the general science journal

Josephson junction data

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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 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:

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

Temperature: T = 90 K

Energy of the junction:

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

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:

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

Current of the junction:

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

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:

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

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

Mass of the electron:

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

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

$$m_e = \frac{h}{c x_e}$$

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:

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

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