

## Unified Absolute Relativity Theory N7

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### Mass distribution in an electron

Spin of the electron:

$$S = \frac{m_e}{2} vR = \frac{m_e}{2} c \frac{x_e}{2\pi} = \frac{h}{4\pi}$$

$m_e$  -- Electron mass;  $c$  – Light speed;  $x_e$  -- Electron Compton wavelength;  
 $h$  – Planck constant.

False magnetic moment:

$$\mu = \frac{q_e Rv}{2} = \frac{q_e x_e c}{4\pi}$$

Gyromagnetic ratio:

$$\gamma = \frac{\mu}{S} = \frac{q_e}{m_e}$$

This is the classical gyromagnetic ratio for a disk or a cylinder.

Spin:  $S = I\omega = I \frac{v}{R} = \frac{m}{2} vR \quad \Leftrightarrow \quad I = \frac{m}{2} R^2$  ;  $I$  – Moment of inertia.

The mass of the electron is distributed as a disk or a cylinder.

$q_e \approx \frac{m_e}{x_e}$  ; The charge has the same distribution.

New Planck constant formula:

$$h = \frac{8m_e q_e}{cx_e^2} ; \quad q_e \text{ -- Electron charge.}$$

Mass resistance:

$$R_{MS} = \frac{C}{m_e} = \frac{h}{2m_e^2} = \frac{x_e c}{2m_e} = \frac{2}{q_m x_e}$$

C – Circulation quantum;  $q_m = \Phi_0$  -- Magnetic charge quantum.

Electric resistance quantum:

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

Mass current:

$$I_{MS} = m_e f_e ; \quad f_e \text{ -- Electron Compton frequency.}$$

Mass voltage:

$$V_{MS} = \frac{hf_e}{2m_e} = \frac{c^2}{2} ; \quad = \text{Gravitational potential}$$

Energies:

$$E = q_e V_E ; \quad E = m_e V_{MS} = m_e \frac{c^2}{2} ; \quad E = q_m V_M = q_m I_E$$

$V_E$  -- Electric voltage;  $V_M$  -- Magnetic voltage;  $I_E$  -- Electric current.

Mass resistivity:

$$\rho_{MS} = R_{MS} x_e = \frac{2}{q_m} = 2n_\nu$$

$n_\nu$  -- Number of neutrinos from the sun.

True magnetic dipole moment:

$$MDM = \frac{1}{R_{MS}} \frac{q_m^2}{m_e}$$

Exact value of the Boltzmann constant:

$$k_B = 1.38064302 \times 10^{-23} \text{ m}^2 ; \quad \frac{k_B c q_e}{h} = 1 + \frac{\alpha}{2\pi\sqrt{2}}$$

$$2q_m = k_B c$$

$\alpha$  -- Fine structure constant.

$$L^2 V = \Phi_0 = \frac{h}{2q_e} ; \quad LV = C = \frac{h}{2m_e}$$

$$\frac{C}{\Phi_0} = \frac{k_B}{x_e} ; \quad C = \frac{h}{2q_e} \frac{x_e}{k_B}$$

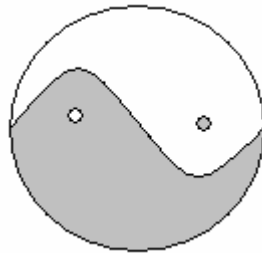
True magnetic dipole moment:

$$MDM = \frac{h}{2\Phi_E} ; \quad \Phi_E = q_e \frac{x_e}{k_B}$$

$$MDM = q_m \frac{k_B}{x_e}$$

$\Phi_E$  -- Electric flux.

Wave particle relation:



$$\frac{k_B}{x_e^2} = 2.345 ; \quad \frac{q_m^2}{m_e} = 4.7$$

False magnetic moment = Rotational momentum

$$\mu_e = I_E \text{ Area}$$

Spin:  $S_e = \mu_e \frac{m_e}{q_e} = \mu_e \frac{k_B}{x_e} ;$  The spin is a classical rotation.

Light is not quantized.

The Cooper-pairs are a consequence of the superconductivity and not a cause.

Sound pressure:

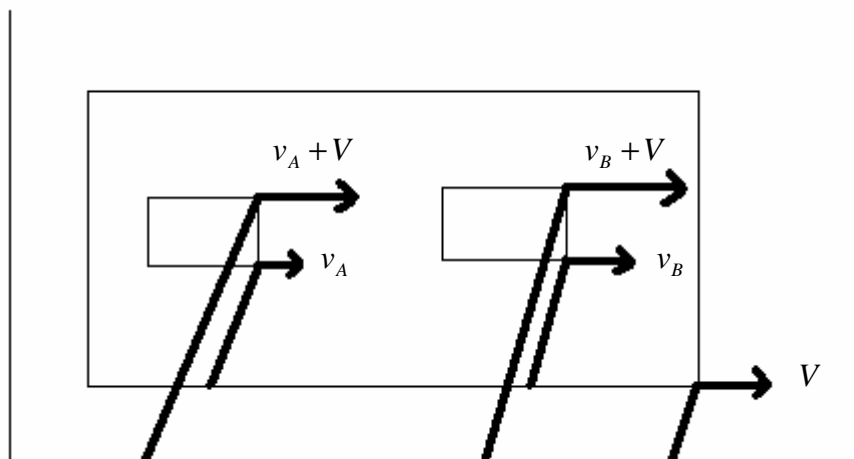
$$P = \eta \cdot f$$

P – Pressure;  $\eta$  -- Viscosity; f – Frequency.

$$\eta_{water} = 10^{-3} ; \quad \eta_{air} = 1.78 \times 10^{-5} ; \quad f = 20kHz$$

$$P_w = 20Pa ; \quad P_A = 0.356Pa$$

### Absolute rotation



The speed of (A) is relative --  $v_A$ ...or... $v_A + V$

The speed of (B) is relative --  $v_B$ ...or... $v_B + V$

The relative speed of A-B is absolute --  $v_B - v_A$

$$\Delta v = v_B - v_A = v_B + V - (v_A + V)$$

A true frame is a point.

Any object with two different speeds is rotating and that rotation is absolute, because the speed difference remains constant in any other frame.

Mach's principle is wrong. An absolute rotation has no relation with the mass of the fixed stars.

The angular speed of rotation of our universe is:  $\omega_U = 7.3 \times 10^{-11} rad / year$

A rotating body is an infinite number of frames.

$$c^2 x_e^3 = 8q_e ; \quad 4m_e = q_m c x_e^2$$

### Photodiode oscillation

Josephson junctions are like voltaic cells for neutrinos.  
Photodiodes oscillate like Josephson junctions.

$$f = \frac{I_M}{q_m} = 4.836 \times 10^{14} \text{ Hz} ; \quad f = \frac{I_E}{q_e} = 6.24 \times 10^{18} \text{ Hz}$$

$$I_M = V_E ; \quad n = 6.24 \times 10^{18} \text{ m}^{-2} \text{ s}^{-1} = 2.08 \times 10^{10} \text{ m}^{-3}$$

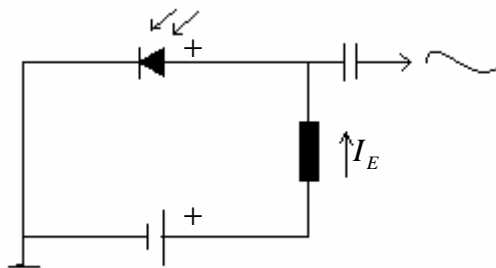
$f$  -- Frequency;  $I_M$  -- Magnetic current or electric voltage;  
 $I_E$  -- Electric current;  $q_m$  -- Magnetic charge;  $q_e$  -- Electric charge;  
 $n$  -- Number of photons.

Superfluid frequency:

$$f = \frac{I_{MS}}{m_e} = 1.1 \times 10^{30} \text{ Hz} ; \quad I_{MS} = \frac{Nm_e}{t}$$

$m_e$  -- Electron mass;  $t$  -- Time;  $I_{MS}$  -- Mass current.

Photodiode oscillation:



It's possible to make an ac current photovoltaic cell.  
Light is a wave because of the Arago spot.  
The photon spin can be zero.

Charges:

$$t_e \dots q_m \dots q_e \dots m_e$$

Time; Magnetic charge; Electric charge; Mass

Time frequency:

$$f = \frac{I_t}{t}; \quad I_t \text{ -- Time current = number of things}$$

$$f = f_e = 1.236 \times 10^{20} \text{ Hz}; \quad I_t = 1L^0V^0$$

Voltages:

$$V_E = \frac{k_B T}{q_e}; \quad V_M = \frac{k_B T}{q_m}; \quad V_{MS} = \frac{k_B T}{m_e}$$

$$k_B 300 = 25.84 \text{ meV}$$

$$V_E = 25.84 \text{ mV}; \quad V_M = 2 \mu\text{A}; \quad V_{MS} = 4.54 \times 10^9 \text{ m}^2 / \text{s}^2$$

Time voltage = Power:

$$V_t = \frac{k_B T}{t_e} = 0.512 \text{ Watt}; \quad t_e = 1 / f_e$$

$f_e$  -- Electron Compton frequency.

### Time can be a charge

Time can be a charge.

Charges:

$$\text{Time quantum -- } t_e = 8.1 \times 10^{-21} \text{ s}$$

$$\text{Magnetic charge -- } q_m = 2.1 \times 10^{-15} \text{ Weber}$$

$$\text{Electric charge -- } q_e = 1.6 \times 10^{-19} \text{ C}$$

$$\text{Mass -- } m_e = 9.1 \times 10^{-31} \text{ kg}$$

Time current:

$$I_t = \Delta n$$

For a constant volume and time, the time current is the variation of the number of things.

Energy:

$$E_t = \frac{h}{2t_e} = \frac{E_e}{2} = 4.1 \times 10^{-14} \text{ J}$$

Time resistance quantum:

$$R_t = \frac{h}{2t_e^2} = 5.1 \times 10^6 \text{ Watt}$$

Time voltage:

$$V_t = \frac{E_e}{2t_e} = R_t ; \quad \Delta n_e = \frac{V_t}{R_t} = 1$$

$$V_t = k \frac{t_e}{D} ; \quad k = L^3 V^6 \approx 10^6$$

Time force:

$$F_t = k \frac{t_e^2}{D^2}$$

If space is a charge:

$$q_x = x_e = 2.4 \times 10^{-12} \text{ m}$$

Space current or speed:

$$I_x = \frac{x_e}{t_e} = c$$

Space energy and voltage:

$$E_x = x_e V_x \quad \Leftrightarrow \quad V_x = \text{Force}$$

Momentum:

$$p_x = \frac{h}{2x_e} = 1.4 \times 10^{-22}$$

Space resistance:

$$R_x = \frac{h}{2x_e^2} = 5.6 \times 10^{-11} = I_{MS}$$

Mass current:

$$I_{MS} = \frac{m_e}{t_e} = 1.1 \times 10^{-10} \quad \Leftrightarrow \quad I_{MS} = 2R_x$$

Entropy is an area or a surface as in black holes.

Time doesn't exist in nature. All that exists is distance and speed.

We fell time by memory loss.

### 300 K superconductors

H 1.9 -18																	He 6.3 -19
Li 2.3 -17	Be 3.0 -17											B 2.2 -17	C 1.3 -17	N 2.7 -18	O 2.5 -18	F 2.0 -18	Ne 1.3 -18
Na 1.7 -17	Mg 1.8 -17											Al 2.7 -17	Si 1.5 -17	P 7.6 -18	S 6.4 -18	Cl 3.4 -18	Ar 2.0 -18
K 1.4 -17	Ca 1.6 -17	Sc 2.3 -17	Ti 2.9 -17	V 3.4 -17	Cr 3.7 -17	Mn 3.3 -17	Fe 3.2 -17	Co 3.2 -17	Ni 3.2 -17	Cu 2.9 -17	Zn 2.0 -17	Ga 2.0 -17	Ge 1.3 -17	As 1.0 -17	Se 6.7 -18	Br 3.6 -18	Kr 2.4 -18
Rb 1.2 -17	Sr 1.3 -17	Y 1.9 -17	Zr 2.5 -17	Nb 2.9 -17	Mo 3.2 -17	Tc 3.3 -17	Ru 3.2 -17	Rh 3.0 -17	Pd 2.7 -17	Ag 2.2 -17	Cd 1.7 -17	In 1.9 -17	Sn 1.3 -17	Sb 9.0 -18	Te 6.9 -18	I 4.9 -18	Xe 2.6 -18
Cs 1.0 -17	Ba 1.4 -17	La 2.4 -17	Hf 2.4 -17	Ta 2.8 -17	W 3.0 -17	Re 3.0 -17	Os 3.0 -17	Ir 2.9 -17	Pt 2.6 -17	Au 2.2 -17	Hg 1.5 -17	Tl 1.8 -17	Pb 1.3 -17	Bi 8.7 -18	Po 7.2 -18		

Example: Au --  $Q = 2.2 \times 10^{-17} C$

To reach the superconductor state:  $Q = \frac{4\pi\rho.R^2}{3N} \geq 3.23 \times 10^{-16} C$

Some superconductors:

$$Cu_2Li_{14} = 2 \times 2.9 \times 10^{-17} + 14 \times 2.3 \times 10^{-17} = 3.8 \times 10^{-16}$$

$$T_C = \frac{3.8 \times 10^{-16}}{q_e} 0.15 = +82.8^\circ C$$

$q_e$  -- Electron charge.



$$Ni_2Li_{16} = 4.32 \times 10^{-16}$$

$$T_C = \frac{Q}{q_e} 0.15 = +131.4^\circ C$$

$$Cr_2Na_{24} = 4.82 \times 10^{-16}$$

$$T_C = +178.3^\circ C$$

### Einstein's spacetime doesn't exist

Lorentz's equations:

$$\left\{ \begin{array}{l} x = \frac{x_0 + vt_0}{\sqrt{1 - v^2/c^2}} \\ t = \frac{t_0 + vx_0/c^2}{\sqrt{1 - v^2/c^2}} \end{array} \right. \Leftrightarrow \left\{ \begin{array}{l} v^2(c^2t_0^2 + x^2) + 2vc^2x_0t_0 + c^2(x_0^2 - x^2) = 0 \\ v^2(c^2t^2 + x_0^2) + 2vc^2x_0t_0 + c^4(t_0^2 - t^2) = 0 \end{array} \right.$$

$$\Leftrightarrow c^2t^2 - x^2 = c^2t_0^2 - x_0^2$$

For n frames with  $v_n$  relative speeds:

$$c^2t_1^2 - x_1^2 = c^2t_2^2 - x_2^2 = \dots = c^2t_n^2 - x_n^2 \Leftrightarrow$$

$$\Leftrightarrow c^2t_n^2 - x_n^2 = K \quad (\text{Universal constant})$$

In Einstein's theory each pair of frames can have a different value of K. It can be zero, positive or negative, but that is wrong.

$$K = \frac{\pi \cdot x_e^2 \alpha^5}{2} = 1.91 \times 10^{-34} m^2$$

$x_e$  -- Electron Compton wavelength;  $\alpha$  -- Fine structure constant.

Variable light speed (the photon has mass):

$$w = \sqrt{c^2 - Kf^2}$$

c -- Light speed; f -- Frequency.

$i\sqrt{K}$  = Compton wavelength of the neutrino longitudinal wave.

## Electric and magnetic charges

The value of the magnetic charge quantum is due to the number of neutrinos (the magnetic monopoles) from the sun.

The value of the electric charge quantum is due to the number of photons from the cosmic microwave background.

In a Josephson superconductor-normal metal junction:

$$f = \frac{V_E}{q_m} = \frac{nq_m}{q_m t} = \frac{n}{t}$$

For  $V_E = 1V \dots \text{and} \dots t = 1s$  :

$$n_v = \frac{1}{q_m} = 4.836 \times 10^{14} m^{-2} s^{-1} = 1.613 \times 10^6 m^{-3}$$

$n_v$  -- Number of neutrinos from the sun;  $q_m$  -- Magnetic charge;  $f$  – Frequency;  
 $V_E$  -- Electric voltage;  $t$  – Time;  $h$  – Planck constant;  $q_e$  -- Electric charge.

$$\text{Dirac quantization: } 2q_m q_e = h$$

In a semiconductor n-p junction:

$$f = \frac{I_E}{q_e} = \frac{nq_e}{q_e t} = \frac{n}{t}$$

For  $I_E = 1A \dots \text{and} \dots t = 1s$  :

$$n_e = \frac{1}{q_e} = 6.24 \times 10^{18} m^{-2} s^{-1} = 2.1 \times 10^{10} m^{-3}$$

$n_e$  -- Number of electrons from the CMB;  $I_E$  -- Electric current.

Number of photons from CMB:  $n_f = n_e / 2 = 10^{10} m^{-3}$

## Generation of mass and acceleration

SI units. Gravitomagnetism doesn't exist.

A rotating electric charge generates a magnetic field and a mass.  
The usual magnetic dipole moment is only a momentum.

$$p = mv = I\pi D^2 \quad \Leftrightarrow \quad m = \frac{Q_e D}{2}$$

p – Momentum; m – Mass; v – Speed; I – Electric current; D – Radius;  
 $Q_e$  -- Total electric charge.

Magnetic field:

$$B = \frac{\mu \cdot Q_e \omega}{4\pi^2 D}$$

B – Magnetic field;  $\mu$  -- Permeability;  $\omega$  -- Angular speed.

$$m = \frac{Q_e D}{2} \quad \text{and} \quad a = \frac{Gm}{D^2}$$

$$\Leftrightarrow \quad a = \frac{Q_e G}{2D}$$

a – Acceleration; G – Gravitational constant.

Experimental values of a rotating superconductor:

$$\omega = 1200 ; \quad a = 55.1 \mu g ; \quad D = 0.075$$

Total charge:  $Q_e = 1.2 \times 10^6 C$

$$n = \frac{Q_e}{q_e} = 7.56 \times 10^{24} \quad \text{-- Near Loschmidt constant.}$$

Also a current in a coil generates acceleration:

$$a = \frac{nI\pi \cdot G}{v} ; \quad v = \frac{R}{n^2 \mu}$$

n – Number of turns; I – Electric current;  $\mu$  -- Permeability;  
R – Electric resistance.

$$n = 1000 ; \quad I = 1A ; \quad R = 10 ; \quad \mu = 1.3 \times 10^{-3}$$

$$\Leftrightarrow \quad a = 2.8 \mu g$$

Earth relation:

$$M_T = \frac{Q_T D_T}{2} \quad \Leftrightarrow \quad Q_T = 1.88 \times 10^{18} C$$

$$Q_T q_e = 3/10 ; \quad q_e \text{ -- Electron charge.}$$

$M_T$  -- Earth mass;  $Q_T$  -- Earth electric charge;  $D_T$  -- Earth radius.

Speed of the electrons, magnetic and electric fields:

$$B = \frac{\mu \cdot n I}{2\pi \cdot D} ; \quad E = \frac{V}{n 2\pi \cdot D} ; \quad V \text{ -- Voltage.}$$

$$v = \frac{E}{B} = \frac{R}{n^2 \mu}$$

$$\Leftrightarrow a = \frac{n^3 \pi V G \mu}{R^2}$$

If we use an AC voltage we can generate waves of acceleration or gravitational waves.

So, we can communicate with gravitational waves.

If there is the opposite effect – detection of gravitational waves with a coil.

### Gravitational wave detector:

We use a pendulum to generate the waves.

$$\Delta V = \frac{R^2}{n^3 \pi \cdot G \mu_0} \Delta a$$

$$n = 1 ; \quad R = 10^{-6} \Omega$$

$$a = \frac{Gm}{D^2} \quad \Leftrightarrow \quad \Delta a = \frac{2Gm}{D^3} \Delta D$$

$$m = 1 ; \quad D = 0.18 ; \quad \Delta D = 0.25$$

$$\Leftrightarrow \quad \Delta a = 5.72 \times 10^{-9} \quad \Leftrightarrow \quad \Delta V = 68.2 \mu V$$

We can communicate with gravitational waves and measure its speed.

The coils must be shielded for magnetism.

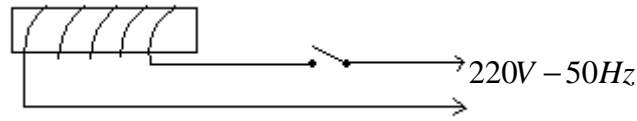
### Gravitational wave communication

SI units.

The usual gravitational wave detectors don't work, because there's no macroscopic length contraction.

The gravitational waves are waves of acceleration or force.

Emitter:



$$\Delta a = \frac{n^3 \pi G \mu}{R^2} \Delta V$$

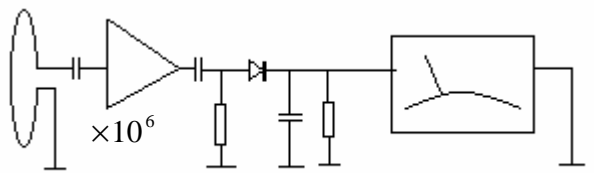
a – Acceleration; n – Number of turns; G – Gravitational constant;  $\mu$  -- Permeability; V – Voltage; R – Electric resistance.

$$\Delta V = 620V; n = 5000; \mu = 1.3 \times 10^{-3}; \text{Electric power} = 10 \text{ Watt};$$

$$R = 4.8K\Omega$$

$$\Leftrightarrow \Delta a = 10^{-6} ms^{-2}$$

Detector:



$$\Delta V = \frac{R^2}{n^3 \pi G \mu_0} \Delta a$$

$$\Delta a = 10^{-6}; R = 1.7 \times 10^{-8} \Omega; n = 1; \mu_0 \text{-- Air permeability.}$$

$$\Leftrightarrow \Delta V = 1\mu V - 50Hz$$

The signal is the digital on-off.

The detector and the emitter must be shielded with two boxes of mu-metal.

It's evident that the usual wave detectors don't work because the signal is near  $10^{-20} m$  and the detectors sensitivity is  $10^{-26} m$ , and no signal is detected.

Using a moving mass as an emitter:

$$a = \frac{Gm}{D^2} \quad \Leftrightarrow \quad \Delta a = \frac{2Gm}{D^3} \Delta D$$

$$m = 10kg; \quad D = 0.1m; \quad \Delta D = 1m$$

Transversal movement relative to the detector coil axe.

$$\Leftrightarrow \Delta a = 1.3 \times 10^{-6} \text{ ms}^{-2}$$

It's easier to detect gravitational waves in a lab.

Signal from a binary neutron star system:

$$\Delta h = 10^{-20} \text{ m} \quad \Leftrightarrow \quad \Delta a = 10^{-13} \text{ ms}^{-2}$$

### Magnetic charge in air

Magnetic charge quantum:

$$q_m = \frac{h}{2q_e} = 2.07 \times 10^{-15} \text{ Weber}$$

The electric resistance of the air is very high so the magnetic charge is very low, so the magnetic voltage and charge are also very low.

Electric resistance of the air:

$$R_E = 4 \times 10^{13} \Omega ; \quad R_M = \frac{1}{R_E}$$

Magnetic voltage:

$$V_M = R_M I_M = \frac{V_E}{R_E}$$

$$V_M = \frac{q_m}{\mu_0 D} \quad \Leftrightarrow \quad q_m = \mu_0 D \frac{V_E}{R_E}$$

Electric voltage:

$$V_E = \frac{q_e}{4\pi\epsilon_0 D} \quad \Leftrightarrow \quad q_m = \frac{\mu_0 q_e}{4\pi\epsilon_0 R_E}$$

Magnetic charge:

$$q_m \approx \frac{q_{m0}}{R_E} \quad \Leftrightarrow$$

$$\Leftrightarrow q_{mAIR} = 5 \times 10^{-29} \text{ Weber}$$

Magnetic field in a Squid:

$$B_{AIR} = 2.5 \times 10^{-18} T$$

Limit of a squid:

$$B = 5 \times 10^{-18} T$$

So, it's impossible to detect a magnetic charge in the air.

### Magnetic chemistry

Neutrino mass:

$$m = q_e \sqrt{S} = 2.2 \times 10^{-36} kg ; \quad S = 1.91 \times 10^{-34} m^2$$

Wave speed:

$$w = \frac{h}{Sq_e} = 2.16 \times 10^{19} m/s$$

One neutron atom:

Magnetic and centript forces:

$$F = \frac{q_m^2}{\mu_0 R^2} = \frac{\pi}{4\alpha^2} F_E = m \frac{v^2}{R} ; \quad q_m = \frac{h}{2q_e}$$

$$R = \frac{N\sqrt{S}}{2\pi} ; \quad v = \frac{c}{N}$$

$$N = \frac{q_e^3 S c^2 2\mu_0}{\pi h^2} = \frac{1}{\alpha_v} = \frac{1}{7.76 \times 10^{12}}$$

$$v = 2.324 \times 10^{21} m/s ; \quad R = 2.84 \times 10^{-31} m$$

$$\frac{v}{w} = \frac{\pi}{4\alpha}$$

$$\Leftrightarrow S = \frac{5h^2 \pi \alpha^{13/2}}{q_e^3 c^2 \mu_0}$$

$q_e$  -- Electron charge;  $\sqrt{S}$  -- Constant wavelength of the longitudinal waves;

h – Planck constant;  $q_m$  -- Magnetic charge;  $\mu_0$  -- Vacuum permeability;  
R – Radius; c – Light speed;  $\alpha$  -- Fine structure constant.  
Electron Compton wavelength:

$$x_e^2 = \frac{10h^2 \alpha^{3/2}}{q_e^3 c^2 \mu_0}$$

Superfluid oscillation:

Mass and circulation have the same relation as magnetic charge and electric charge.

Frequency:

$$f = n = \frac{I_{MS}}{m_e} = 1.1 \times 10^{30} \text{ Hz} = 1.1 \times 10^{30} \text{ m}^{-2} \text{ s}^{-1} = 3.66 \times 10^{21} \text{ m}^{-3}$$

$I_{MS}$  -- Mass current;  $m_e$  -- Electron mass.

Superfluids oscillate at longitudinal waves frequencies.

Mass resistance:

$$R_{MS} = \frac{Cir}{m_e} = \frac{h}{2m_e^2} = 4 \times 10^{26} = \frac{2}{q_m x_e} = \frac{1}{MDM}$$

Cir – Circulation quantum; MDM – True magnetic dipole moment.

Mass voltage or gravitational potential :

$$V_{MS} = I_{CIR} \dots \dots \dots ; \dots \dots \dots V_{CIR} = I_{MS}$$

$I_{CIR}$  -- Circulation current ;  $V_{CIR}$  -- Circulation voltage.

$$I_{CIR} = V_{MS} = \frac{c^2}{137.036} ; \quad 137.036 = \sqrt{137^2 + \pi^2} = \frac{1}{\alpha}$$

$$I_{MS} = \frac{V_{MS}}{R_{MS}} = 1.643 \times 10^{-12} = m_e f$$

$$f = f_e \frac{2}{137}$$

$$c^2 x_e^3 \approx 8q_e$$



## Magnetic chemistry II Correction to the neutron neutrino atom

SI units.

The neutron and the neutrino have magnetic charge.

Neutrino circulation or magnetic vector potential:

$$CIR = \frac{w\sqrt{S}}{2} = \frac{h}{2m} = 150.6 ; \quad S = 1.91 \times 10^{-34} m^2$$

$$w = \frac{h}{m\sqrt{S}} ; \quad m = q_e \sqrt{S} ; \quad w = 2.18 \times 10^{19} ; \quad f = 1.574 \times 10^{36} Hz$$

w – Neutrino wave speed;  $i\sqrt{S}$  -- Neutrino wavelength;  $q_e$  -- Electron charge;  
f – Neutrino frequency.

Neutrino orbital energy:

$$E = \frac{h^2}{4q_e^2 \mu_0 R} = m \frac{w^2}{n^2} ; \quad R = \frac{n\sqrt{S}}{2\pi}$$

$$\Leftrightarrow \quad n = \frac{2q_e \mu_0}{\pi S} = 6.7 \times 10^8 ; \quad \alpha_v = \frac{1}{n} = 1.49 \times 10^{-9}$$

$\mu_0$  -- Vacuum permeability; R – Orbit radius;  $\alpha_v$  -- Neutrino fine structure constant.

$$R = 1.475 \times 10^{-9} m ; \quad E = \frac{q_m^2}{\mu_0 R} = 14.4 keV$$

$$q_m = \frac{h}{2q_e} \text{ -- Magnetic charge or flux.}$$

Neutrino Cooper pair force:

$$F = mg ; \quad g = \frac{Sf^3}{w} ; \quad F = 7.53 \times 10^{19} N$$

$$F = \frac{h^2}{4q_e^2 \mu_0 R_{CP}^2} \quad \Leftrightarrow \quad R_{CP} = 2.13 \times 10^{-22} m$$

$R_{CP}$  -- Cooper pair distance.

Cooper pair energy:

$$E_{CP} = \frac{h^2}{4q_e^2 \mu_0 R_{CP}} = 10^{17} \text{ eV}$$

The neutrinos from the sun come as Cooper pair because the vacuum and the air are magnetic superconductors.

$$E_0 = 14.4 \text{ keV} \text{ -- Nuclear resonance of the Fe 57}$$

$$E = \frac{E_0 N^2}{n_Q^2} ; \quad R = \frac{R_0 n_Q^2}{N^2}$$

N – Number of neutrons;  $n_Q$  -- Principal quantum number.

Orbital frequency:

$$f_{ORB} = 3.5 \times 10^{18} \text{ Hz}$$

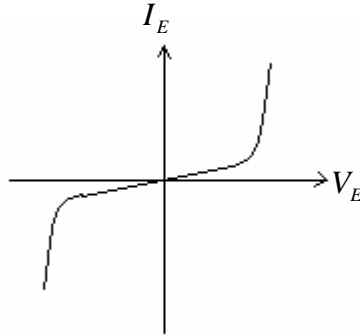
Orbital speed:

$$v_{ORB} = \frac{w}{6.7 \times 10^8} = 3.25 \times 10^{10}$$

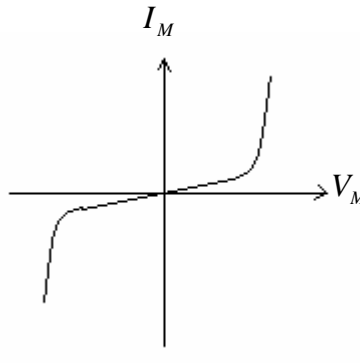
## Relation P-N and S-N junctions

Semiconductor p-n junctions and superconductor normal metal s-n junctions are equivalent.

Led – photodiode:

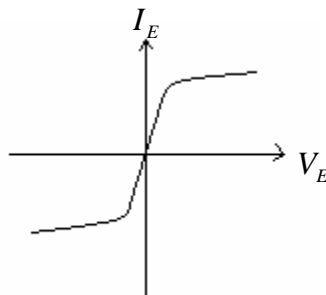


S – N junction:



$$I_M = V_E$$

$$V_M = I_E$$



$I_E$  -- Electric current;  $V_E$  -- Electric voltage;  $I_M$  -- Magnetic current;  
 $V_M$  -- Magnetic voltage.

S – N junction oscillation frequency:

$$f = \frac{V_E}{q_m} = 4.836 \times 10^{14} \text{ Hz} \quad (V_E = 1\text{V})$$

LED oscillation frequency:

$$f = \frac{I_E \alpha}{q_e 2} ; \quad \alpha \text{ -- Fine structure constant.}$$

$$I_E = 20mA \quad \Leftrightarrow \quad f = 4.836 \times 10^{14} Hz$$

$q_m$  -- Magnetic charge quantum;  $q_e$  -- Electric charge quantum.

Photodiode voltage:

$$V_E = \frac{k_B T}{q_e} = 25.84mV ; \quad T = 300 K$$

S-N junction current:

$$I_E = \frac{k_B T}{q_m} = 2\mu A$$

Semiconductor junctions and Josephson single junctions, all oscillate and all generate electricity.

Semiconductor junctions detect photons and superconductor normal metal junctions detect neutrinos.

$k_B$  -- Boltzmann constant; T – Temperature.

S-N junctions also generate light.

The nature explores all the possibilities.

We are the nature doing that.

All that man do is natural, not artificial.

### Room temperature superconductor IV

A superconductor is a material with the gravitational potential of the molecules equal to the light speed squared.

Superconductor condition:

$$Q = \frac{m}{RN} \geq \frac{c^2}{G_e} = 3.23 \times 10^{-16} ; \quad G_e = \frac{q_e^2}{4\pi\epsilon_0 m_e^2} = 2.78 \times 10^{-32}$$

m – Mass of the molecule; R – Radius of the molecule; N – Number of neutrons;  
c – Light speed;  $G_e$  -- Gravitational constant of the electron.

$$Q = \frac{4\pi\rho R^2}{3N} \geq 3.23 \times 10^{-16} ; \quad \rho \text{ -- Density.}$$

$$Q_T = Q_1 + Q_2 + Q_3 + \dots$$

Some superconductors:



$$Q_{Cr} = 3.7 \times 10^{-17} C ; \quad Q_{Ga} = 2 \times 10^{-17}$$

Temperature:

$$T_C = \frac{Q}{q_e} T_0 e^x ; \quad T_0 = 0.15 K$$

Magnetic field:

$$B_C = \frac{Q}{q_e} B_0 e^y ; \quad B_0 = 60 \mu T$$

$q_e$  -- Electron charge;  $\epsilon_0$  -- Vacuum permittivity;  $m_e$  -- Electron mass.

Inside a superconductor, electrons have no electric charge.

The electric and magnetic charges depend of the resistance of the medium.

Magnetic charge:

$$Q_m = \frac{\mu_0 q_e}{4\pi\epsilon_0 R_E} \Leftrightarrow Q_m \approx \frac{q_m}{R_E}$$

Electric charge:

$$Q_e = \frac{4\pi\epsilon_0 q_m}{\mu_0} R_E \Leftrightarrow Q_e \approx q_e R_E$$

Spin ice resistance and charge:

$$Q_m = \frac{\pi}{2\alpha} q_m ; \quad R_E = \frac{2\alpha}{\pi} = 4.65 \times 10^{-3} \Omega$$

$$Q_m = 4.65 \times 10^{-13} \text{ Weber} ; \quad q_m = 2.07 \times 10^{-15} \text{ Weber}$$

Spin ice resistivity:

$$\rho = 3 \times 10^{-3} \Omega cm$$

Cooper-pairs are not the cause of superconductivity.  
They are a consequence.

$$\text{Superconductor: } R_E = 0$$

$$\Leftrightarrow Q_m = \infty ; \quad Q_e = 0$$

$$\text{Superinsolater: } R_E = \infty$$

$$\Leftrightarrow Q_m = 0 ; \quad Q_e = \infty$$

Gravitational potential of a superconductor:

$$P_G = c^2 \text{ -- Light speed squared.}$$

### Specific heat capacity

SI units.

$$E = mCT + E_0 \quad \Leftrightarrow \quad mC = nk_B$$

$$C = \frac{nk_B}{m} = \frac{nk_B}{nm_0} = \frac{k_B}{m_0}$$

E – Energy; m – Mass; C – Specific heat; T – Temperature;  
n – Number of atoms or molecules;  $k_B$  -- Boltzmann constant.

$$C = \frac{1}{\Phi_E} = \frac{1}{L^2V^2} = \frac{1}{\sqrt{E}} ; \quad \Phi_E \text{ -- Electric flux.}$$

General formula:

$$C = \frac{k_B}{m_0} a$$

$m_0$  -- Atom or molecule mass; a – Freedom factor.

$$\text{Al -- } C = 897 = \frac{k_B}{4.5 \times 10^{-26}} \times 2.9$$

$$\text{Bi -- } C = 123 = \frac{k_B}{2.5 \times 10^{-25}} \times 3.1$$

$$\text{Mg} \text{ -- } C = 1020 = \frac{k_B}{4.1 \times 10^{-26}} \times 3.0$$

$$\text{Cu} \text{ -- } C = 385 = \frac{k_B}{10^{-25}} \times 2.8$$

$$\text{He} \text{ -- } C = 5193 = \frac{k_B}{6.7 \times 10^{-27}} \times 2.5$$

$$\text{Ar} \text{ -- } C = 520 = \frac{k_B}{6.7 \times 10^{-26}} \times 2.5$$

$$\text{N}_2 \text{ -- } C = 1040 = \frac{k_B}{4.6 \times 10^{-26}} \times 3.5$$

$$\text{O}_2 \text{ -- } C = 918 = \frac{k_B}{2.7 \times 10^{-26}} \times 3.6$$

$$\text{H}_2 \text{ -- } C = 14300 = \frac{k_B}{3.35 \times 10^{-27}} \times 3.5$$

$$\text{H}_2\text{O} \text{ -- } C = 4200 = \frac{k_B}{3 \times 10^{-26}} \times 9.1$$

$$\text{CO}_2 \text{ -- } C = 839 = \frac{k_B}{7.4 \times 10^{-26}} \times 4.5$$

### **The two universes Cooper pair**

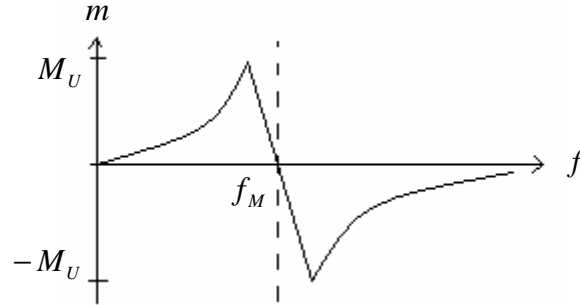
Our universe has a symmetric partner with negative mass. SI units.

Mass of the wave particles:

$$m = \frac{hf}{w^2} ; \quad w = \sqrt{c^2 - Sf^2}$$

Natural equation:

$$m = hf \frac{c^2 - Sf^2}{(c^2 - Sf^2)^2 + a}$$



$m$  – Mass;  $h$  – Planck constant;  $f$  – Frequency;  $w$  – Wave speed;  $c$  – Light speed;  
 $S = 1.9 \times 10^{-34}$ ;  $f_M = c / \sqrt{S}$  – Matter frequency;  $M_U$  -- Universe mass.

$$\frac{dm}{df} = 0 \quad \Leftrightarrow \quad c^2 - Sf^2 = \sqrt{a}$$

$$f = f_M - \Delta f \quad \Leftrightarrow \quad \Delta f = \frac{\sqrt{a}}{2\sqrt{S}}$$

$$\sqrt{a} = \frac{hc}{2\sqrt{SM_U}} = 7.2 \times 10^{-62} ; \quad \Delta f = 2.6 \times 10^{-45}$$

$$w_U = \sqrt{c^2 - Sf^2} = \sqrt[4]{a} = 2.68 \times 10^{-31} ; \quad x_U = \frac{w_U}{f_M} = 1.24 \times 10^{-56}$$

For the electron:

$$m_e c x_e = h$$

For the universe:

$$M_U w_U x_U = \frac{h}{2}$$

$m_e$  -- Electron mass;  $x_e$  -- Electron wavelength;  $w_U$  -- Universe wave speed;  
 $x_U$  -- Universe wavelength.

Angular speed of rotation of the universe:

$$\omega = 7.3 \times 10^{-11} \text{ rad / year} \quad \Leftrightarrow \quad v = c$$



## The strong force is electric

There's only one force: the electric force.

Why there are no nucleus made of two protons or two neutrons?

At short distance the neutron has a negative electric charge.

Protons repeal protons, neutrons repeal neutrons and protons attract neutrons.

Deuterium binding energy:

$$E = 2.2\text{MeV} = \frac{q_e^2}{4\pi\epsilon_0 R} \quad \Leftrightarrow \quad R = 6.47 \times 10^{-16} \text{ m}$$

Proton or neutron wavelength:

$$x = \frac{h}{cm} = 1.32 \times 10^{-15} \text{ m}$$

$$R = \frac{nx}{2\pi} \quad \Leftrightarrow \quad n = 3.076$$

$q_e$  -- Electron charge;  $\epsilon_0$  -- Vacuum permittivity; R – Radius; h – Planck constant;  
c – Light speed; m – Mass; 1/n – Proton fine structure constant.

Proton Cooper pair force:

$$F = mg = \frac{q_e^2}{4\pi\epsilon_0 R_{CP}^2} \quad \text{and} \quad R_{CP} = \frac{n^2 x}{\pi}$$

$$f = 2.27 \times 10^{23} \text{ Hz} ; \quad g = \frac{Sf^3}{c} = 7.478 \times 10^{27} \text{ ms}^{-2}$$

$$\Leftrightarrow \quad n = 3.2$$

In the deuterium the proton and the neutron are binding by the electric force.

Measured value of the radius:

$$R = 9.6 \times 10^{-16} \text{ m}$$

The force is stronger because the distance is shorter.

g – Acceleration field; f – Frequency;  $S = 1.91 \times 10^{-34} \text{ m}^2$

The proton and the neutron are made of electrons and neutrinos or vacuons: heavy electrons and neutrinos.

$$E_0 = \frac{\epsilon_0^2}{\mu_0^2} = 310MeV ; \quad E_p = 3E_0$$

$E_0$  -- Vacuon energy = heavy electron or neutrino;  
 $\mu_0$  -- Vacuum permeability;  $E_p$  -- Proton energy.

Forces proton-neutron:

$$F_{NN} < -F_{PN} < F_{PP}$$

$F_{NN}$  -- Force neutron-neutron;  $F_{PN}$  -- Force proton-neutron;  
 $F_{PP}$  -- Force proton-proton.

$$\frac{F_{PP}}{F_{NN}} = 1.1$$

The mathematical symmetries don't exist in nature.  
 Life is asymmetry almost symmetric.

### Reactionless propulsion

It's possible to violate, locally, the momentum conservation law and make a propulsion system with no reaction mass.

UART general energy formula:

$$E = hf \frac{c^2}{w^2} = hfn^2 ; \quad n = \frac{c}{w}$$

$h$  – Planck constant;  $f$  – Frequency;  $c$  – Light speed;  $w$  – Phase speed;  
 $n$  – Refractive index.

Group speed:

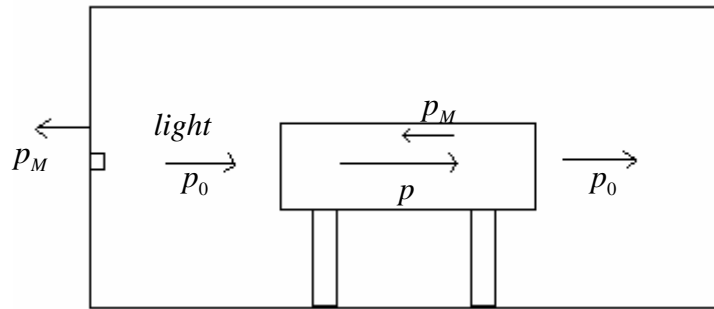
$$V = \frac{c^2}{w} \Leftrightarrow E = \frac{hf}{n_G^2} ; \quad n_G = \frac{c}{V}$$

$n_G$  -- Group speed index.

Momentum:

$$p = \frac{E}{c} \Leftrightarrow p = p_0 n^2$$

Reactionless system,  $n = 1.5$ :



$$p_0 = p - p_M = p_0 n^2 - p_M$$

$$\Leftrightarrow p_M = p_0 (n^2 - 1)$$

Frequency:

$$f = n^2 f_0$$

Quantum mechanics admit energy conservation violations in time:

$$\Delta E \Delta t = h$$

So, it must admit momentum conservation violations in space:

$$\Delta p \Delta x = h$$

The reactionless action is the mechanism of the forces. This mechanism generates pushes and pulls.

There's a local violation of the momentum conservation, but if we use a frame out of our universe the violation disappears if the universe moves a little.

If by reactionless action we move a mass of 100 Tons a distance of 10 light years, the universe moves  $10^{-31} m$ .

Our universe can be a subatomic particle in another megauniverse.

## Cosmic ray spectrum variations

The number of the background cosmic rays have two knees.

One is due to the transformation of the neutron from wave to particle, the other is the same for the neutrino. Many cosmic rays travel as longitudinal waves that don't care with the GZK cut-off.

This is a proof of UART.

Particle energy:

$$E_p = mc^2 = hf \frac{c^2}{w^2} = hfn^2 ; \quad w = \sqrt{c^2 - Sf^2}$$

Wave energy:

$$E_w = mw^2 = hf = m \frac{c^2}{n^2} ; \quad S = 1.91 \times 10^{-34} m^2$$

Graviton --  $f = f_M$

$$E_{WG} = hf_M = \frac{hc}{\sqrt{S}} = 89.63 GeV$$

The graviton mass is variable:

$$m_G = \frac{h}{2S\Delta f} ; \quad \Delta f = f_M - f$$

For the neutron:

$$E_w = 8.6 \times 10^{12} eV ; \quad E_p = 939.62 MeV$$

Cosmic ray energy:

$$E = 8.6 \times 10^{12} eV$$

For the neutrino:

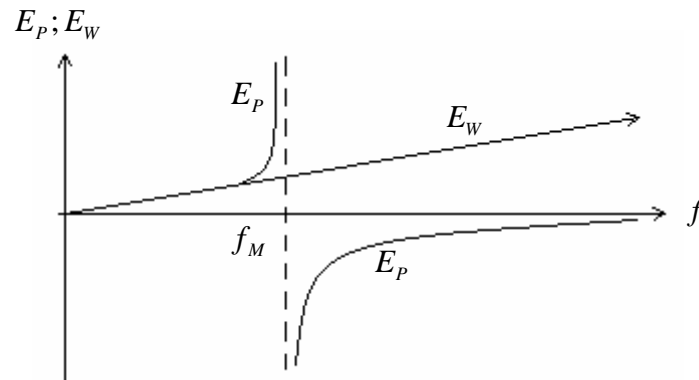
$$E_w = 6.5 \times 10^{21} eV ; \quad E_p = 1.2 eV$$

Cosmic ray energy:

$$E = 6.5 \times 10^{21} eV$$

Energy relation:

$$E_p = E_w \pm mSf^2$$



$$f_M = \frac{c}{\sqrt{S}} = 2.167 \times 10^{25} \text{ Hz}$$

Bosons W , Z ,  $\pi$  :

$$E_w = 80.4 \text{ GeV} ; \quad E_z = 91.2 \text{ GeV}$$

$$\frac{E_w + E_z}{2} = 85.8 \text{ GeV} = 2 \times 137.036 \times E_0$$

$$E_0 = \frac{\epsilon_0^2}{\mu_0^2} = 310 \text{ MeV}$$

$$E_{\pi^+} = 139.57 \text{ MeV} ; \quad E_{\pi^0} = 135.0 \text{ MeV}$$

$$\frac{E_{\pi^+} + E_{\pi^0}}{2} = 137.285 \text{ MeV} = 137.036 \times 2 \times 0.5 \text{ MeV}$$

Proton and neutron:

$$E = 3E_0$$

## Our universe II

To understand our universe we must put our self out of it.  
 Our universe is just a subatomic particle in another mega universe.  
 If I were god and have his powers I stop poverty.

Hubble constant:

$$H_0 = \frac{2\pi \cdot S}{c^2} \left( \frac{k_B T}{h} \right)^3 ; \quad T = 2.725K ; \quad S = 1.91 \times 10^{-34} m^2$$

$$H_0 = 2.4454 \times 10^{-18} Hz = 75.32 km / (s.Mpc)$$

$$H_0 = \omega_U = 2\pi \cdot f_U \quad \Leftrightarrow \quad f_U = 3.9 \times 10^{-19} Hz$$

Period of rotation:

$$T_U = 1 / f_U = 2.57 \times 10^{18} s$$

Radius of the universe:

$2\pi \cdot R_U = c T_U \quad \Leftrightarrow \quad R_U = 1.226 \times 10^{26} m$  -- Distance from us and  
 the centre of the universe. We live at the surface of our universe.

Local gravitational acceleration:

$$g_U = \frac{c^2}{R_U} = \frac{GM_U}{R_U^2} = 7.33 \times 10^{-10} ms^{-2}$$

$$g_U = \frac{2\pi \cdot S f^3}{c} \quad \text{and} \quad f = \frac{k_B T}{h}$$

This is also the acceleration field of the cosmic microwave photons.

The age of the universe is infinite.

The universe is rotating, not expanding.

Angular speed:

$$\omega_U = H_0 = \frac{c}{R_U}$$

Mass of the universe:

$$M_U = \frac{c^2 R_U}{G} = 1.651 \times 10^{53} kg$$

## Why pulsars show no time dilation

It's known that pulsars and quasars periods have no time dilation but have the normal redshifts.

This is because the  $x$  and  $t$  in the Lorentz's equations are not space and time but wavelength and period of an electromagnetic wave.

So, there's a redshift or blueshift of the waves but no space and time shifts.

Another proof of this is the non detection of the gravitational waves. They exist but don't generate any effect at space, there's no space contraction.

Gravitational waves are acceleration waves and must be detected with accelerometers.

It's possible that some of the deep focus seismic waves are gravitational waves.

This is a proof of the Unified Absolute Relativity Theory is correct and that the light speed is relative. Also, the universe is not expanding, it's rotating locally at light speed, the true constant light speed.

The magnetic field or induction is a speed.

Maximum neutron star magnetic field:

$$B = 3 \times 10^8 T \text{..or..} m/s$$

Magnetar field:

$$B = 10^{10} T \text{..or..} m/s$$

Magnetars violate the Einstein's speed limit.

## How to make a flying saucer II

Energy source:

A neutrino voltaic source made of junctions of superconductors and normal metals. Near the earth it generates 150MWatt. Far from the sun it generates almost the same power due to the cosmic neutrino background.

Propulsion system:

A reactionless propulsion made of several lasers. The light travel in an optical medium. The momentum of the light inside the medium increases and generates a momentum reaction in the opposite direction. The propulsion system has low power.

Zero mass system:

This system generates a negative mass that summed to the mass of the ship gives a zero mass. The negative mass generator is a capacitor with both plates with negative electric charge at a precise distance --  $1.45 \times 10^{-8} m$ .

Zero acceleration system:

The passengers don't feel any acceleration. It's used a magnetic field of  $B = 10^6 T$  and as the bodies are diamagnetic the accelerations are transmitted to every cell of the body.

The ship can has very high accelerations and speeds greater than light speed. The Einstein's speed limit doesn't work for macroscopic matter.

So, let's fly to the stars.

Monopole (neutrino) energy and magnetic field or neutrino speed:

$$E = mB^2 = \frac{B^2}{2\mu_0} L^3 ; \quad m = q_e \sqrt{S} \quad \Leftrightarrow \quad L = 1.773 \times 10^{-14} m$$

$$L / \sqrt{S} = 3\pi 137 ; \quad x_e / L = 137$$

### Propagation speeds

c – “Light speed” local rotational speed of our universe.

$$w = x/t = \sqrt{c^2 - Sf^2} \text{ -- True light speed, variable with the frequency.}$$

$$V_G = w^3 / c^2 \text{ -- Group speed.}$$

$$V_F = dx/dt = c^2 / w \text{ -- Speed of the forces.}$$

B – Magnetic field or the speed of the neutrinos.

$$\sqrt{E} \text{ -- Electric field speed.}$$

Gravity speed:

$$Mxw = h \quad \Leftrightarrow \quad Mw^2 = \frac{hc}{\sqrt{S}}$$

$$\Leftrightarrow \quad w = \sqrt{\frac{hc}{M\sqrt{S}}}$$

$$V_F = \frac{c^2}{w} = 7.5 \times 10^{20} \sqrt{M}$$



$$\text{Universe mass} = 1.6 \times 10^{53} \text{ kg}$$

$$V_U = 3 \times 10^{47} \text{ m/s}$$

## Electric and magnetic fields II

The electric field is the squared speed of the movement of the virtual electrons. The magnetic field is the speed of the movement of virtual neutrinos.

When the energies of the electron and the neutrino are equal:

$$E_e = E_\nu \quad \Leftrightarrow$$

$$\Leftrightarrow \begin{cases} E_e = m_e E = q_e E \frac{k_B}{x_e} \\ E_\nu = m_\nu B^2 = q_e \sqrt{S} B^2 \end{cases} \quad \Leftrightarrow$$

$$\Leftrightarrow B = c \frac{k_B}{x_e \sqrt{S}} = c \frac{137^3}{2\pi}; \quad S = 1.91 \times 10^{-34} \text{ m}^2$$

$$E = cB = c^2 \frac{137^3}{2\pi}$$

$$E_e = E_\nu = 209.3 \text{ GeV}; \quad E_0 = \frac{\epsilon_0^2}{\mu_0} = 310 \text{ MeV}$$

$$\frac{E_e}{E_0} = \frac{137\pi^2}{2}; \quad E_0 = m_e c^2 \frac{137^2}{\pi^3}$$

$m_e$  -- Electron mass;  $E$  -- Electric field;  $q_e$  -- Electron charge;  
 $k_B$  -- Boltzmann constant;  $x_e$  -- Electron Compton wavelength;  
 $m_\nu$  -- Neutrino mass;  $i\sqrt{S}$  -- Neutrino Compton wavelength;  $B$  -- Magnetic field;  
 $c$  -- Light speed;  $E_0$  -- Vacuon energy;  $\epsilon_0$  -- Vacuum permittivity;  
 $\mu_0$  -- Vacuum permeability.

The momentum conservation law can be violated locally, because there are no closed systems for gravity.

The real closed system is the universe, so a reactionless drive can move the position of the center of the universe.

Intensity:

$$I = \frac{E^2}{2Z_0} ; \quad Z_0 = \sqrt{\frac{\mu_0}{\epsilon_0}}$$

$$E_0 = \frac{1}{Z_0^4}$$

$$I = \rho_E c$$

$\rho_E$  -- Energy density.

### Silicon bandgap and the neutrino

Silicon bandgap reference voltage:

$$V_E = 1.243.Volt$$

Neutrino voltage:

$$V_E = c^2 \sqrt{S} = 1.243.Volt ; \quad S = 1.91 \times 10^{-34} m^2$$

Neutrino rest energy:

$$E_\nu = q_e V_E = 1.243 eV$$

Electron Cooper pair distance:

$$V_E = \frac{q_e}{\epsilon_0 L} \quad \Leftrightarrow \quad L = 1.45 \times 10^{-8} m$$

$$v = \frac{2q_e^2}{h\epsilon_0} = 4\alpha.c = \frac{1.45 \times 10^{-8}}{1.67 \times 10^{-15}}$$

$$x = 1.45 \times 10^{-8} m ; \quad t = 1.67 \times 10^{-15} s ; \quad f = 6 \times 10^{14} Hz$$

$$R = \frac{x}{2\pi} = 2.31 \times 10^{-9} m$$

Orbital neutrino (neutron-neutrino atom):

$$R_\nu = 1.475 \times 10^{-9} m ; \quad \frac{R}{R_\nu} = \frac{\pi}{2}$$

$$R_\nu = \frac{n\sqrt{S}}{2\pi}; \quad f_\nu = 3.5 \times 10^{18} \text{ Hz}; \quad n = 6.7 \times 10^8$$

$i\sqrt{S}$  -- Longitudinal waves wavelength;  $c$  -- Light speed;  $q_e$  -- Electron charge;  
 $\epsilon_0$  -- Vacuum permittivity;  $h$  -- Planck constant;  $\alpha$  -- Fine structure constant;  
 $t$  -- Time;  $f$  -- Frequency;  $n$  -- Inverse fine structure constant of the neutrino.

Magnetic charge or flux:

$$q_m = \frac{I_E}{E}$$

Energy:

$$E_Y = q_e V_E = q_m^2 E$$

$I_E$  -- Electric current;  $E$  -- Electric field.

### Capacitance and inductance of the vacuum

Permittivity squared under permeability squared is an energy!

$$\frac{L}{C} = \frac{\mu_0}{\epsilon_0}; \quad E_0 = \frac{\epsilon_0^2}{\mu_0^2}$$

$$2\pi \cdot f_0 = \frac{1}{\sqrt{LC}} \quad \Leftrightarrow \quad f_0 = \frac{E_0}{h} = \frac{\epsilon_0^2}{h\mu_0^2}$$

$$2\pi \frac{\epsilon_0^2}{h\mu_0^2} = \frac{1}{\sqrt{LC}}; \quad L = \frac{\mu_0}{\epsilon_0} C$$

$L$  -- Inductance;  $C$  -- Capacitance;  $\mu_0$  -- Vacuum permeability;  
 $\epsilon_0$  -- Vacuum permittivity;  $f_0$  -- Vacuum frequency;  $E_0$  -- Vacuum energy;  
 $h$  -- Planck constant.

Vacuum capacitance:

$$C_0 = \frac{h}{2\pi} \left( \frac{\mu_0}{\epsilon_0} \right)^{3/2} = 5.64 \times 10^{-27} \text{ Farad}$$

Vacuum inductance:

$$L_0 = \frac{h}{2\pi} \left( \frac{\mu_0}{\epsilon_0} \right)^{5/2} = 8.003 \times 10^{-22} \text{ Henry}$$

### Speed and distance

Everything is made only of speed and distance.

Silicon permittivity:

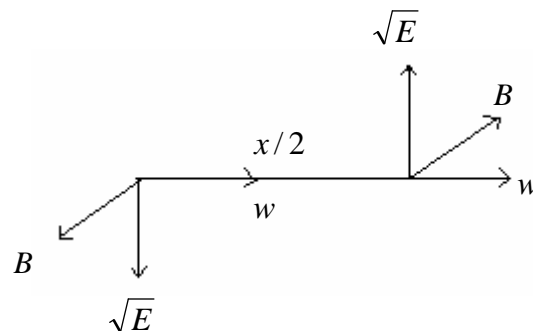
$$\epsilon = 11.68\epsilon_0 = 1.034 \times 10^{-10} \text{ m}$$

Silicon covalent radius:

$$R = 1.1 \times 10^{-10} \text{ m}$$

The permittivity is a vector and a distance!

The electromagnetic waves are made of speed and distance:



Speeds:  $\sqrt{E}$  ,  $B$  ,  $w = c$  ;  $E$  – Electric field;  $B$  – Magnetic field.

We see speed or variation of position.

We see distance or dimension.

We never see time.

Time doesn't exist in nature and is a derived unit.

Speed is the variation of distance:

$$V = \Delta L ; \quad V - \text{Speed}; L - \text{Distance.}$$

Quantity of speed:

$$V = \frac{\Delta L}{\Delta L_0 / V_0} = nV_0$$

$$\Delta L_0 = c = 3 \times 10^8 \text{ m} ; \quad L_G = \frac{1}{\sqrt[3]{G}} = 2.4653 \times 10^3 \text{ m}$$

G – Gravitational constant.

$$\frac{\Delta L_0}{L_G} \approx 2\pi 137^2$$

The speed is defined by a variation of distance.  
The distance is defined by a variation of speed.

$$V = \Delta L = \Delta \varepsilon = \Delta \sqrt{k_B} = \Delta x_e = \Delta \sqrt{S}$$

$$L = \Delta V = \Delta B = \Delta \sqrt{E} = \Delta \sqrt{P_G} = \Delta c$$

V – Speed; L – Distance;  $\varepsilon$  -- Permittivity;  $k_B$  -- Boltzmann constant;  
 $x_e$  -- Electron wavelength;  $i\sqrt{S}$  -- Neutrino wavelength; B – Magnetic field;  
E – Electric field;  $P_G$  -- Gravitational potential; c – Light speed;  
G – Gravitational constant;  $\alpha$  -- Fine structure constant.

$$\frac{c}{1/G^{1/3}} = \frac{2\pi}{\alpha^2} \left( 1 + \frac{4\pi\alpha}{3} \right) \quad \Leftrightarrow \quad G = 6.673 \times 10^{-11} \text{ m}^{-3}$$

Number of free electrons at earth surface:

$$R_E = \frac{1.6 \times 10^6 q_m}{n_e q_e} = 4 \times 10^{13} \Omega \quad \Leftrightarrow \quad n_e = 5.16 \times 10^{-4} \text{ m}^{-3}$$

$1.6 \times 10^6$  -- Number of neutrinos;  $q_m$  -- Magnetic charge or flux quantum;  
 $q_e$  -- Electron charge;  $R_E$  -- Electric resistance of the air.

$$E = Bc$$

E – Squared speed of rotation of the neutrinos or electric field;  
B – Linear speed of the neutrinos or magnetic field;  
c – Light speed or speed of rotation of our universe.

Charges in a LC oscillator:

$$Q_m = LI_E ; \quad Q_e = CV_E$$

$Q_m$  -- Magnetic charge;  $Q_e$  -- Electric charge; L – Inductance; C – Capacitance;  
 $I_E$  -- Electric current;  $V_E$  -- Electric voltage.

$H = 2Q_m Q_e$  -- Angular momentum of the oscillator.

$$H = \frac{2P}{f^2}$$

P – Electric power; f – Frequency.

### Derived formulas

Those were derived. They are not coincidences.  
The units are also correct ( SI units ).

$$\frac{36\pi.\varepsilon_0^3 x_e c^2 \alpha^2}{m_e} = 1$$

$\varepsilon_0$  -- Vacuum permittivity;  $x_e$  -- Electron Compton wavelength;  
c – Light speed;  $\alpha$  -- Fine structure constant;  $m_e$  -- Electron mass.

$$\frac{h^2 m_e}{9\pi.q_e^4 \varepsilon_0 x_e} = 1$$

h – Planck constant;  $q_e$  -- Electron charge.

$$\frac{2k_B m_e}{3x_e^2 q_e \varepsilon_0} = 1 \quad ; \quad k_B \text{ -- Boltzmann constant.}$$

$$\frac{6\pi.k_B q_e^3}{h^2 x_e} = 1$$

Neutrino Compton wavelength =  $i\sqrt{S}$  ;  $S = 1.91 \times 10^{-34} m^2$

$$S = \frac{\pi.x_e^2 \alpha^5}{2}$$

$$S = \frac{\varepsilon_0^2 \alpha^4}{12\pi^4}$$

$$\sqrt{S} = \frac{2\pi.k_B \alpha^3}{x_e}$$

$$\sqrt{S} = \frac{h^2 \alpha^3}{3q_e^3}$$

Light speed:

$$w = \sqrt{c^2 - S f^2} ; \quad f - \text{Frequency.}$$

Vacuum total energy:

Vacuum energy:

$$E_0 = \frac{\epsilon_0^2}{\mu_0^2} = 310 \text{ MeV}$$

$$E_{VC} = \frac{E_0 V_U}{\epsilon_0^3} ; \quad V_U = \frac{4}{3} \pi R_U^3 ; \quad R_U = 1.2 \times 10^{26} \text{ m}$$

$$E_{VC} = 2 \times 10^{122} \text{ eV}$$

$\mu_0$  -- Vacuum permeability;  $R_U$  -- Universe radius.

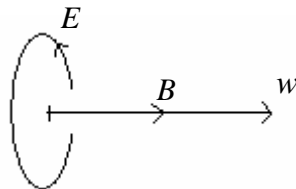
We don't feel the mass of this energy because the vacuum is a black hole.

$$m = \frac{E_0}{c^2} = 5.5 \times 10^{-28} \text{ kg} ; \quad v = \sqrt{\frac{Gm}{\epsilon_0}}$$

Gravitational constant of the vacuum:

$$G = \frac{1}{\epsilon_0^3} \quad \Leftrightarrow \quad v = c$$

Electromagnetic longitudinal waves in vacuum:



Magnetic charge:

$$q_m = BS = \frac{w}{2} S ; \quad w = \frac{h}{q_e S} = 2.16 \times 10^{19}$$

$$E = Bw = \frac{w^2}{2} = 2B^2 \quad \Leftrightarrow \quad E = 2.33 \times 10^{38}$$

B – Magnetic field; E – Electric field; w – Wave speed of the neutrino.

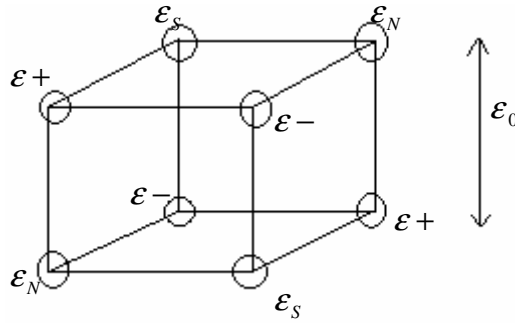
Electric charge:

$$Q_e = ES^{3/2} = 6.17 \times 10^{-13}$$

$$\frac{Q_e}{q_e} = \frac{3}{2} 137^3$$

### Vacuum structure II

The vacuum is a cubic lattice of vacuons:



Vacuum energy and mass:

$$E_0 = \frac{\epsilon_0^2}{\mu_0^2} = 310 \text{ MeV} ; \quad m_0 = \frac{E_0}{c^2} = 5.524 \times 10^{-28} \text{ kg}$$

Relation Vacuum-neutrino:

$$\frac{m_0}{m_\nu} = \frac{\epsilon_0^2}{\mu_0^2 c^2 q_e \sqrt{S}} = \frac{1}{\sqrt{2} \alpha^4} ; \quad \frac{m_0}{m_e} = \frac{\sqrt{2} \pi}{\alpha}$$

Neutrino wavelength and fine structure constant:

$$\sqrt{S} = \frac{\sqrt{2} \alpha^4 \epsilon_0^2}{\mu_0^2 c^2 q_e} = \frac{h^2 \alpha^3}{3 q_e^3} ; \quad \alpha = \frac{h^2 \mu_0^2 c^2}{3 \sqrt{2} q_e^2 \epsilon_0^2}$$



$$\frac{\sqrt{2}h^3\mu_0^2c^3}{3q_e^4\epsilon_0} = 1$$

Frequency and wave speed of the magnetic Vacuum:

$$E_0 = hf \frac{c^2}{w^2} ; \quad f = \frac{h + \sqrt{h^2 + 4m_0^2c^2S}}{2m_0S}$$

$$w = \sqrt{c^2 - Sf^2} ; \quad S = 1.91 \times 10^{-34} m^2$$

$$f = 6.3 \times 10^{27} Hz ; \quad w = i8.71 \times 10^{10} m/s ; \quad x = i\sqrt{S}$$

$$\frac{6\pi.k_Bq_e^3}{h^2x_e} = 1$$

Minimum possible electric resistivity before superconductivity:

$$\rho = \frac{1}{c} = 3.34 \times 10^{-9} \Omega m ; \quad c - \text{Light speed.}$$

The same for mobility.

Maximum possible magnetic field of a neutron star:

$$B = c = 3 \times 10^8 T$$

Magnetar field:

$$B = 10^{11} T$$

Magnetars must be very different from neutron stars, they pass a phase change.

### **Black holes have no singularities**

There are no singularities or infinities in nature.

If a star has less than  $6 \times 10^{30} kg$  mass, it can't collapse to a black hole.

If the star has more mass the pressure in the core is lower.

So, there's no singularities at the core of a black hole.

Vacuum pressure:

$$E_0 = \frac{\epsilon_0^2}{\mu_0^2} = 310 \text{ MeV} ; \quad m_0 = \frac{E_0}{c^2} = 5.5 \times 10^{-28} \text{ kg}$$

$$P = \frac{h^2}{20m_0^{8/3}} \rho^{5/3} = 10^5 \rho^{5/3} \Leftrightarrow P = 10^{37} \text{ Pa}$$

Minimum black hole (maximum pressure):

$$M = 6 \times 10^{30} \text{ kg} ; \quad R = 4.45 \times 10^3 \text{ m} ; \quad \rho = 1.6 \times 10^{19}$$

$$P = \frac{3GM^2}{4\pi R^4} = 1.5 \times 10^{36} \text{ Pa}$$

The maximum pressure at the core of a black hole is inferior to the Vacuum pressure.

Black hole core pressure:

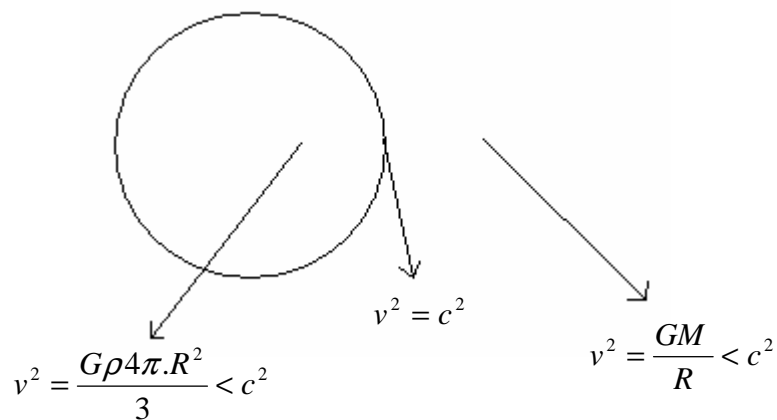
$$c^2 = \frac{GM}{R} ; \quad P = \frac{3GM^2}{4\pi R^4} \Leftrightarrow$$

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

P – Pressure; h – Planck constant;  $m_0$  -- Vacuum mass;  $\rho$  -- Average density;

M – Mass; R – Radius; G – Gravitational constant; c – Light speed.

Gravitational potential at a black hole ( $v^2$ ):



Average density and core pressure of a body:

$$\rho = \frac{PR}{GM} ; \quad P = \frac{4\pi.GR^2\rho^2}{3}$$

Pressure of the earth core and the sun core:

$$P_E = 3.45 \times 10^{11} Pa ; \quad P_S = 2.65 \times 10^{14} Pa$$

Magnetic fields overcome light speed:

Magnetar field:  $B = 10^{11} T$

Magnetic fields of the neutrino and the electron:

$$q_m = B_\nu S \quad \Leftrightarrow \quad B_\nu = \frac{W}{2} = 1.1 \times 10^{19} T$$

$$q_m = B_e k_B \quad \Leftrightarrow \quad B_e = \frac{h}{2q_e k_B} = \frac{c}{2}$$

$$S = \frac{\pi^2 c^2 \epsilon_0^4 k_B \sqrt[3]{G}}{q_e} ; \quad \frac{c^2 x_e^3}{8q_e} = 1$$

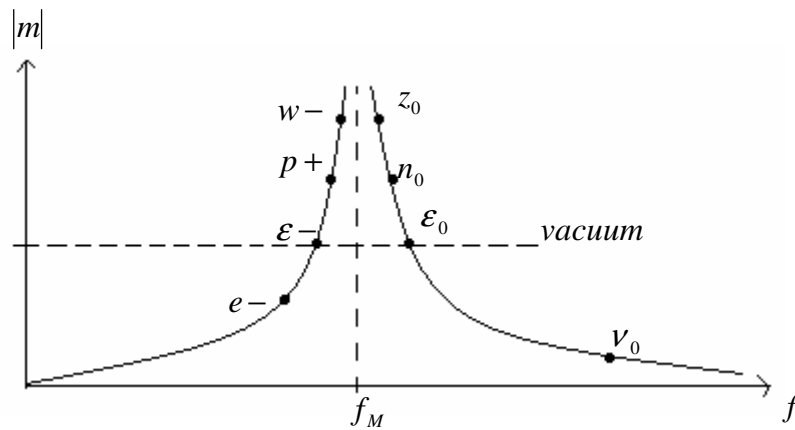
Mass with speed:

$$m = \frac{m_0}{(1 - v^2/c^2)^{3/2}} = m_0 \frac{\sqrt{1 - v^2/c^2}}{(1 - v^2/c^2)^2 + a}$$

At light speed the mass is zero.

$q_m$  -- Magnetic charge;  $B$  -- Magnetic field;  $k_B$  -- Boltzmann constant;  
 $q_e$  -- Electric charge;  $\epsilon_0$  -- Vacuum permittivity;  $x_e$  -- Electron wavelength.

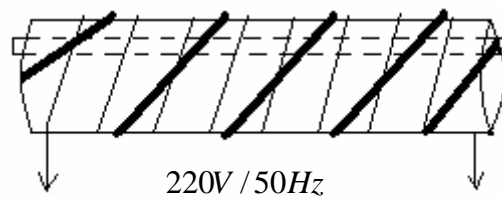
Mass of the particles:



### Autoreaction experiment

Autoreaction (the wrong reactionless) is possible because it's possible to violate, locally, the law of the linear momentum conservation. So, it's possible to move the universe.

If a mass of 100 Tons is moved 50 light years, the universe moves  $2.4 \times 10^{-31} m$ .



The device is made of two eccentric tubes of metal, with the space between them filled with mercury that can rotate.

A magnetic field is generated by a coil and a second coil generates an electric voltage between the tubes. This generates a force that rotates the mercury.

For high speed of rotation is possible that autoreaction happens.

## Super black holes

Force and acceleration:

$$F = Mg \quad \text{and} \quad g = \frac{S c f_0^3 (c^2 - v^2)^{3/2}}{(c^2 + v w_0)^2 (w_0 + v)}$$

Matter frequency:

$$f_0 = f_M = \frac{c}{\sqrt{S}} ; \quad w_0 \ll c$$

$$\Leftrightarrow \quad g = \frac{(c^2 - v^2)^{3/2}}{c \sqrt{S}} = 2.4 \times 10^8 (c^2 - v^2)^{3/2}$$

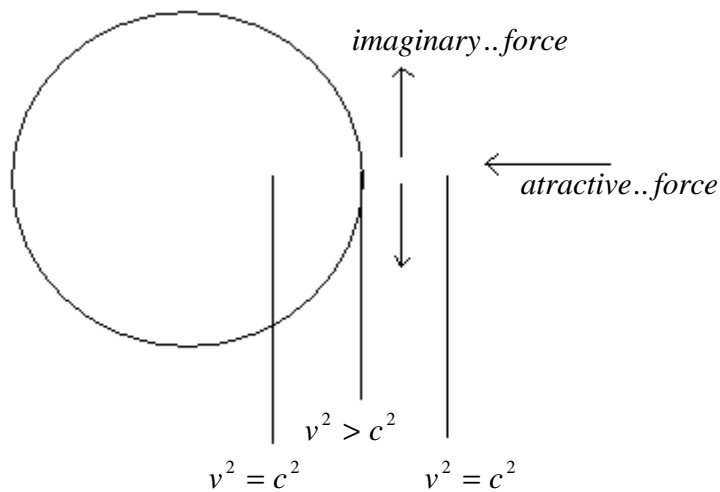
$$\text{For } v > c \quad \Leftrightarrow \quad g = i 2.4 \times 10^8 (v^2 - c^2)^{3/2}$$

Macroscopic matter has no speed limit.

F – Force; M – Mass; g – Acceleration;  $S = 1.91 \times 10^{-34} m^2$ ; c – Light speed;  
v – Orbital speed.

A super black hole is a body with an orbital speed at it surface greater than light speed.

$$\frac{GM}{R} > c^2$$



The imaginary force generates polar jets.