the general science journal

Mass of the Cooper Pair

António Saraiva – 2009-10-12
ajps2@hotmail.com

See Unified Absolute Relativity Theory at:

www.wbabin.net/saraiva/saraiva105.pdf
www.wbabin.net/saraiva/saraiva223.pdf

The extra mass of the Cooper pair is its electric dipole moment.

Electric and unified forces:

$$\frac{q^2}{4\pi\varepsilon_0 R^2} = \frac{khf^4}{c^3}$$

q – Electron charge; ε_0 -- Vacuum permittivity; k – Saraiva's constant;
h – Planck's constant; c – Light speed; f – Compton frequency of the electron.

Cooper pair distance:

$$R = 1.45\times10^{-8}\, m$$

The two united electrons are a negative dipole, so they are a mass.

Mass of the dipole:

$$m = \frac{q.k_B}{R} \qquad \Leftrightarrow \qquad m = 1.525\times10^{-34}\, kg$$

k_B -- Boltzmann constant.

$$\frac{2m_e + m}{2m_e} = 1.0000837$$

m_e -- Electron mass; m_C -- Cooper pair mass

Experimental value:

$$\frac{m_C}{2m_e} = 1.00008421$$

This is a proof that the mass is the electric dipole moment.
This is also a proof of our unified force formula.

Binding energy of the Cooper pair:

$$E = \frac{q^2}{4\pi\varepsilon_0 R} \qquad \Leftrightarrow \qquad \text{E = 0.0993eV}$$

Distance of the Cooper pair:

$$R = \frac{\alpha^{-2} x_e}{\pi} = 1.45\times10^{-8}\, m$$

α -- Fine structure constant; x_e -- Electron Compton wavelength.

The Gravitomagnetism doesn't exist.