

Beta decay and quantum Hall effect

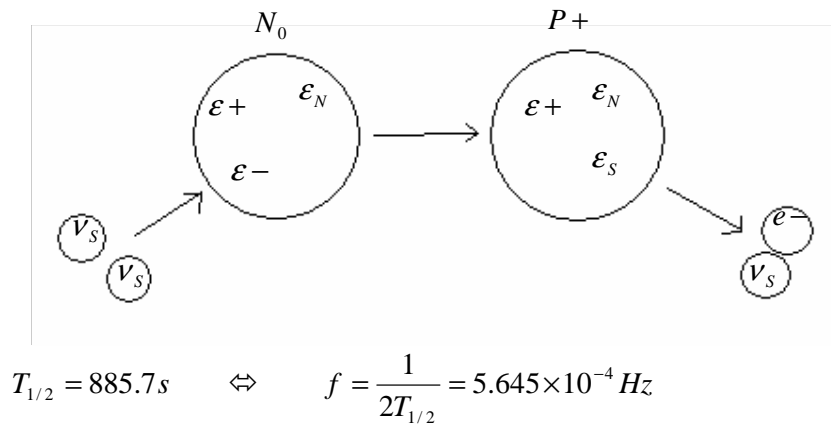
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See Unified Absolute Relativity Theory at:

- www.wbabin.net/saraiva/saraiva305.pdf
- www.wbabin.net/saraiva/saraiva306.pdf
- www.wbabin.net/saraiva/saraiva307.pdf
- www.wbabin.net/saraiva/saraiva328.pdf
- www.wbabin.net/stham/saraiva347.pdf

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

Free neutron decay:



$$f = \sqrt{N_A} n \sigma \quad ; \quad n = 4.836 \times 10^{14} m^{-2} s^{-1}$$

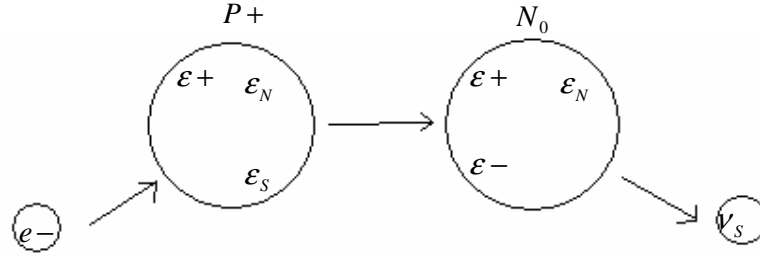
f – Decay constant; N_A -- Avogadro number;
n – Number of neutrinos from the sun; σ -- Neutron cross-section.

$$\Leftrightarrow \quad \sigma = 1.5 \times 10^{-30} m^2 \quad ; \quad \sqrt{\sigma} = 1.23 \times 10^{-15} m$$

Neutron wavelength: $\lambda_N = 1.32 \times 10^{-15} m$

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 than normal, because the magnetic field absorbs the energy of the radiation.

Wrong and correct temperatures at surface:

$$T_W = 5.8 \times 10^3 K ; \quad T_{OK} = 2 \times 10^7 K$$

Corona temperature and radius:

$$T_C = 5 \times 10^6 K ; \quad R_C = 1.4 \times 10^9 m$$

Sun radius and magnetic field:

$$R_S = 7 \times 10^8 m ; \quad B = 4 \times 10^{-4} T$$

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

Energy and temperature of the magnetic field:

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

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

$$\Leftrightarrow \quad T = \frac{B^2 R_S}{6\mu_0} = 1.5 \times 10^7 K$$

This temperature is absorbed by the magnetic field.

Solar system quantization

1 Mercury	--	$5.8 \times 10^{10} m$	
2 Venus	--	10.8	
3 Earth	--	15.0	Distance law:
4 Mars	--	22.8	
5 Planet X	--	42.8	
6 Jupiter	--	77.8	$D = 6.5 \times 1.65^{(n-1)}$
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 communicate 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:

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

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

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

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

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

Number of magnetic charges per cubic meter:

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

Number – Number density:

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

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

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

Loschmidt constant can be a number or a number density.