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# Electron Orbit

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The apparent radius of the electron:

$$\begin{cases} F_\varepsilon = \dfrac{1}{4\pi\varepsilon_0}\dfrac{{q_e}^2}{R^2} \\ F_C = \dfrac{m_e c^2}{R} \end{cases} \Leftrightarrow$$

$F_\varepsilon =$ Classical electric force

$F_C =$ Centript force

$$\Leftrightarrow \qquad R = 2.8\times10^{-15}\, m$$

But the macroscopic force between electric charges can't be used for the proton-electron system.

Correct force from Absolute Relativity Theory:

$$F = m_e g_p = 7.1\times10^{-3}\, N$$

$m_e =$ Mass of the electron

$g_p =$ Acceleration of the field of the proton

$$\Leftrightarrow \qquad R = 1.2\times10^{-11}\, m$$

$$nx_e = 2\pi R \qquad \Leftrightarrow \qquad n = 30$$

A standing wave doesn't radiate. The perimeter of the orbit of the electron is 30 times its wavelength.

**Fine structure constant**

$$\frac{1}{\alpha} \approx 137 \approx \frac{hc4\pi\varepsilon_0}{2\pi q_e^{\,2}} = \frac{\dfrac{hc}{2\pi R^2}}{\dfrac{q_e^{\,2}}{4\pi\varepsilon_0 R^2}}$$

The fine structure constant is a ratio between forces. A classical electric force, that is wrong, and a centript force:

$$\frac{hc}{2\pi} = \frac{m_e R c^2}{2\pi} \qquad ; \qquad (R \approx x_e)$$

$$F_C = \frac{m_e c^2 R}{2\pi R^2} = \frac{m_e c^2}{2\pi R} \qquad ; \qquad \left(F_C = \frac{mv^2}{R}\right)$$

And $2\pi R = x_e$ -- Wavelength of the electron

$$137 = \frac{F_C}{F_\varepsilon} \qquad \Leftrightarrow \qquad \frac{m_e c^2}{137 x_e} = \frac{q_e^{\,2}}{4\pi\varepsilon_0 R^2}$$

So, the meaning of 137 is the number of wavelengths of the electron that form the perimeter of the orbit. But this number must be an integer.

As the classical force $F_\varepsilon$ is wrong this number means nothing.