# FUNDAMENTAL CONSTANTS OF DIALECTICAL PHYSICS

**1. Fundamental Period of the Decimal Code of the Universe**

$$\Delta = 2\pi \lg e = 2{,}7287527...$$

**2. Elementary quantum of the rate of mass exchange, the electron exchange ("electric") charge**

$$e = 1.70269155 \times 10^{-9}\ g \cdot s^{-1}$$

**3. Fundamental frequency of exchange (interaction) of elementary particles at atomic and subatomic levels of the Universe**

$$\omega_e = e / m_e = 1.869162559 \times 10^{18}\ s^{-1}$$

where $m_e = 9.10938253 \times 10^{-28}\ g$ is the associated electron mass.

**4. Fundamental gravitational frequency of exchange (interaction) of elementary particles**

$$\omega_g = \sqrt{4\pi\varepsilon_0 G} = 9.158082264 \times 10^{-4}\ s^{-1};$$

where $G = 6.6742 \times 10^{-8}\ g^{-1} \cdot cm^3 \cdot s^{-2}$ is the gravitational constant, $\varepsilon_0 = 1 g \cdot cm^{-3}$ is the absolute unit density

**5. Fundamental wave radius of elementary particles at atomic and subatomic levels**

$$\lambda\!\!\!^{-}_e = c / \omega_e = 1.603886492 \times 10^{-8}\ cm$$

**6. Fundamental wave radius of elementary particles at the mega (gravitational) level**

$$\lambda\!\!\!^{-}_g = c / \omega_g = 327.4\, Mkm$$

**7. Scale correlation (the ratio) between the two characteristic speeds, oscillatory and wave, inherent in a wave process: ("fine-structure constant")**

$$\alpha = \upsilon_0 / c = 7.2973525376(50) \times 10^{-3}$$

where $\upsilon_0 = 2.187691263 \cdot 10^8\ cm \cdot s^{-1}$ is the first Bohr speed, *c* is the speed of light.

**8. Gravitational exchange charge of the neutron (fundamental graviton)**

$$q_{ng} = m_n \omega_g = 1.53392 \times 10^{-27}\ g \cdot s^{-1}$$

where $m_n = 1.674927211(84) \times 10^{-24}\ g$ is the associated neutron mass.

**9. Fundamental quantum of resistance**

$$R_e = h/e^2 = 2.285514295\times10^{-9}\ g^{-1}\cdot cm^2\cdot s = 25812.80567\ \Omega$$

**10. Fundamental quantum of specific electron resistance**

$$\rho_e = 1/\varepsilon_0\omega_e = 5.349991157\times10^{-19}\ g^{-1}\cdot cm^3\cdot s = 6.042328514\times10^{-6}\ \Omega\cdot cm$$

**11. Fundamental quantum of specific proton resistance**

$$\rho_p = \pi\lambda\!\!\!^{-3}_e / e = 7.612634088\times10^{-15}\ g^{-1}\cdot cm^3\cdot s = 8.597777961\times10^{-2}\ \Omega\cdot cm$$

**12. Electron total magnetic moment**

$$\mu_e = \frac{\upsilon_0}{c}e(r_0+\delta r_0) = -657.8913944\times10^{-22}\ g\cdot cm\cdot s^{-1} = -1855.877359\cdot10^{-26}\ J\cdot T^{-1}$$

**13. Electron proper („spin") magnetic moment**

$$\mu_s = \frac{r_e}{z_{p,q}}\sqrt{\frac{2Rh_e}{m_0c}} = -19.52506803\times10^{-26}\ g\cdot cm\cdot s^{-1} = -5.50792\cdot10^{-29}\ J\cdot T^{-1}$$

where $Z_{p,q}$ is the root of Bessel functions, $h_e = 2\pi m_e\upsilon_0 r_e$ is the orbital action of the electron.

**14. Radius of electron wave shell (electron radius)**

$$r_e = \sqrt{\frac{m_e}{4\pi\varepsilon_0}} = 4.17052597\cdot10^{-10}\ cm;$$

where $\varepsilon_0 = 1 g\cdot cm^{-3}$, $m_e = 9.10938253\cdot10^{-28}\ g$ is the associated electron mass.

**15. Radius of proton wave shell (proton radius)**

$$r_p = 0.528421703\times10^{-8}\ cm$$

**16. Basis innate speed of wave exchange of elementary particles**

$$c = 2.99792458\times10^{10}\ cm\cdot s^{-1}$$

**17. Magnetic flux quantum**

$$\Phi_0 = ch/2e = 5.833251078\times10^{-8}\ cm^3\cdot s^{-1} = 2.067833667\times10^{-15} Wb$$

**18. Conductance quantum**

$$G_0 = 2e^2/h = 8.750765017\times10^{8}\ g\cdot cm^{-2}\cdot s^{-1} = 7.7480917004\times10^{-5}\ S$$