

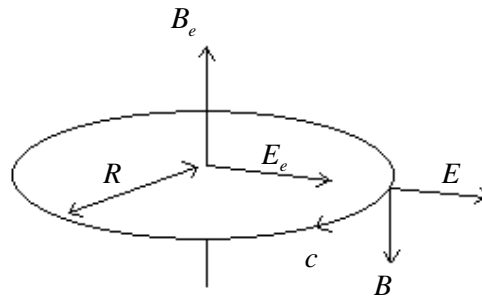
The Particle Electron

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See Unified Absolute Relativity Theory at:

<http://www.wbabin.net/saraiva/saraiva105.pdf>
<http://www.wbabin.net/saraiva/saraiva223.pdf>

A particle is a rotating half wave.



The electron is a half wave rotating at light speed.
The movement is maintained by an induced magnetic and electric fields.

Gyroradius:

$$R = \frac{mv}{qB} ; \quad R = \frac{x_e}{2\pi} ; \quad v = c$$

Induced central magnetic field:

$$B_e = \frac{m_e c \cdot 2\pi}{q_e x_e} = \frac{2\pi \cdot h}{q_e x_e^2} = 4.415 \times 10^9 \text{ ms}^{-1}$$

Verification with the magnetic charge:

$$q_m = B_e \pi \cdot R^2 = \frac{h}{2q_e}$$

R – radius of the orbit; m_e -- Electron mass; c – Light speed

x_e -- Electron Compton wavelength; q – Electric charge; q_m -- Magnetic charge;

h – Planck constant; B – Magnetic field; E – Electric field

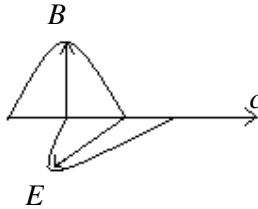
Induced central electric field:

$$q_e = E_e \frac{4}{3} \pi R^3 \Leftrightarrow E_e = \frac{6\pi^2 q_e}{x_e^3} = 6.645 \times 10^{17} m^2 s^{-2}$$

For the central fields:

$$\frac{E_e}{B_e} = \frac{c}{2}$$

Half wave of the electron:



The electric and magnetic fields are in quadrature, so the energy is constant and oscillate between magnetic and electric.

Energy E_y of the electron:

$$E_y = \left(\frac{\epsilon_0 E_0^2}{4} + \frac{B_0^2}{4\mu_0} \right) \frac{4}{3} \pi R^3$$

$$\frac{\epsilon_0 E_0^2}{4} = \frac{B_0^2}{4\mu_0}$$

Electric field of the wave:

$$E_0^2 = \frac{12\pi^2 E_y}{\epsilon_0 x_e^3} \Leftrightarrow E_0 = 2.77 \times 10^{17}$$

$$B_0^2 = \frac{12\pi^2 m_e}{\epsilon_0 x_e^3} \Leftrightarrow B_0 = 9.24 \times 10^8$$

$$\frac{E_0}{B_0} = c$$

Total fields:

$$B_T = B_e - B_0 = 4.\pi.c$$

$$E_T = E_e + E_0 = 3.\pi.c^2$$

Some equations from units unification theory

$$\frac{\epsilon_0}{x_e} = \frac{137.036}{12.\pi}$$

Exact value of the permittivity:

$$\epsilon_0 = 8.82 \times 10^{-12} m \quad (\text{Old value} = 8.854 \times 10^{-12})$$

Permeability:

$$\mu_0 = \frac{1}{c^2 \epsilon_0} = 4.\pi.1.004 \times 10^{-7}$$

New electron formula:

$$6.\pi.q_e^2 = h.c.x_e$$