Some theses to The physical vacuum

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1. The data on a photoeffect with known photon energy or gamma-quantum energy result in the summary table:

Table

i	*w=hv, J*	*2m·c², J*	*w-2m·c², J*	*r, м*	*Δ r, м*
e	$1{,}649459\cdot10^{-13}$	$1.637422\cdot10^{-13}$	$1{,}203700\cdot10^{-15}$	$1{,}398688\cdot10^{-15}$	$1{,}020672\cdot10^{-17}$
π	$4{,}487716\cdot10^{-11}$	$4.473438\cdot10^{-11}$	$1{,}427800\cdot10^{-13}$	$5{,}140876\cdot10^{-18}$	$1{,}635613\cdot10^{-20}$
p	$6{,}013007\cdot10^{-10}$	$3{,}010701\cdot10^{-10}$	$3{,}010701\cdot10^{-10}$	$3{,}836815\cdot10^{-19}$	$3{,}836815\cdot10^{-19}$

The following designations here are entered:
i = e, π, p - index of parameters of the tables appropriate to electron, meson and proton.
w=hv, j - photon energy or gamma-quantum energy,
$2m\cdot c^2$, J - energy of particles, born at a photoeffect,
$w-2m\cdot c^2$, J - energy of dipole,
r, м - shoulders of dipole,
Δ r, м - extreme of dipole deformation, at which excess the virtual charges of particles born real electrons and positrons, (+) and (-) mesons, protons and antiprotons.

2. The fundamental meaning has the formula

$$2m_i = \frac{1}{v}\frac{e_o^2}{(r_i + \Delta r_i)},$$

Where $v = 1{,}00000031\cdot 10^7\,[a^2 kg^{-1} м^{-1} s^2]$ is magnetic constant of vacuum. It establishes dependence a mass of a particular particle i= e,π,p from a magnetic constant of a vacuum, elementary charge of dipole and exited vacuum structure at distance $r_i + \Delta r_i$. Is remarkable, that the essential role is played just by a magnetic constant of a vacuum, instead of its deelectrical constant. The substitution of values from the table gives masses of electron, pion and proton:

m_e=9.109876·10^{-31} kg
m_π=2.488710·10^{-28} kg
m_p=1.672592·10^{-27} kg

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3. All three tabulated levels of an vacuum are equal in rights from the point of view of propagation of electromagnetic waves, that proves to be true by a parity:

$$\frac{1}{2\pi\alpha^{-1} r_i}\left(\frac{c}{v_{irb}}\right) \equiv 1,$$

Where $\alpha^{-1} = 137{,}036$ to within 0,002 percents for the tabulated data,

v_{irb} - frequency of red border of a photoeffect, c - speed of light.

v_{erb}	$v_{\pi rb}$	v_{prb}
2,48910·10^{20} Hz	6,772811·10^{22} Hz	9,074764·10^{23} Hz

4. Paradox of a wave - particle. The formula L.V. de Broil (1924)

$\lambda = \frac{h}{mV},\ where\ \ h = 2\pi e_o^2 \frac{r}{\Delta r_{rb}}\sqrt{\frac{\xi}{v}}$ for account of length of a wave of fluctuations of a particle with mass m and speed V. In the formula we see the basic parameters of a physical vacuum - charge making virtual dipole electron-positron, limit of deformation of dipole and its shoulder, magnetic and dielectric vacuum constants. The particle, moving in structure of an vacuum, tests cross fluctuations with frequency $v = c/\lambda$. Thus, the given frequency or given length of a wave will be formed only at a movement of a particle in an medium. The particle is gone on a screw trajectory with a step of the screw $\lambda = \frac{h}{mV}$.

5. Uncertainty of Geisenberg. It is caused also by interaction of a particle with a vacuum. Accuracy of measurement of the spatial characteristic of a particle limited by its Compton length of a wave $\lambda_c = 2\pi e_o^2 \frac{r}{\Delta r_{rb}}\sqrt{\frac{\xi}{v}}\frac{1}{mc} \cong \Delta x$. By virtue of a cross oscillatory movement of a particle there is a uncertainty of a trajectory of its movement. The uncertainty of Geisenberg is displayed at interaction of particles with structure of a vacuum, instead of exists in a separation from this interaction.

Such phenomenon as fluctuation of vacuum is well known which confirms told above. Paradox of a wave - particle and uncertainty of Geisenberg, discovered at the beginning of this century experimentally, are direct detection of an ether.

6.Growth of mass or resistance of structure of vacuum with increase of speed of particles? In process of increase of electron speed and taking into account, that speed of «tracking» of structure is limited by speed of light under the Einstein theory, we shall write in the other kind the equation of elastic force: $f = b\Delta r_e \frac{V}{c}$. It is clear, that at electron speed close to speed of light the dipole positive charge, which has stayed after flight, will have no enough time to return to an initial condition, and the forward neutral charge will have no enough time to be faced to electron by a positive charge and to neutralize brake effect stayed behind. And at V = c the brake effect will be maximal. Let's take a pulse of a particle and by dividing it on time of flight, we shall receive the force of a electron movement: $\frac{mV}{\Delta t}$. At equality of this force to force of braking from the party of a photon vacuum the electron will lose the energy of a movement and will stop. Let's receive the following expression for the description of this phenomenon: $\frac{mV}{\Delta t} = \frac{mV^2}{r} = b\Delta r_e \frac{V}{c}$, *where* $\Delta t = \frac{r}{V}$; $V_{\max} = \frac{br\Delta r_e}{m_e c} = 2{,}9962 \cdot 10^8 m/s$.

7. The dependence of time of life of particles on speed of their movement in structure of vacuum is possible to show as follows. The time of life of any particle is defined by the internal and external reasons. The external reasons are set by structure of vacuum and its polarization at the presence of a particle. The polarization of external environment derivates strong Coulomb force, taking apart a particle on radial directions. For a motionless particle they will be maximal and the time of life of a particle from the external reasons will be minimal. At a movement of particles with increase of this speed, the polarization of environment will decrease. The radial Coulomb forces aspire to zero at aspiration of speed of a particle to speed of light and external factor, shortening its time of life, considerably will decrease. The model can be expressed by $t_V = \frac{1}{1 - V/c} t_o$, where t_o - time of life motionless particle in vacuum, t_V - time of life of a particle at its speed equal to speed of light. The formula is very similar on Lorenz delay of time $t_V = \frac{1}{\sqrt{1-(V/c)^2}} t_o$.