The neutron cortex as the third space deformation

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Abstract

On site http://viXra.org/abs/1410.0040 it is described the first (Universal) and the second (local) space deformation, which change the geometric structure of the isotropic space. These geometric deformations created the dynamic space, the Universe, and the space holes (bubbles of empty space), the early form of matter. The Gosdas’s Theory of Dynamic Space describes how the neutron cortex is structured around the space holes with the electrically opposite elementary units (in short: units) of space at the light speed, defining on the one hand this elementary motion as quantum time in the units region and on the other the completion of the elementary phenomenon (i.e. the creation of a particle, photon etc.) as quantum time in the formations region. So, an electrical and geometric deformation of the neutron cortex occurs, as the third space deformation, resulting in the creation of surface electric charges (quarks) in the neutron cortex, to which the particles spin is due.

The inevitable end of the primary neutron is its breaking (beta decay), due to the growing space cohesive pressure, as the neutron is accelerated centrifugally to the Universe periphery. The presence of the proton and electron has result in induction of the electrical units of dynamic space, with the creation of the inverted electric (nuclear) field and the outer electric field.

Finally, the physical meaning of Planck’s constant is interpreted, as the product of two Nature entities: of the above quantum time in the formations region and of the energy talantonion (oscillator), which is the foundation of motion.
1. The Universe time - Quantum time $\tau_0$ in units region
Quantum time $\tau$ in formations region

In Gosdas’s Theory of Dynamic Space, time is not a physical entity, since it is identical to motion. Time is the motion phenomenon itself. Its measurement is done by chronometers that base their operation in motion, since there are no chronometers operating without motion. The problem is recycled, as we try to explain motion with motion again. How can we understand what motion is, if we connect it with another motion which we call time once more?

In the dynamic space takes place the minimal and fundamental motion of the electrically opposite elementary units (in short: units), which moves at $L_o$ (see above site), whenever it carries some variation - disturbance of the elastic (tense) dynamic space at the light speed.

The time that it takes the light to travel at a speed $C_o=3\cdot10^8 m/sec$ in the interval $L_o=0,558\cdot10^{-34}m$ is $\tau_0=L_o/C_o$, namely $\tau_0=0,186\cdot10^{-62}$ sec. This is the elementary motion as quantum time in the units region. This is the «click»-shift of unit, the transmission time of the electric force from unit to unit at the light speed.

Nature «understands» time, as a crowd of moving units, as a length traveled with «click»-shifts and as a volume occupied by the units. Therefore, time is reflected in space structures by the number of its units.

However, there is also the quantum time $\tau=10^{-5} sec$, which is the basic time in the formations region, namely the time required for the completion of an elementary phenomenon. We consider as elementary phenomena the structure of a neutron, the creation of a photon, the accumulation of forces in the motion formation of the particle or the accumulation of forces in the autonomous motion formation of the E/M wave etc.

The time $\tau=10^{-5} sec$ corresponding to the frequency $v=1/\tau=10^7Hz=100kHz$ of the fundamental E/M wave, as it is known from the oscillating Thomson’s circuit. It is the frequency threshold of the rotational oscillations of the electron spin, with which it is produced the weakest radiation that can be given by the dynamic space. At less rotational oscillations frequency no E/M wave is produced, but induction phenomena only.

On site http://viXra.org/abs/1507.0079 it is described that light motion is not independent of the particles motion, since the forces are accumulated in the motion formation at light speed. Therefore, light motion does not replace the concept of time, but it is the very essence of the phenomenon.

2. Structure of the neutron cortex - Planck’s length

The creation of matter was initiated by the Genesis of the primary neutron close to the Universe center (see site in abstract) in the form of a space hole (bubble of empty space), which resists to the weak attraction of space cohesive pressure prevailing in the region around the Universe center. Under the influence of the antigravity force the bubble acquires centrifugal accelerated motion towards the Universe periphery. So, it gradually crosses
areas of increasing cohesive pressure, because of which the **edge tensions** and the **cell distensions** on the elastic surface of the bubble (space hole) are increasing.

As the area around the bubble is distorted, a crush into its elastic surface and distension outwards is caused. This crush and distension on the area around the bubble changes locally the space cohesive pressure, resulting in the outflow of **negative units** outwards, mitigating the strong attractive forces of distension, after decreasing the **pairs** of negative and positive units. The outflow of these negative units outwards is caused by the **dynamic space** due to the **inertial phenomenon**, as reaction to the **geometric deformation** of the **particle cortex**, according to the **fundamental principle of antithesis** (opposition). So, a balanced allocation of the tensions on the inner and outer surface of the particle cortex follows, rendering it resistant to the attraction of the cohesive pressure. Outflow, however, can happen with the **positive units** too, by producing the **antineutron**, which has opposite **magnetic dipole moment**. This **space deformation** is done by the alteration of equality of the positive and negative units and is called **electric or quantitative deformation**, while the geometric deformations, namely that of the **first** and **second space deformation**, are created by the distortion of the cells only. Therefore, the **third space deformation**, which with the **neutron cortex** is created, is a mixed (electric and geometric deformation).

Thus, with the gradual outward motion of the neutron from the region close to the Universe center, the structure of the neutron cortex in the **large space area** is completed. During the structure completion of the neutron cortex, which is performed at time \( \tau = 10^{-5} \text{ sec} \), each unit is moved to a neighboring position at a distance \( L_0 = 0.558 \cdot 10^{-54} \text{ m} \), at every \( \tau_0 = 0.186 \cdot 10^{-62} \text{ sec} \) (see paragraph 1). Therefore, the ratio \( \tau/\tau_0 \) gives the number of the moving units that is structured the neutron, namely \( \tau/\tau_0 = 10^{5}/0.186 \cdot 10^{-62} = 10^{58} \Rightarrow \tau/\tau_0 = 10^{58} \). This **famous number** is the **crowd of units** of a neutron, which is equal to the number of the cells, since each cell contains eight units and each unit belongs to eight cells (see site in abstract, figure 3).

Therefore, if \( r_c \) is the cortex radius of the neutron, then \( 4\pi r_c^3/3 \) is the spherical volume of the neutron cortex and \( L_0^3 \) is the volume of the cell. So, \( 4\pi r_c^3/3L_0^3 = 10^{58} \) is the **crowd of cells** or units of the neutron, namely \( r_c = (3 \cdot 10^{58}/4\pi)^{1/3} = 10^{20}L_0 = 10^{20} \cdot 10^{-54} \cdot 10^{-54} = 10^{-34} \text{ m} \Rightarrow r_c \approx 10^{-34} \text{ m} \) is its cortex radius. We observe that **radius** \( r_c \approx 10^{-34} \text{ m} \) is identical with the fundamental Planck’s **length** \( l \approx 10^{-34} \text{ m} \), having radius \( r_c \) of the neutron cortex, corresponding to its **natural scale**. It is noted that the **size** \( r_c/L_0 \approx 10^{20} \), expressing the **ratio** of the third to the second deformation of space, is maintained constant in all the **extent** (dimension or length) **ratios** of all **five space deformations**.

### 3. Talantonion of energy \( \varepsilon_\tau \) and force \( f_\tau \)

**Planck's constant** \( h \)

We define **quantum energy** \( \Delta E = h \nu \) as **talantonion** (oscillator) of **energy** \( \Delta E = \varepsilon_\tau \), which corresponds to the **elementary energy** of a fundamental E/M wave of frequency \( \nu = \nu_\tau = 10^6 \text{ Hz} \) (see paragraph 1), which is structured in time \( \tau = 1/\nu_\tau = 1/10^6 = 10^{-5} \text{ sec} \), wherein \( \tau = 10^{-5} \text{ sec} \) is the quantum time for the formation of a photon or any other **elementary formation**. Therefore, for \( h = 6.626 \cdot 10^{-34} \text{ Joule} \cdot \text{sec} \) the **Planck's constant** and \( \tau = 10^{-5} \text{ sec} \), it is \( \varepsilon_\tau = \Delta E = \hbar \nu_\tau = 6.626 \cdot 10^{-34} \cdot 10^5 = 6.626 \cdot 10^{-29} \text{ Joule} \Rightarrow \varepsilon_\tau = 6.626 \cdot 10^{-29} \text{ Joule} \).

Consequently, the quantum energy \( \Delta E = h \nu \), which is identical with the above **energy talantonion** can be written as \( \varepsilon_\tau = \hbar \nu_\tau \) or \( \varepsilon_\tau = h/\tau \) and, therefore, \( h = \varepsilon_\tau \cdot \tau \), which defines, clearly,
the Planck’s constant $h$, equal to the product of two Nature entities: the energy talantonion $\varepsilon_{\tau} = 6,626 \cdot 10^{-29}$ Joule, which is the foundation of motion, and the quantum time $\tau = 10^{-5}$ sec, which is the quantum time in the formations region.

It is noted that energy talantonion $\varepsilon_{\tau} = 6,626 \cdot 10^{-29}$ Joule is the result of displacement at $L_0$ of force talantonion $f_\tau = \varepsilon_{\tau}/L_0$ from unit to unit at the light speed, wherein $L_0 = 0,558 \cdot 10^{-54}$ m the quantum dipole length, so $f_\tau = 11,87 \cdot 10^{-15}$ N.

On site [http://viXra.org/abs/1507.0079](http://viXra.org/abs/1507.0079) it is described how motion force $F$ is accumulated as $F_\tau = FS_\tau/L_0$ ($S_\tau$ is the interval covered by force $F$ at light speed per time $\tau_0 = 0,186 \cdot 10^{-62}$ sec with «click»-shifts at each $L_0 = 0,558 \cdot 10^{-54}$ m) upon pairs of vertical meridians of the particle’s spherical zone, moving at light speed as quanta of force talantonia $f_\tau = 11,87 \cdot 10^{-15}$ N per $\tau = 10^{-5}$ sec.

4. Electrical charging of particle cortex - Quarks

In the above paragraph 3 it is described the structure of the neutron cortex, which interconnects the particle spherical structure with the cubic one of ambient space, resulting in condensation of the units in the inner cortex region.

The elision of the negative units and their motion towards the cortex periphery repulsed them as homonymous to the centers of two opposite seats of the initial cube. The result is the appearance of two negative poles on opposite spherical regions of the cortex (Figure 1), in the place of two opposite seats of the initial cube, while on its remaining four seats the surplus of positive units is condensed, constituting the positive zone of the cortex.

These electrically charged regions of the cortex are the particle quarks. Here, it can be calculated the neutron electrical charge $q_n$, the magnetic dipole moment of which is $\mu = 1,913 \mu_n$, wherein $\mu_n$ is the unit of nuclear magneton. Respectively, the magnetic dipole moment of the proton with electrical charge $e = +1,6.10^{-19}Cb$, is $\mu' = 2,792 \mu_n$. These magnetic moments $\mu$ and $\mu'$ must be proportional to the electrical charges $q_n$ (neutron) and $e$ (proton), that is $q_n/e = \mu/\mu' = 1,913/2,792 \Rightarrow q_n = -0,685e$, which equals to the electrical charge of the two negative poles ($d$ quarks) of the neutron cortex. So, the neutron quarks are the two $d$ quarks ($-1/3e$ each) and the intermediate $u$ quark ($+2/3e$). Therefore, the total charge of the neutron is zero ($-1/3e + 2/3e - 1/3e = 0$).

So, macroscopically, the neutron is an electrically neutral particle. However, on the scale of the atom nucleus it behaves as a negatively charged particle with magnetic dipole moment. The above negative charge $q_n = -0,685e$ creates induction close to the nucleus region and inverse electric field of positive potential as a cloud of positive electrical units, affecting the nucleus field and the cohesive pressure of proximal space, forming the architectural structure of the nuclei (see [http://viXra.org/abs/1503.0210](http://viXra.org/abs/1503.0210)).
5. The spin as an opposite structure of particles cortex

These electrical charges concentrations in two negative poles and one positive zone in the particle cortex creates inverse electric fields and thus local reductions of cohesive pressure, since the creation of these electric fields is done at the expense of cohesive pressure $P_0$ of the proximal space (see site in paragraph 4).

However, there is a difference of charging between each of the negative poles and the positive zone of the neutron cortex. Therefore, these electric fields are also different, resulting in a differential pressure $\Delta P$ between the poles and the zone and in an accumulation of peripheral forces, which are vertical to the radial forces of cortex, according to the principle of spatial or right antithesis (see site in paragraph 1). These peripheral forces ensure the rotation of the particle. Therefore, the structure of the particle rotational motion is in spatial or right antithesis with its cortex structure. So, yet again the antithesis (opposition) principle, as the primary creative element and foundation of dynamic space, confirms its basic role in the creation of the fundamental Universal structures.

Respectively, the difference of electrical charging between the positive poles and the negative zone of the proton cortex creates unequal electric fields, which cause a difference of cohesive pressure $\Delta P$ of the proximal space between the poles and the zone, which is the cause of the proton rotational motion.
6. Dynamics of the particle spin

The linear motion of the particles (see site in paragraph 1) is created from the pressure difference $\Delta P$, which ensures the accumulation of the motion forces and is maintained as a harmonic oscillation through the elastic dynamic space. The same applies in the rotational motion of the particles, wherein the motion forces are created from a pressure difference $\Delta P$. There is, however, a basic difference. The linear motion is structured by an external cause, namely by an external force, while the rotational motion is due to the structure of the particle cortex, the surface electrical charges of which ensure the pressure difference $\Delta P$ and the accumulation of the peripheral forces.

![Diagram showing pressure difference $\Delta P$ on neutron and proton](image)

*Figure 2: The same pressure difference $\Delta P=(P_0-\Delta P)-(P_0-2\Delta P)$ is created by the surface electrical charges of neutron and proton and installs a stable accumulated force $F/2$ in an antidiametrical pair of quadrants irrespective of the spin.*

The excess of positive units ($+2/3e$) on the spherical zone of neutron repels the positive units of space and attracts the negative ones (*Figure 2*), reducing the pairs of oppositely charged units, resulting the reduction of cohesive pressure at $P_{0}-2\Delta P$. For the same reason the cohesive pressure is reduced at $P_{0}-\Delta P$, due to the charge $-1/3e$, on both sides of the negative poles, since now the reduction of the pairs of oppositely charged units is smaller. It is noted that the in double reduction of cohesive pressure ($2\Delta P$), is due to the fact that $u$ charge is always double the $d$ charge. Therefore, the pressure difference is $(P_{0}-\Delta P)-(P_{0}-2\Delta P)=\Delta P$. Respectively, the positive charge $+2/3e$ of proton poles (*Figure 2*) creates a reduction of pressure by $P_{0}-2\Delta P$ and the negative $-1/3e$ of zone by $P_{0}-\Delta P$. Thus, the pressure difference is $(P_{0}-\Delta P)-(P_{0}-2\Delta P)=\Delta P$, namely the same with the neutron.

The spin of the particle has two opposite motion arrows, which appear that they balance each other. However, the pressure difference $\Delta P$ of the particle spin is due to the cortex structure and not to an external force. It always installs a stable accumulated force $F/2$ (see site in paragraph 1) in an antidiametrical pair of quadrants of the vertical to spin axis.
meridian and one of the two pressures difference $\Delta P$ is enforced (the way of enforcement is due to an external cause and will be developed at a next site) without rotation moment, with a smooth rotary motion only.

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