dx^2 + ex - f = 0$$

Solutions: x_1, x_2, x_3, x_4, x_5

Equations of the solutions:

$$\begin{cases} x_1 + x_2 + x_3 + x_4 + x_5 = b \\ x_1x_2 + x_1x_3 + x_1x_4 + x_1x_5 + x_2x_3 + x_2x_4 + x_2x_5 + x_3x_4 + x_3x_5 + x_4x_5 = c \\ x_1x_2x_3 + x_1x_2x_4 + x_1x_2x_5 + x_1x_3x_4 + x_1x_3x_5 + x_1x_4x_5 + x_2x_3x_4 + x_2x_3x_5 + x_3x_4x_5 = d \\ x_1x_2x_3x_4 + x_1x_2x_3x_5 + x_1x_3x_4x_5 + x_2x_3x_4x_5 = e \\ x_1x_2x_3x_4x_5 = f \end{cases}$$

Heisenberg product rule:

$$Y(n, n-\beta) = \sum_{\alpha} X(n, n-\alpha) X(n-\alpha, n-\beta)$$

Wien displacement law II

Some thing is wrong with Wien law.

Wien law:

$$F = x_{MX} T = \frac{hc}{k_B 4.96} = 2.9 \times 10^{-3} mK..or..Newton$$

F – Force; x – Wavelength; T – Temperature; h – Planck constant; c – Light speed; k_B - Boltzmann constant.

Normal energy law:

$$k_B T = \frac{hc}{x} \quad \Leftrightarrow$$

$$\Leftrightarrow \qquad F' = xT = \frac{hc}{k_B} = 1.44 \times 10^{-2}\, mK..or..Newton$$

Law for the cosmic microwave radiation:

$$F'' = \frac{q_e^{\,2}}{4\pi\varepsilon_0 x_e^{\,2}\alpha} = x_{BG} T_{BG} = \frac{hc}{k_B 2.68} = 5.37 \times 10^{-3}\, mK..or..N$$

q_e - Electron electric charge; ε_0 - Vacuum permittivity;
x_e - Electron Compton wavelength; α - Fine structure constant.

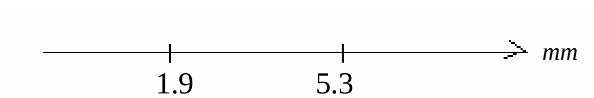
Measured values of the cosmic radiation:

$$T_{BG} = 2.725K \; ; \qquad x_{BG} = 1.87mm$$

Natural value of the wavelength:

$$x_{BG} = 5.3mm$$

Displacement:



Time

Time is a derived unit:

$$t = LV^{-1}$$

Time is very important to relate different phenomena but it doesn’t exists in nature. It’s a mathematical entity.

So, it’s impossible to travel physically in time, as in all the other units. We can’t travel in surface or energy.

If there’s no variation, there’s no time.

$$t = \frac{h}{energy} = \frac{momentum}{force} = \frac{viscosity}{pressure} = \frac{\varepsilon}{B}$$

$$t = \mu . Q_m = \frac{Q_e}{I} = \frac{energy}{power} = \frac{temperature}{intensity}$$

h – Planck constant; ε - Permittivity; B – Magnetic field; μ - Permeability;
Q_m - Magnetic charge; Q_e - Electric charge; I – Electric current.

Four universes

The matter antimatter asymmetry is a mass asymmetry because our universe is not the only one.

There is a group of four universes with different masses: one with positive mass, one with negative mass and two with imaginary mass. Our universe has positive imaginary mass.

The sum of the four universes is a zero mass and the mathematical symmetries become exact.

The particles of our vacuum exists in groups of four like the universes,

There are 6×10^{23} universes.

Why magnetic charge seems to be zero

The neutrino is the magnetic monopole.

Almost all neutral particles have magnetic charge.

We are measuring the magnetic charge of the neutrino without knowing it.

The magnetic charges seem to be zero because the vacuum and the air are short-circuits for magnetism.

Magnetic and electric resistance:

$$R_M = \frac{1}{R_E}$$

For an electric insulator $R_M \approx 0$

Magnetic voltage:

$$V_M = R_M V_E \quad \Leftrightarrow \quad V_M = 0$$

$$V_M = \frac{Q_m}{\mu_0 D} \quad \Leftrightarrow \quad Q_m = 0$$

$$H = \frac{V_M}{L} \; ; \quad B = \mu_0 H \; ; \quad \frac{dB}{dx} = 0$$

R_M - Magnetic resistance; R_E - Electric resistance; V_M - Magnetic voltage;
V_E - Electric voltage; Q_m - Magnetic charge; μ_0 - Vacuum permeability;
H – Magnetic field strength; B – Magnetic field.

Imagine a world where the electric resistance of the air is zero.

$$R_E = 0 \quad \Leftrightarrow \quad V_E = 0 \quad \Leftrightarrow \quad Q_e = 0$$

The electric charge seems to be zero. Only electrets can exist.

Why the SQUIDs oscillate at a frequency:

$$f = 4.836 \times 10^{14} Hz \quad \text{for} \quad V_E = 1V$$

$$f = \frac{2q_e}{h} V_E = \frac{V_E}{q_m}$$

Because they detect the flux of neutrinos from the sun.

Number of neutrinos per square meter per second:

$$n = 6.5 \times 10^{14} \; ; \quad \frac{f}{n} = 70\%$$

The SQUID is a neutrino detector. The nucleus of it must not be the air.

$$f = \frac{V_E}{q_m} = \frac{I_M}{q_m} = \frac{n.q_m}{q_m.t} = \frac{n}{t}$$

The frequency is the number of neutrinos.

I_M - Magnetic current

Superluminal communication with longitudinal waves

The neutrino is the monopole of the magnetic light.
Light speed squared is a normal speed for longitudinal waves.

In the Josephson junction it's necessary some energy to accelerate the Cooper-pairs. That energy comes from the neutrinos from the sun.

Number of neutrinos from the sun:

$$n = 4.836 \times 10^{14} m^{-2} s^{-1} = 1.45 \times 10^{23} m^{-3}$$

Cosmic neutrino background:

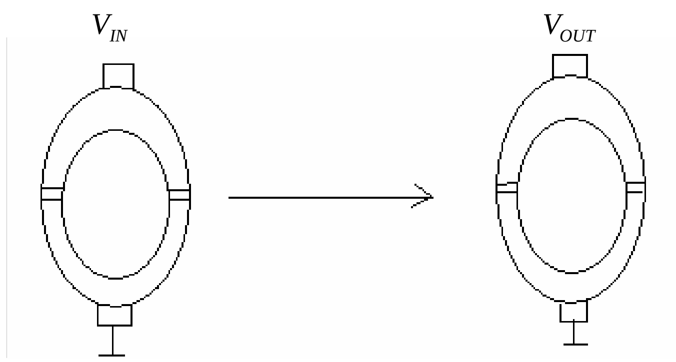
$$n = 3.3 \times 10^{8} m^{-3} = 1.1 m^{-2} s^{-1}$$

The ac effect in a Josephson junction is reversible:

$$f_{OUT} = \frac{V_{IN}}{q_m} \qquad \text{and} \qquad V_{OUT} = q_m f_{IN}$$

So, we can detect and emit neutrinos or longitudinal waves.

Squid emitter and detector:



Energy of the wave:

$$E = \frac{q_m I_E}{2\pi} \; ; \qquad I_E = 1mA \quad \Leftrightarrow \quad \text{E = 2eV}$$

Speed of the longitudinal wave:

$$w = \frac{hc^2}{E\sqrt{S}} = 1.34 \times 10^{19} m/s = 150 c^2 m/s$$

Josephson junction electric generator

The Josephson junctions generate electricity from the sun's neutrinos.

Number of photons from the sun:

$$n = 3.5 \times 10^{21} m^{-2} s^{-1}$$

Energy and total energy:

$$\text{E = 2eV} \quad \Leftrightarrow \quad E_T = 7 \times 10^{21} eVm^{-2} s^{-1} ..(Intensity)$$

It doesn't work with clouds or at night.

Number of neutrinos from the sun:

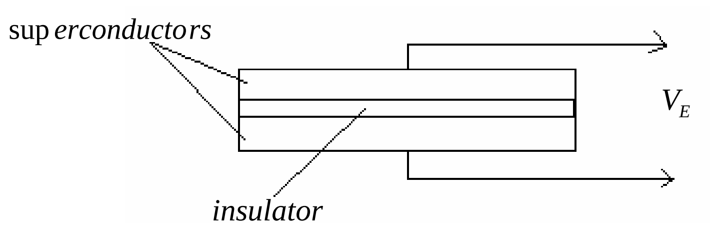
$$n = 4.8 \times 10^{14} m^{-2} s^{-1}$$

Energies:

$$E_0 = 1.2eV \ ; \quad E_K = 0.4MeV \ ; \quad E_T = 2 \times 10^{20} eVm^{-2} s^{-1}$$

Constant value day and night.

Neutrino electric cell:



Each cell detects the neutrinos that pass a area of one square meter.

Josephson junction data

The Josephson junctions are neutrino detectors. The Josephson current is not a supercurrent because it has a voltage.

Josephson junctions are like solar cells for neutrinos.

Resistance of the junction:

$$R_0 = \frac{h}{8\pi^4 {q_e}^2} = \frac{V_0}{I_0} \; ; \qquad R_0 = 32.5\Omega$$

Temperature: T = 90 K

Energy of the junction:

$$E = \frac{h\Delta E}{8{q_e}^2 R_0} = \frac{h}{4\pi q_e} I_0 = 1.64eV$$

Rest energy of the neutrino: $E = 1.2eV$

Energy of the neutrino from the sun: E = 0.4 MeV

Width of the junction:

d = 1.5 nm

Voltage of the junction:

$$V_0 = \frac{\pi\Delta E}{2q_e} \; ; \qquad V_0 = 27mV$$

Current of the junction:

$$I_0 = \frac{\pi\Delta E}{2q_e R_0} \; ; \qquad I_0 = 0.8mA$$

Power of the junction:

$$P_0 = V_0 I_0 = 21.6\mu W$$

Area of the junction:

$$A = 6.4 \times 10^{-11} m^2$$

Gap energy:

$$\Delta E = 25meV$$

Current density:

$$\rho_I = \frac{I_0}{A} = 1.25 \times 10^7 \ A/m^2$$

Resistivity:

$$\rho_R = 2.1\Omega m$$

Power of a junction with an area of 1 m2:

P = 337 KW

The Josephson junctions give a constant energy all day and night. They solve the energy problem of the earth.

Our formulas:

$$V_0 = \frac{q_e{}^3}{128\pi\alpha\varepsilon_0{}^2 d^4 T} \ ; \qquad I_0 = \frac{q_e{}^3 A}{128\pi\alpha\rho_R\varepsilon_0{}^2 d^5 T}$$

$$\Delta E = \frac{q_e{}^4}{64\pi^2\alpha\varepsilon_0{}^2 d^4 T}$$

q_e - Electron charge; A – Area; α - Fine structure constant; ε_0 - Vacuum permittivity; d – Width; T – Temperature.

UART relations:

$$\pi.q_m\mu_0 f_e = 1 + \sqrt[4]{2}\alpha$$

$$x_e = \frac{\pi.h}{2q_e c\varepsilon_0(1 + \sqrt[4]{2}\alpha)}$$

Mass of the electron:

$$m_e = \frac{2q_e\varepsilon_0}{\pi}(1 + \sqrt[4]{2}\alpha)$$

$$m_e = \frac{q_e k_B}{x_e} \frac{1}{1 + \frac{\alpha^2\pi^3}{2}}$$

$$m_e = \frac{h}{cx_e}$$

The number of vortices in a rotating superfluid is related with the number of neutrinos from the sun:

$$n = 1.6 \times 10^{6} m^{-3}$$

$$n/m^2 = 2\omega \frac{m}{h}$$

Circulation:

$$CIRC = n\frac{h}{2m} \; ; \qquad CIRC = \frac{\omega R^2}{2}$$

$$\Leftrightarrow \qquad n = \omega R^2 \frac{m}{h}$$

Neutrino magnetic Cooper-pairs

The neutrino is the magnetic monopole.

The number of neutrinos from the sun per square meter per second is 4.836×10^{14}, but we only see half of them because the neutrinos come as Cooper-pairs.

The vacuum and the air are magnetic superconductors.

$$R_M = \frac{1}{R_E} \; ; \qquad (2q_m)q_e = h$$

R_M -- Magnetic resistance; R_E -- Electric resistance;

q_m -- Elementary magnetic charge; q_e -- Elementary electric charge; h – Planck constant.

Some elements, number of neutrons:

Odd number (1,3,5…)

N0,Ga,Ge,Se,Br,Be,Ni,N,Zr,Cu,Zn

Even number (2,4,6…)

Li,Mg,Na,K,Ca,Tc,Ar,Sc,As,Ti,Cr,V,Mn,Fe,Kr,Rb,B,C,Al,Si,Co,Sr,Y,O,P,S,Nb,He,F,Ne,Cl,Mo

There are neutrinos orbiting the atoms with the number equal to the neutrons.

Neutrinos Cooper-pair force:

$$F = \frac{hSf^4}{w^3} = \frac{hf}{\sqrt{S}} \;;\qquad f = \frac{h}{Sm} \;;\qquad m = q_e\sqrt{S}$$

$$\Leftrightarrow \qquad F = \frac{h^2}{S^2 q_e}$$

F – Force; $S = 1.9\times10^{-34}\,m^2$; f – Neutrino frequency; w – Wave speed; m – Mass

Magnetic force:

$$F = \frac{{q_m}^2}{\mu_0 R^2} \qquad \Leftrightarrow \qquad \frac{h^2}{S^2 q_e} = \frac{{q_m}^2}{\mu_0 R^2}$$

$$\Leftrightarrow \qquad R = \frac{S}{2\sqrt{\mu_0 q_e}} = 2.132\times10^{-22}\,m \;;\qquad \sqrt{S} = 1.383\times10^{-17}\,m$$

$$R = \frac{N^2\sqrt{S}}{\pi} \qquad \Leftrightarrow \qquad N = \frac{\alpha}{1.04863814}$$

Energy of the Cooper-pair:

$$E = FR = \frac{h^2}{2S{q_e}^{3/2}\sqrt{\mu_0}} = 9.96\times10^{16}\,eV$$

Neutron-neutrino

The neutron and the neutrino have magnetic charge.
In the atoms the neutrino orbits the neutrons.

Force:

$$\frac{4{q_m}^2}{\pi\mu_0 R^2} = \frac{mw^2}{N^2 R} \;;\qquad R = \frac{N\sqrt{S}}{2\pi}$$

$$m = q_e\sqrt{S} \;;\qquad w = \frac{h}{q_e S}$$

$$\Leftrightarrow \qquad N = \frac{\mu_0 q_e}{2S} = 5.261\times10^8 = \frac{3}{2}137.036$$

Radius of the neutrino orbit:

$$R = 1.16\times10^{-9} m \ ; \qquad R_e = 5.3\times10^{-11} m$$

Energy:

$$E = FR = \frac{h^2}{q_e{}^2 \pi\mu_0 R} = 23.3 keV$$

Some relations

$$2q_e\Phi_0 = h \qquad \Leftrightarrow \qquad q_m = \Phi_0$$

The neutrino is the magnetic monopole.

q_e -- Elementary electric charge; Φ_0 -- Magnetic flux quantum;
q_m -- Elementary magnetic charge (Weber); h – Planck constant.

$$T = \eta.v \ ; \qquad T = nq_e a$$

T – Temperature; η -- Viscosity; v – Speed; a – Acceleration.

$$Z_0 G_0 = 4\alpha$$

Z_0 -- Vacuum impedance; G_0 -- Conductance quantum;
α -- Fine structure constant.

$$P = \eta.f \ ; \qquad q_e = \frac{\eta}{f} = \frac{m}{d}$$

P – Pressure; f – Frequency; m – Mass; d – Distance.

$$V_E = \frac{nq_m}{t} = 1 \qquad \Leftrightarrow \qquad n = \frac{1}{q_m} = 4.836\times10^{14}$$

V_E -- Electric voltage; t = time =1s; n – Number of neutrinos from the sun, $m^{-2}s^{-1}$
n/2 – Number of neutrinos observed.

$$B = \frac{1}{L.c} \ ; \qquad L = \frac{1}{E}$$

B – Magnetic field; L – Inductance; c – Light speed; E – Electric field.

$$q_m = LI_E$$

I_E -- Electric current.

$$E = G_0 . f \quad ; \qquad G_0 = \frac{2{q_e}^2}{h}$$

Neutrino magnetic charge density:

$$\rho_m = \frac{dB}{dx} = \frac{c^2}{G_0} = \frac{c^2 h}{2{q_e}^2} = 1.16 \times 10^{21} Hz$$

Photovoltaic cell:

$$V_E = \frac{k_B T}{q_e} = 26mV$$

k_B -- Boltzmann constant.

Neutrovoltaic cell:

$$T_c = 80K \quad ; \qquad I_E = \frac{3.5 k_B T_c}{q_m \alpha} = 256 \mu A$$

Classical physics with physical meaning:

$$x^3 - bx^2 + cx - d = 0 \qquad \Leftrightarrow$$

Quantum physics with no physical meaning:

$$\Leftrightarrow \qquad \begin{cases} x_1 + x_2 + x_3 = b \\ x_1 x_2 + x_1 x_3 + x_2 x_3 = c \\ x_1 x_2 x_3 = d \end{cases}$$

x_1, x_2, x_3 -- Solutions

The two equations are equivalent.

Neutrovoltaic cell

A Josephson junction is a neutrovoltaic cell. Like a photovoltaic cell detects photons, the Josephson junctions detect the sun neutrinos and generate electricity.

The Josephson junctions have a current and a resistance, so they have voltage and power.

An array with one squared meter can generate 840 Watt and works all day and night.
The neutrino is the magnetic monopole.

Josephson frequency:

$$f = \frac{2q_e}{h} V = \frac{V}{\Phi_0}$$

For V = 1 ⇔ $f = 4.836 \times 10^{14} Hz$

$$V = \frac{n\Phi_0}{t} \quad \Leftrightarrow \quad f = \frac{n}{t}$$

$$n = 4.836 \times 10^{14} s^{-1}$$

Dirac quantization:

$$2q_e\Phi_0 = h \quad \Leftrightarrow \quad \Phi_0 = q_m$$

f -- Frequency; q_e -- Electric charge; h – Planck constant; V – Voltage;
$\Phi_0 = q_m$ -- Magnetic charge (Weber); t – Time.

Number of the sun neutrinos observed on earth:

$$N = 2.42 \times 10^{14} m^{-2} s^{-1} \quad \Leftrightarrow \quad n = 2N$$

The neutrinos from the sun come as Cooper-pairs.

Voltage and current at the junctions (approximation):

$$V_0 = \frac{3.5 k_B T_c}{q_e} \; ; \qquad I_0 = \frac{3.5 k_B T_c}{\alpha . q_m}$$

Resistance:

$$R_0 = \frac{\alpha . h}{2 q_e^2} \; ;$$

α -- Fine structure constant.

All the real values are variable.

For $T_c = 90K$:

$$V_0 = 27mV \; ; \qquad I_0 = 0.29mA \; ; \qquad R_0 = 94.2\Omega$$

Power:

$$P_0 = 7.83\mu W$$

Area of the junction:

$$A = 6.4 \times 10^{-11} m^2$$

Power of an array with one squared meter:

$$P_T = 122.3kW$$

Number of junction:

$$n_0 = 125000 \times 125000$$

Thermoelectric effect corrections

Voltage:

$$V_E = ST = n\mu_0 T$$

V_E -- Voltage; S – Thermoelectric power; T – Temperature;
μ_0 -- Vacuum permeability; n – A small number.

$$S = E/(\Delta^2 T / \Delta x^2)$$

E – Electric field; x = L – Distance; V – Speed.

$$\frac{\Delta E_Y}{\Delta t} = \Pi_{AB} I_E$$

E_Y -- Energy or heat; t – Time; Π_{AB} -- Peltier coefficient; I_E -- Current.

$$\Pi_{AB} = \frac{1}{S}$$

Spectral irradiance, Q:

$$Q = \frac{\Delta E_Y}{\Delta t L^3} = \rho J^2 - SJ\frac{\Delta T}{\Delta x}$$

L^3 -- Volume; ρ -- Resistivity; J – Current density.

$$Z = \frac{\sigma . S^2}{k}$$; σ -- Conductivity; k – Thermal conductivity.

$$Z = \frac{1}{Force}$$

$$ZT = \frac{S^2 T}{\rho . k} = L^{-1}$$

Thermoelectric effect

The thermoelectric effect is not well explained.
All the SI units are correct.
The neutrino is the magnetic monopole.

For some metals:

$$\Delta V = (\mu_{R1} - \mu_{R2})\mu_0 \Delta T$$

ΔV -- Voltage; μ_R -- Relative permeability; μ_0 -- Vacuum permeability;
ΔT -- Temperature.

The permeability is an inverse density:

$$\mu_0 = \frac{1}{\rho} \approx \frac{x_e{}^3}{m_e}$$

ρ -- Density; x_e -- Electron Compton wavelength; m_e -- Electron mass.

$$\mu = \frac{R}{c} = \frac{Q_m}{Q_e c} = \frac{nh}{2 q_e{}^2 c}$$

$$\mu_0 = \frac{nh}{2 q_e{}^2 c} \quad \Leftrightarrow \quad n = 4\alpha$$

R – Resistance; c – Light speed; Q_m -- Magnetic charge; Q_e -- Electric charge;
h – Planck constant; q_e -- Electron charge; α -- Fine structure constant.

Seebeck coefficient:

$$S_B = \mu = \frac{5}{2}\frac{k_B}{q_e} \; ; \qquad \frac{k_B}{q_e} = \frac{\mu_0}{2\alpha}$$

$$\Leftrightarrow \qquad k_B q_e c = h$$

k_B -- Boltzmann constant.

Number of magnetic and electric charges:

$$\frac{n_m}{n_e} = \frac{4}{137} \; ; \qquad q_m = \Phi_0$$

q_m -- Elementary magnetic charge; Φ_0 -- Magnetic flux quantum.

Some Seebeck coefficients:

Iron -- 1.9×10^{-5}

Aluminum -- 3.5×10^{-6}

Carbon -- 3.0×10^{-6}

Copper -- 6.5×10^{-6}

Lead -- 4.0×10^{-6}

μ_0 -- 1.26×10^{-6}

The end of the units

Number of the sun neutrinos:

$$n = \frac{1}{q_m} = 4.836\times10^{14} m^{-2} s^{-1} \; ; \qquad q_m = \frac{h}{2q_e}$$

We detect only n/2 because the neutrinos come as Cooper-pairs.

q_m -- Magnetic charge; q_e -- Electric charge; h – Planck constant.

Number density:

$$\rho_v = \frac{1}{q_m c} = 1.613\times10^6 m^{-3} \text{ ;} \qquad \text{c – Light speed}$$

Vacuum permeability (inverse density):

$$\mu_0 = 2q_m c = \frac{hc}{q_e} \qquad \text{(The units are wrong)}$$

The magnetism at the earth is commanded by the sun neutrinos.

Number of electrons in vacuum:

$$\rho_e = \rho_v \frac{137}{4} = 5.53\times10^7 m^{-3}$$

$$\rho_e^{1/3} = 380.9 m^{-1}$$

Distance between the electrons:

$$x = \frac{1}{380.9} = 2.63\times10^{-3} m$$

Cosmic background:

$$\text{T = 2.725K ;} \qquad E = k_B T = \frac{hc}{\lambda}$$

$$x = \frac{\lambda}{2}$$

$$\varepsilon_0 = \frac{x}{c} \qquad \text{(The units are wrong)}$$

T – Temperature; k_B -- Boltzmann constant; ε_0 -- Vacuum permittivity.

Magnetic dipole moment of the electron:

$$MDM_e = q_m \frac{k_B}{x_e} = 1.1\times10^{-26}$$

$$MDM_e = \frac{m_e}{G_0} \text{ ;} \qquad G_0 = \frac{2q_e^{\,2}}{h}$$

$$m_e = \frac{q_e k_B}{x_e}$$

Magnetic dipole moment of the neutrino:

$$MDM_\nu = q_m \sqrt{S} = 2.77\times10^{-32} \;; \qquad S = 1.9\times10^{-34} m^2$$

$$m_\nu = q_e \sqrt{S} = 2.2\times10^{-36} kg$$

$$\frac{m_\nu}{MDM_\nu} = G_0 \;; \qquad \frac{m_e}{m_\nu} = \frac{MDM_e}{MDM_\nu} = \frac{1}{2\pi\alpha^3}$$

k_B -- Boltzmann constant; x_e -- Electron wavelength; m_e -- Electron mass;
m_ν -- Neutrino mass; G_0 -- Conductance quantum; α -- Fine structure constant;
$i\sqrt{S}$ = Neutrino Compton wavelength.

Vacuum impedance:

$$Z_0 = \frac{4q_m}{137 q_e}$$

Magnetic resistance:

$R_M = 1/R_E$; R_E -- Electric resistance.

No units physics

Maybe, it's possible a physics with no units.
We only need to define light speed and the vacuum permittivity.

Number density of neutrinos in the earth atmosphere:

$$n = 1.6\times10^6 m^{-3}$$

The next equations have wrong units.

Vacuum permeability (inverse density):

$$\mu_0 = \frac{2}{n}$$

Light speed (speed):

$$c = \left(\frac{137 n^4}{32} \right)^{1/3}$$

Vacuum permittivity (distance):

$$\varepsilon_0 = \left(\frac{128}{137^2 n^5} \right)^{1/3}$$

Loschmidt constant:

$$n_0 = \frac{137 n^4}{32}$$

The quantum of the magnetic vector potential is the same as the quantum of circulation:

$$A_0 = \frac{h}{2m_e} = \frac{x_e c}{2} \ ; \qquad A = \frac{\mu_0 I}{2}$$

Sun intensity at earth

The Stefan-Boltzmann formula is wrong.

Classical wrong calculations:

$$I = 5.67 \times 10^{-8} T^4 \ ; \qquad \text{T = 5778 K}$$

$$I_S = 6.32 \times 10^7 W / m^2$$

$$P = I_S 4\pi R_S^{\ 2} = 3.9 \times 10^{26} W \ ; \qquad R_S = 7 \times 10^8 m$$

$$P = I_T 4\pi D_{TS}^{\ 2} \ ; \qquad D_{TS} = 1.5 \times 10^{11} m$$

$$I_T = 1376.3 W / m^2$$

This intensity at earth is too high.

Correct calculations:

$$I = \frac{T}{t} \ ; \qquad T = 5 \times 10^6 K \ ; \qquad t = 1s$$

We must use the corona temperature and radius. $R_C = 1.4 \times 10^9 m$

$$I_S = 5 \times 10^6 W/m^2$$

$$P = I_S 4\pi R_C^{\ 2} = 1.23 \times 10^{26} W$$

$$P = I_T 4\pi D_{TS}^{\ 2}$$

$$I_T = 435.6 W/m^2$$

This is the correct intensity at earth. Is almost this value that we measure at earth.

Curie's constant

Magnetic susceptivity:

$$X_m = \mu_R - 1 \ ; \qquad X_m = \frac{C}{T}$$

μ_R -- Relative permeability; C – Curie's constant; T – Temperature.

Magnetization:

$$M = \frac{C}{T} H \ ; \qquad \text{H – Magnetic field strength.}$$

Wrong Curie's constant:

$$C = \frac{N_A \mu^2 \mu_0}{k_B} \ ; \qquad N_A = 6.022 \times 10^{23}$$

Correct Curie's constant:

$$C = \frac{n_0 \mu^2 \mu_0}{k_B} \ ; \qquad n_0 = 2.687 \times 10^{25} m^{-3}$$

n_0 -- Loschmidt constant; μ -- Usual magnetic moment that is only a momentum; μ_0 -- Vacuum permeability; k_B -- Boltzmann constant; N_A -- Avogadro number.

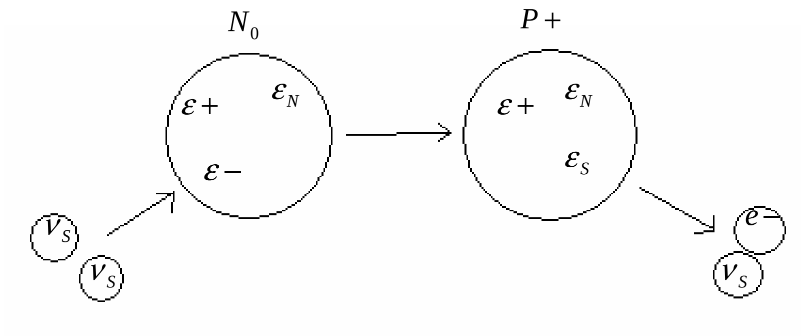
$$M = \frac{CB}{T\mu_0} \ ; \qquad M = \frac{\mu}{L^3}$$

B – Magnetic field; L – Distance.

Beta decay and quantum Hall effect

The beta decay is triggered by the sun neutrinos Cooper-pairs.

Free neutron decay:



$$T_{1/2} = 885.7s \quad \Leftrightarrow \quad f = \frac{1}{2T_{1/2}} = 5.645\times10^{-4}\,Hz$$

$$f = \sqrt{N_A} n\sigma \quad ; \quad n = 4.836\times10^{14}\,m^{-2}s^{-1}$$

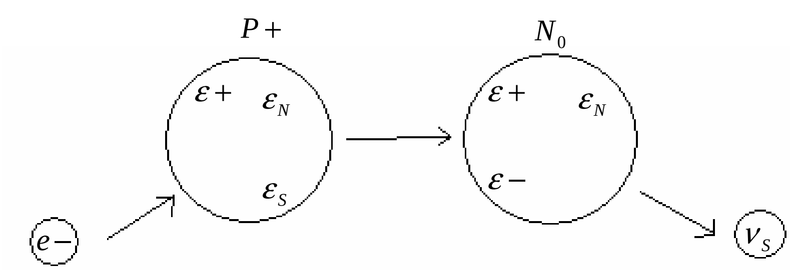
f – Decay constant; N_A -- Avogadro number;
n – Number of neutrinos from the sun; σ -- Neutron cross-section.

$$\Leftrightarrow \quad \sigma = 1.5\times10^{-30}\,m^2 \quad ; \quad \sqrt{\sigma} = 1.23\times10^{-15}\,m$$

Neutron wavelength: $x_N = 1.32\times10^{-15}\,m$

Double beta decay experiments prove nothing.
Beta + is triggered by a photon.

Proton decay:



Sun temperatures

Is not the sun corona that is much hotter, is the sun surface that is colder then normal, because the magnetic field absorbs the energy of the radiation.

Wrong and correct temperatures at surface:

$$T_W = 5.8\times10^3 K \quad ; \qquad T_{OK} = 2\times10^7 K$$

Corona temperature and radius:

$$T_C = 5\times10^6 K \, ; \qquad R_C = 1.4\times10^9 m$$

Sun radius and magnetic field:

$$R_S = 7\times10^8 m \, ; \qquad B = 4\times10^{-4} T$$

$$T_C \, 4\pi R_C{}^2 = T_{OK} \, 4\pi R_S{}^2$$

Energy and temperature of the magnetic field:

$$E = \frac{B^2 V}{2\mu_0} \; ; \qquad E = TA$$

$$T \, 4\pi R_S{}^2 = \frac{B^2}{2\mu_0}\frac{4}{3}\pi R_S{}^3 \qquad \Leftrightarrow$$

$$\Leftrightarrow \qquad T = \frac{B^2 R_S}{6\mu_0} = 1.5\times10^7 K$$

This temperature is absorbed by the magnetic field.

Solar system quantization

1 Mercury	--	$5.8\times10^{10} m$	
2 Venus	--	10.8	
3 Earth	--	15.0	Distance law:
4 Mars	--	22.8	
5 Planet X	--	42.8	
6 Jupiter	--	77.8	$D = 6.5\times1.65^{(n-1)}$
7 Saturn	--	142.7	
8 Uranus	--	287.1	
9 Neptun	--	449.7	
10 Pluto	--	591.3	

Neoclassical digital physics

The nature is digital.
The tunnelling is a classical phenomenon.
The potential barriers have moving holes.
The value of a potential barrier is an average; there are places with higher potential and places with zero potential. The barriers are quantized.

Light is not quantized. It can has any energy.

The spin is a classical rotation with a double orbit:

$$S = \frac{m}{2}\frac{x}{2\pi}c = \frac{h}{4\pi}$$

m – Mass; x – Wavelength; c – Light speed.

Entanglement is classical. The particles have a precise state all the time.

Quantum mysteries are errors.

Double slit and quantum erasers:
The particles emitte a wave, that wave communicates at speeds much greater than light speed.

There are no mysteries and paradoxes in nature.

Quantum Hall effect

Hall coefficient is an inductance:

$$R_H = \frac{E}{BJ} = \frac{1}{nq_e}$$

Hall voltage:

$$V = I\frac{B}{dnq_e}$$

E – Electric field; B – Magnetic field; J – Current density; I – Current;
n – Number of electrons; q_e -- Charge of the electron.

Hall resistance:

$$R = \frac{2}{\nu}\frac{h}{2q_e^{\ 2}} = \frac{2}{\nu}\frac{q_m}{q_e} \ ; \qquad q_m = \Phi_0$$

ν -- Filling factor; q_m -- Elementary magnetic charge; Φ_0 -- Magnetic flux quantum.

$$\nu = \frac{1}{3}, \frac{2}{5}, \frac{3}{7}, \frac{5}{2}, \frac{7}{2}, \frac{2}{3}, \frac{3}{5}, \frac{4}{7}, etc$$

$$\text{For } \nu = \frac{4}{7} \qquad \Leftrightarrow \qquad R = \frac{7}{2} \frac{q_m}{q_e}$$

In the conductor there are 7 magnetic charges for 2 electric. There are no fractionary charges.

Number of magnetic charges per cubic meter:

$$R = \frac{B}{dn_e q_e} = \frac{n_M}{n_e} \frac{q_m}{q_e} \qquad \Leftrightarrow \qquad n_M = \frac{B}{dq_m}$$

Number – Number density:

Loschmidt constant -- $n_0 = 2.687 \times 10^{25} m^{-3}$

$$n_0 = \frac{PV}{k_B T} = \frac{1.01325 \times 10^5 \times 1^3}{k_B 273.15} = 2.688 \times 10^{25}$$

P – Normal pressure; V – Volume; k_B -- Boltzmann constant; T – Temperature.

Loschmidt constant can be a number or a number density.

Units relations

L = Distance; $\quad v$ = Speed

$$H = \frac{I}{L} \; ; \qquad \Phi_E = \frac{I}{v} \; ; \qquad T = I.v$$

H – Magnetic field strength; I – Electric current; Φ_E -- Electric flux;
T – Temperature.

$$F = IA \; ; \qquad q_e = q_m A \; ; \qquad E_Y = Iq_m \; ; \qquad q_m = \frac{h}{2q_e}$$

F – Force; A – Magnetic vector potential; q_e -- Electron charge;
q_m -- Magnetic charge; E_Y -- Energy; h – Planck constant.

$$F = TL \ ; \qquad P = TA \ ; \qquad T = HA \ ; \qquad P = \frac{T^2}{H}$$

P – Power.

$$V = \sqrt{T} \ ; \qquad m = q_m{}^2 \ ; \qquad E_Y = \Phi_E{}^2 \ ; \qquad V = EL$$

V – Voltage; m – Mass; E – Electric field.

$$q_e = \frac{m}{L} \ ; \qquad \Phi_E = A^2 \ ; \qquad E_Y = A^4$$

Mass of the electron:

$$m_e = q_m{}^2 \frac{x_e{}^2}{2k_B} \frac{1}{1+\alpha/\pi^2}$$

x_e -- Electron wavelength; k_B -- Boltzmann constant; α -- Fine structure constant.

Neutrino voltaic cells

The Josephson junctions are like photovoltaic cells for neutrinos.
They detect the sun neutrinos and generate electricity.
The current is not a supercurrent because it has voltage.

$$V_C = I_C R_N \ ; \qquad P = V_C I_C$$

$$f = \frac{2q_e}{h} V \ ; \qquad \frac{h}{2q_e} = \frac{1}{K_{J-90}} = \Phi_0 \ ; \qquad K_{J-90} = 4.836 \times 10^{14}\, Hz/V$$

V_C -- Voltage of the junction; I_C -- Current of the junction; R_N -- Resistance;
P – Power; f – Frequency; q_e -- Electron charge; h – Planck constant;
V – Voltage; Φ_0 -- Magnetic flux quantum.

$$f = \frac{V}{\Phi_0} \ ; \qquad V = \frac{n\Phi_0}{t}$$

$$\Leftrightarrow \qquad f = \frac{n}{t} \qquad \Leftrightarrow \qquad n = 4.836 \times 10^{14}$$

Number of detected neutrinos from the sun:

$$n_\nu = 2.418 \times 10^{14}\, m^{-2} s^{-1} \qquad \Leftrightarrow \qquad n / n_\nu = 2$$

Power:

For Area = 1 m^2 ⇔ P = 2 MW constant all day and night

Photovoltaics 1m^2 ⇔ P = 170 W

The neutrino is the magnetic monopole

Number of free neutrinos in some elements:

Element	ρ_R	A	ρ_M	n_L	n_e	n_ν
Ag	1.6×10^{-8}	107.9×10^{-3}	10500	1	5.9×10^{28}	7.2×10^{16}
Fe	9.7×10^{-8}	55.8×10^{-3}	7870	2	1.7×10^{29}	1.3×10^{18}
Hg	9.8×10^{-7}	200.6×10^{-3}	13550	2	8.1×10^{28}	6.2×10^{18}
Cu	1.7×10^{-8}	63.6×10^{-3}	8960	1	8.5×10^{28}	1.1×10^{17}
Ge	250×10^{-3}	72.6×10^{-3}	5320	2	8.8×10^{28}	1.7×10^{24}
Si	30.0	28.1×10^{-3}	2330	2	1.0×10^{29}	2.3×10^{26}

The neutrinos in conductors are not from the atoms.

$$n_e = \frac{N_A \rho_M n_L}{A} \ ; \qquad n_\nu = \frac{\rho_R n_e 2 q_e^{\ 2}}{h}$$

ρ_R -- Resistivity; A – Atomic mass; ρ_M -- Density; n_L -- Number of free electrons;
n_e -- Number of electrons per cubic meter; n_ν -- Number of neutrinos;
N_A -- Avogadro number; h – Planck constant; q_e -- Electron charge.

$$A = \frac{dQ_m}{dx} \ ; \qquad V_E = \frac{dQ_m}{dt}$$

$$B = \mu_0 \frac{dV_M}{dx} \ ; \qquad J_E = \frac{d^2 V_M}{dx^2}$$

A – Magnetic vector potential; Q_m -- Magnetic charge; x -- Distance;
V_E -- Electric voltage; t – Time; B – Magnetic field;
V_M -- Magnetic voltage = magnetic scalar potential; J_E -- Electric current density.

The nature has no physical units, only numbers of things.

$$f_M = 2.167\times10^{25}\,Hz\,; \qquad n_0 = 2.687\times10^{25}\,m^{-3}\,; \qquad c^3 = 2.694\times10^{25}\,m^3s^{-3}$$

$$c = n_0^{\;1/3}\;; \qquad \sqrt{S} = n_0^{\;-2/3}\;; \qquad x_e = \frac{\alpha}{10c}$$

Exact fine structure constant:

$$\alpha^{-1} = \sqrt{137^2+\pi^2} = 137.036016$$

Why $E = mc^2$?

$$E = \frac{1}{2}mv^2 + \frac{1}{2}mgR$$

For the electron:

$$E_e = \frac{1}{2}m_e c^2 + \frac{1}{2}m_e g_e \frac{x_e}{2\pi}$$

$$g_e = \frac{v^2}{R} = \frac{2\pi.c^2}{x_e}$$

$$\Leftrightarrow \qquad E_e = m_e c^2$$

Total Lorentz force

Inside a superconductor electric charge has no electric charge.

Electric resistance and voltage:

$R_E = 0 \quad \Leftrightarrow \quad V_E = R_E I_E = 0\;; \qquad I_E$ -- Electric current

Electric field and charge:

$E = \frac{V_E}{L} = 0 \quad \Leftrightarrow \quad q_e = EL^3 = 0\;; \qquad$ L – Distance

So, electric charges don’t repeal each other.
Inside an insulator (air, vacuum) magnetic charge has no magnetic charge.

Electric and magnetic resistance and magnetic voltage:

$$R_E = \infty \quad \Leftrightarrow \quad R_M = 0 \quad \Leftrightarrow \quad V_M = 0$$

Magnetic field strength and magnetic charge:

$$H = \frac{V_M}{L} = 0 \quad \Leftrightarrow \quad B = \mu_0 H = 0 \quad \Leftrightarrow \quad q_m = BL^2 = 0$$

It's why we don't detect magnetic charges.

Total Lorentz force:

$$F = q_e E + q_e vB + q_m H + q_m vD$$

F – Force; q_e -- Electric charge; E – Electric field; v – Speed; B – Magnetic field; q_m -- Magnetic charge; H – Magnetic field strength; D – Electric displacement field.

$$E = vB \;; \qquad H = vD \;; \qquad B = H\mu_0 \;; \qquad D = E\varepsilon_0$$

Electric resistance:

$$R_E = \frac{q_m}{q_e} = \frac{E}{H} = \sqrt{\frac{\mu}{\varepsilon}}$$

Magnetic field and drift velocity:

$$\frac{1}{Mob} = v = B \quad \Leftrightarrow \quad \frac{I_E}{n_e q_e L^2} = \frac{\mu_0 I_E}{L}$$

$$n_e = \frac{2}{q_e \mu_0} = 10^{25} m^{-3} \;; \qquad n_e \approx n_0$$

Mob – Mobility; n_0 -- Loschmidt constant.

The magnetic field is a speed.