

## Electron Mass or Electric Dipole Moment

António Saraiva – 2010-04-24  
ajps2@hotmail.com

See Unified Absolute Relativity Theory at:

[www.wbabin.net/saraiva/saraiva305.pdf](http://www.wbabin.net/saraiva/saraiva305.pdf)  
[www.wbabin.net/saraiva/saraiva306.pdf](http://www.wbabin.net/saraiva/saraiva306.pdf)  
[www.wbabin.net/saraiva/saraiva307.pdf](http://www.wbabin.net/saraiva/saraiva307.pdf)  
[www.wbabin.net/saraiva/saraiva328.pdf](http://www.wbabin.net/saraiva/saraiva328.pdf)

All forces are electric.

The Planck scale and the Planck particle don't exist.

General formula of mass:

$$m = \frac{q_e k_B \sqrt{S + x^2}}{x^2 \left( 1 + \frac{\pi^3 \alpha^2}{2} \right)} ; \quad S = \frac{\pi \cdot x_e^2 \alpha^5}{2}$$

m – Mass or electric dipole moment;  $q_e$  - Electron charge;  $k_B$  - Boltzmann constant;  
x – Compton wavelength; S – Saraiva's constant;  $\alpha$  - Fine structure constant;  
 $x_e$  - Electron Compton wavelength.

For the electron:

$$m_e = \frac{h \sqrt{6\pi^5 \alpha}}{c \varepsilon_0 \left( 1 + \frac{\alpha}{2 \cdot \sqrt[4]{2}} \right)}$$

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

Electron Compton wavelength:

$$x_e = \frac{\varepsilon_0}{\sqrt{6\pi^5 \alpha}} \left( 1 + \frac{\alpha}{2 \cdot \sqrt[4]{2}} \right)$$

Magnetic and electric forces:

$$F_M = F_E \frac{\pi}{4\alpha^2}$$