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Double Orbit of the Electron

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$$f = f_R\left(\frac{1}{n_1^{\,2}} - \frac{1}{n_2^{\,2}}\right)$$

f = frequency ; f_R = Rydberg frequency

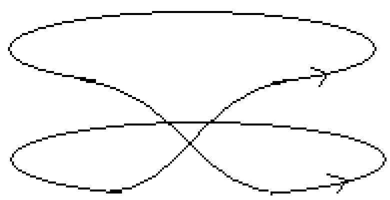
$$f_R = \frac{c}{2x_e 137^2} = 3.3\times 10^{15}\,Hz$$

Orbital frequency:

$$f_O = \frac{v}{Perimeter} = \frac{c}{x_e 137^2} = 6.6\times 10^{15}\,Hz$$

$$f_R = \frac{f_O}{2} \quad \Leftrightarrow \quad t_R = 2t_O$$

The Rydberg period is two times the orbital period.
That means that the electron has a double orbit.



Perimeter of one orbit:

$$P_1 = 137x_e + 0.036x_e$$

x_e = Compton wavelength of the electron

It's the reason why the inverse fine structure constant is not an integer.

It's why the giromagnetic ratio is two times the classical value:

$$\gamma_e = \frac{momentum}{angular..momentum} = \frac{q_e}{2m_e} g_e$$

(The orthodox magnetic moment is only a linear momentum)

$g_e = 2.00232$ -- Landé g factor ; $g_e = 2 + \frac{1}{137\pi}$

Angular momentum = $\frac{h}{4\pi} = spin$; $mvR = \frac{h}{2\pi}$ = angular momentum

$$\gamma_e = L^{-1} = 1.761 \times 10^{11}; \quad \frac{1}{\gamma_e} = 5.68 \times 10^{-12} m$$

$$\frac{5.68 \times 10^{-12}}{x_e} = 2.34 = \frac{m_e}{q_e x_e}$$