

# ***A New Subatomic Causal Physics on the Fundamental Phenomena*** (Communication: “**Research method on the universal subquantum dual fluid**”)

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**Abstract.** The paper<sup>2</sup>, presents a new method used by the author for researching the subquantum environment, as well as the results obtained, so as: *discovery the new fundamental subparticles named ‘Gravitons’ and new subquantum particles named ‘Cuantoms’, which together composed both the Subquantum Universal Dual Fluid and the Subatomic Particles, as well as discovery the new elementary particles named ‘Proneutrons’ located inside Positrons, explaining the physics effects which cause the gravitational and inertial-relativistic masses, gravitational and electric interactions, universal synchronizing of the electric and gravitational waves, electric neutrality for Neutrons, Proneutrons and Photons, nuclear forces and black hole versus quantum gravity, heating and temperature, radioactivity and nuclear disintegration, photon and electric superconductivities.*

**Keywords:** *particle, effect, fluid, subatomic, quantum, discovery.*

## **I. Introduction**

The physics of the 'Subquantum Environment' is a field of research approached within the ICPTTc<sup>3</sup> starting in 1974, with the aim of identifying the physical elements that cause the excessive attenuation of the energy of the digital optical signals transmitted through the optical fibres patented for the first time in 1970 (over 20 dB/km– patent no.3,711,262 by R. Maurer, D. Keck, and P.Schultz of Corning Glass company, USA), having as study material the energies of photons and particles of the Silicon atom, with which photons interact, passing through the optical fibre built of Silica.

The research started from the structural equation of the Planck constant, since all energies in the Universe have the subquantum components expressed by the constant  $h$  and the quantum components expressed by the frequency  $\nu_i$ , according to the experimentally validated equation [1+2]:

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<sup>1</sup> The authorized Laboratory to continue the fundamental research started within ICPTTc, after the separation in 1990 year.

<sup>2</sup> The report has been communicated in power point format. This paper is concordant with the real orally communication.

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$$E_i = h \cdot \nu_i \rightarrow h = E_i / \nu_i \quad [\mathbf{J.s} \equiv \mathbf{J/Hz}] \quad (1)$$

The constant **h** (in reality '*spectral energy density*'), after its publication in 1900, has remained expressed in (**J.s**), instead of (**kg.(m/s)<sup>2</sup>/Hz**), units of measurement, that inform us the subquantum medium is composed of subquantum particles, with the mass **m<sub>c</sub>** expressed in **kg** and *elementary energy quantum of motion*, **h<sub>c</sub>**, at the kinetic velocity **c** = 2.99792458 x 10<sup>8</sup> m/s.

Based on this observation, the author has defined the *new research method* used in the subquantum environment in the last 50 years, consisting of "*dimensional-structural analysis, by using primary natural units of measurement*", which rigorously indicate all the physical components that participate in the researched phenomenon, i.e. the use **kg, m, s, rad., Hz**, instead of the composite units of measurement as **J, W, N, C, A, V, F, H, Ω**, that are *inapplicable* in the subquantum environment.

The new research method allowed the author **to discover**:

- *the subquantum particles* named '**Cuantoms**' [3-18], each having the energy **h<sub>c</sub>** the mass **m<sub>c</sub>**, and the *dynamic size* **r<sub>c</sub>**, from which are constituted both the '**Cuantom Universal Fluid**' (CUF) and all *Quantum Particles* (QP – i.e. *the elementary particles including photons*);
- *the subparticles* named '**Gravitons**' [3-18], each having the energy **h<sub>g</sub>**, and the mass **m<sub>g</sub>**, from which are constituted both the '**Graviton Universal Fluid**' (GUF) and *all Cuantoms*;
- *the particles* named '**Protoneutron**' [3+4+7+13], each having energy **hν<sub>pn</sub>**, the mass **m<sub>pn</sub>**, and the *dynamic size* **r<sub>pn</sub>**, being situated *inner Positron*.
- '*the elementary dielectric charge*', indexed ± **e<sub>d</sub>** [3+4+19], which causes '*the electric neutrality effect*' for Neutrons, Proneutrons and Photons;
- '*The Cuantoms mass flow of the spin Compton wave*' generated by the *Electron and Positron*, named '**elementary electric charge**', which causes the electric interactions [3+4+13];
- **Explaining the physics effects** which cause the *gravitational and inertial-relativistic masses, gravitational and electric interactions, universal sinchronizing of the electric and gravitational waves, electric neutrality, nuclear forces and black hole versus quantum gravity, heating and temperature, radioactivity and nuclear dezintegration, photonic and electric superconductivities.*

The characteristics of the discovered Cuantoms, expressed through the simplest original equations published first time in 1982, and ulterior by self-citations or by quoting with or without indicating the source [3-18]:

$$m_c = \mathbf{h.(1.Hz)/c^2} = \mathbf{h_c/c^2} = \mathbf{7.372496378 \times 10^{-51} \text{ kg}}; \quad (2)$$

$$\mathbf{h_c} = m_c \cdot c^2 = \mathbf{6.6260693 \times 10^{-34} \text{ kg.(m/s)^2}} \quad (3)$$

The author has *digitized the analogical equations* since the produs (**h.ν<sub>i</sub>**) for the Quantum Particle (QP) is equivalent with the digital produs (**n<sub>i</sub>.h<sub>c</sub>**), where **n<sub>i</sub>** is the number of free Cuantoms received and emitted by the QP, per second, from and into the CUF, equal with the number of pulsation executed by

the kinetic clusters of the QP that generate the Compton's waves [2+7+13] at fequence  $\nu_i$  and length  $\lambda_i$ , as well equal with number of Cuantoms which consitute the kinetic cluster:

- *the digitizing method*  $\rightarrow n_i/(1.s) = c/\lambda_i = \nu_i$  (4)

- *the Compton wave energy (CWE)*  $\rightarrow E_{wi} = h.\nu_i = n_i.h_c = n_i.m_c.c^2 \text{ kg.(m/s)}^2$  (5)

- *the gravitational mass transmitted by the QP Compton waves*  $\rightarrow m_i = n_i.m_c \text{ kg}$  (6)

In the equation (5), the constants  $h$ ,  $h_c$  and  $m_c.c^2$  express *the subquantum components of any energy*, while the constant  $\nu_i$  and the number  $n_i$  express *the quantum components of the same energies*.

- *The pulsing motion that generates the gravitational waves effect is caused by the kinetic reception-emitting of gravitons by the pulsating Cuantoms*, together with the effect of self-egalization of pressures at kinetic speed  $c$ , in the GUF.

- To the reception of one Graviton, by the Cuantom, and one Cuantom, by the subatomic particle, their inner energies and sizes increase with the values  $h_g$  and  $h_c$ .

- Upon the emission of one Graviton, and one Cuantom, the two energies and sizes decrease with the same values, appearing *the effect of cyclic pulsation of the Cuantom and Subatomic particle*.

Due to '*the Magnus effect*' exercised by the *Gravitonic Fluid on Cuantoms* causes them a *supplementary rotation move around own axes*, either right-gyrated (+) or left-gyrated (-), that expresses the '*polarization effect of both, the kinetic clusters speed and the Compton waves*'.

## II. Explaining the Physics Effects that generate Electrical Neutrality

In 1979, in ICPTTc, the original equation of the electrical neutrality of the hydrogen atom [7+13+19] was developed and published, later used as a model for the electrical neutrality as shown below.

- *The Cuantoms mass flow of the spin Compton wave* generated by QPs inner the Hydrogen atom:  

$$n_H.c / \pm \pi.k_H = \pm e_d = \pm 1.60217662 \times 10^{-19} \text{ (kg.m/s)/rad}$$
 (7)

where:  $e_d$  is '*the dipolar electric charge*', which causes the successive alternating senses of interaction, i.e. '*the electrical neutrality effect*';  $m_H = 1.6735328363 \times 10^{-27} \text{ kg}$ ;  $k_H = m_H.c/\pi.e_d = 0.997600295$ .

- *The Cuantoms mass flow of the spin Compton wave* generated by the Neutron:  

$$n_n.m_c.c / \pm \pi.k_n = \pm e_d; \quad k_n = n_n.m_c.c/\pi.e_d = 0.9984316423$$
 (8)

where:  $n_n = m_n/m_c = 2.271859088 \times 10^{23}$ ;  $m_n = 1.674927471 \times 10^{-27} \text{ kg}$ .

- *The Cuantoms mass flow of the spin Compton wave* generated by the Protoneutron [7+12+13]:  

$$n_{pn}.m_c.c / \pm \pi.k_{pn} = \pm e_d; \quad k_{pn} = n_{pn}.m_c.c/\pi.e_d = 0.995684627$$
 (9)

where:  $n_{pn} = m_{pn}/m_c = 2.2674962283 \times 10^{23}$ ;  $m_{pn} = m_p - m_e = 1.6717109597 \times 10^{-27} \text{ kg}$ .

- *The Cuantoms mass flow of the spin Compton wave* generated by the Photons,  

$$n_\gamma.m_c.c / (\pm \pi).k_\gamma = \pm e_d / (\lambda_\gamma/\lambda_n)$$
 (10)

$$k_\gamma = (n_\gamma \cdot m_e \cdot c) \cdot (\lambda_\gamma / \lambda_n) / \pi \cdot e \quad (11)$$

where:  $k_H$ ,  $k_n$ ,  $k_{pn}$  and  $k_\gamma$  express the "reduction effect of the bound Cuantom speed  $v_c$  caused by the recoil", in the process of reciprocal colliding of the free Cuantom - bound Cuantom; the ratio  $(\lambda_\gamma / \lambda_n)$  expresses the 'transparency factor' of the Photons toward the intercepted Cuantoms of the Universal Subquantum Dual Fluid.

### III. Explaining the Physical Effects that generate the Electricity

In 1989, in the research Institute ICPTTc, was carried out, an experiment on the same effect with the one experimented by Ampère in 1827 year <sup>4</sup>, which is demonstrating that two mobile very flexible balls, having an additional rotational movement around their own axes, after mutual collision possess an inertial energy dependent on the senses of rotation before the collision: stronger for the opposite rotation senses (like as the repulsive electrostatic force), weaker for the same senses (like as the attractive electrostatic force), compared to the absence of rotaton moves [9].

The two experiments are demonstrating the existence of "polarization effect" on the kinetic clusters speed,  $v_e$ , caused by the 'dual Magnus-effect' in the Dual Universal Fluid, where both, the electron and the Cuantoms perform rotations around the own axes, either right-gyrated (+) or left-gyrated (-), as is shown in the equation for the angular velocity in the quantum cluster of the Electron:

$$\pm v_e = (\pm 2\pi) r_e v_e = \pm 2.1876912633 \times 10^6 \text{ m.rad./s} \quad (12)$$

- **The Cuantoms mass flow of the Compton spin wave generated by Electron** →

$$e = (4\pi/3)(n_e m_e c)(\lambda_e / \pm 2\pi r_e \cdot k_e) = (4\pi/3)(n_e m_e c^2) / \pm 2\pi r_e v_e \cdot k_e = \pm 1.60217662 \times 10^{-19} \text{ (kg.m.rad/s)/rad} \quad (13)$$

$$k_e = (4\pi/3)(n_e m_e c) / \alpha \cdot e = 0.978413025 \quad (14)$$

where from measurements:  $\lambda_e = 2.4263102367 \times 10^{-12}$  m;  $r_e = 2.8179403227 \times 10^{-15}$  m;  $m_e = 9.10938356$

$\times 10^{-31}$  kg;  $n_e = m_e / m_e = 1.23558909024 \times 10^{20}$ ;  $\alpha = v_e / c = 2\pi r_e / \lambda_e = 7.2973525682 \times 10^{-3}$  rad ;  $k_e$

expresses the 'reduction effect of the bound Cuantom velocity  $v_c$  caused by the recoil' in the process of 'reduction effect of the bound Cuantom velocity  $v_c$  caused by the recoil' in the process of reciprocal colliding of the free Cuantom-bound Cuantom.

- **The energy of the Compton wave generated by the Electron** →

$$E_{we} = h \cdot v_e = n_e \cdot m_e \cdot c^2 = n_e h c = 8.187098938 \times 10^{-14} \text{ kg.(m/s)}^2 \quad (15)$$

• **The electrostatic interaction between two electrons** located at the mutual distance R [7], where the factor  $(4\pi r_e^2 / 4\pi R^2)$  expresses the electrostatic waves (EW) attenuation passing distance R into the Dual Universal Fluid, and  $(n_e m_e c^2 / r_e)$  expresses 'the force of the EW at the time of emission by the

<sup>4</sup> Two paralel conductors crossed by electric currents, reciprocal themselves attract or repulse depending of senses of the two electric currents: attracting for the same senses, repulsive for the opposite senses [9].

$$\text{transmitting Electron} \rightarrow \mathbf{F}_{e-e} = (n_e m_e c^2 / r_e) (4\pi r_e^2 / 4\pi R^2) = (\mathbf{n}_e \cdot \mathbf{m}_e c^2 \cdot \mathbf{r}_e) / R^2 \quad (\mathbf{kg} \cdot \mathbf{m} / \mathbf{s}^2) \quad (16)$$

- For  $R = \lambda_e$  the force becomes:  $\mathbf{F}_{e\lambda_e} = \mathbf{n}_e \cdot \mathbf{m}_e c^2 \cdot \mathbf{r}_e / \lambda_e^2 = 1.3907125623 \times 10^{-4} \mathbf{kg} \cdot \mathbf{m} / \mathbf{s}^2 \quad (17)$

- *The Coulomb's constant*  $\rightarrow = e^2 / 4\pi\epsilon_0 = n_e \cdot m_e c^2 \cdot r_e = 2.3070772558 \times 10^{-28} \mathbf{kg} \cdot \mathbf{m}^3 / \mathbf{s}^2 \quad (18)$

where  $\epsilon_0 = 8,854187817 \times 10^{-12} \mathbf{kg} / \mathbf{m} \cdot \mathbf{rad}$  is 'the mass angular density of the  $n_e$  constituent Cuantoms of the Electron kinetic cluster'.

The sinphased rotation of both Electron and its component Cuantom, generates the '*phase duplication effect*' ( $2\pi$ ) for each reception-emission of Cuantoms, resulting the same interaction sense from all successive cycles.

The cospherical factor ( $4\pi/3$ ) and spin velocity ( $2\pi r_e v_e$ ) in the equation (12+13) compared with the equations (8+9+10) prove that the Electron is the single QP having cospherical level at the dynamic radial distance  $r_e$ , where the component Cuantoms, due to the perform simultaneously two rotation moves: the one around own axes, the other around axis of the Electron, causing '*the spin synchronism effect*' for Electron and its component Cuantoms, i.e. the frequency  $v_e$  of the spin electrostatic waves is equal to the gravitational waves  $v_g$  generated by Cuantoms, resulting  $n_g = n_e$ ;  $\lambda_g = \lambda_e$ .

### III. Explaining the Physical Effects that generate the Subquantum Gravity

*Due to the kinetic pressure deficit between Cuantoms, caused by the mutual shielding against the free Gravitons intercepted from opposite directions, and the self-equalizing effect at the speed  $c$ , in the 'Gravitonic Universal Fluid', the 'effect of universal attraction' appears, being exercised only between the Cuantoms from which is composed the entire matter of the Universe.*

- *The mass of Graviton* is given by:  $\mathbf{m}_g = m_e / n_g = 5.9667872266 \times 10^{-71} \mathbf{kg} \quad (19)$

- *The cluster gravitational energy* for a Cuantom inner the electron is given by:

$$E_{cg} = G \cdot m_e (n_e m_e) / r_e = h_c / n_g = 5.3626803228 \times 10^{-54} \mathbf{kg}(\mathbf{m}/\mathbf{s})^2 \quad (20)$$

- *The gravitational waves energy of the electron* is given by:

$$E_{eg} = n_e \cdot E_{cg} = n_e \cdot (h_c / n_g) = h_c \quad \mathbf{kg}(\mathbf{m}/\mathbf{s})^2 \quad (21)$$

- *The Newton's constant* ( $G m_e^2$ ) for the gravitational interaction between two electrons located at the mutual distance  $R$ , where the factor ( $\pi r_e^2 / \pi R^2$ ) expresses the gravitational waves attenuation and ( $h_c / r_e$ ) expresses 'the attraction force of the gravitational waves at the time of emission of the transmitting Cuantom' results from the equation:

$$\mathbf{F}_{g-e} = (G m_e^2) / R^2 = (h_c / r_e) \cdot (\pi r_e^2 / \pi R^2) = (h_c r_e) / R^2 = 5.53821214 \times 10^{-71} / R^2 \mathbf{kg} \cdot \mathbf{m} / \mathbf{s}^2 \quad (22)$$

- *The energy of the gravitational waves* generated by  $n_e$  Cuantoms, having radius  $r_e$  results  $\rightarrow$

$$\mathbf{E}_{ge} = n_g m_g c^2 = G \cdot (n_e m_e)^2 / r_e = h_c \quad (23)$$

- *The Cuantom radius results*  $\rightarrow r_c = G.(n_e m_c)^2 / h_c = 0,835821645 \times 10^{-37} \text{ m}$  (24)

- *The Newtonian constant of gravitation results*  $\rightarrow$

$$G = h_c r_c / (n_e m_c)^2 = 6.6740831 \times 10^{-11} \text{ m(m/s)}^2/\text{kg} \quad (25)$$

#### IV. Explaining the relativistic effect that generate the inertial mobile masses

In 1986, in ICPTTC, the original equation of inertial - relativistic mobile masses was elaborated [6].

From the equation of the energy of a moving quantum particle,  $E_v$ , given by the subquantum equations, is determining the '*inertial mass*', named '*relativistic moving mass*', as follows:

- *The energy of quantum particle whitout moving*  $\rightarrow E_o = n_o m_c c^2$  (26)

- *The energy added for accelerating the particle to velocity v resulted from the equation:*

$$\Delta E_v = (n_o + \Delta n_v).m_c v^2/2 = n_v.m_c v^2/2 \quad \text{kg(m/s)}^2 \quad (27)$$

where  $\Delta n_v$  is the number of free Cuantoms absorbed by particle during accelerating up to speed v.

- *The Inertial energy at speed v resulted*  $\rightarrow$

$$E_v = E_o + \Delta E_v = n_v m_c c^2 = n_o m_c c^2 + n_v.m_c v^2/2 \quad \text{kg(m/s)}^2 \quad (28)$$

- *The Inertial mass at speed v resulted*  $\rightarrow m_v = n_v m_c = n_o m_c / (1 - v^2/2c^2) \quad \text{kg}$  (29)

- *The inertial number of Cuantoms which compose the inertial mass resulted from equation:*

$$n_v = n_o + \Delta n_v = n_o / (1 - v^2/2c^2); \quad (30)$$

#### V. Explaining the physics effects that generate the nuclear forces

At reciprocal distances smaller than  $\lambda_e$ , the repulsive forces between similar electric particles are missing, because the **ESW** that transmit the electrostatic interaction are also missing.

The repulsive forces become attractive, similar to Newtonian gravity, but the kinetic energy deficit between nucleons caused by screening each other against the pressure of the Cuantoms in the Universal Dual Fluid is  $(n_e)^2$  times greater than the energy deficit at the pressure of the gravitons.

- *The equivalence equation of electric interaction constant to Quantum gravitation constant*  $\rightarrow$

$$G_Q = (n_e h_c) r_c / (n_e m_c)^2 = r_c c^2 / (n_e m_c) = 2.78025217887 \times 10^{32} \text{ (m/kg).(m/s)}^2 \quad (31)$$

- *The Quantum gravitation Force constant is given by:*

$$F_{Qu} = G_Q.(m_c / \lambda_e)^2 = 2.5669698125 \times 10^{-45} \text{ kg.m./s}^2 \quad (32)$$

- *The Quantum gravity for two Neutrons at reciprocal distance  $\lambda_e$*   $\rightarrow$

$$F_{Qn-n} = n_n^2 . F_{Qu} = 1.3249013509 \times 10^2 \text{ kg.m./s}^2 \quad (33)$$

- *The Quantum gravity for two Protons at distance  $\lambda_e$ , having  $n_p = n_{pn} + n_e = 2.2687048 \times 10^{23}$*   $\rightarrow$

$$F_{Qp-p} = n_p^2 . F_{Qu} = 1.32122489 \times 10^2 \text{ kg.m./s}^2 \quad (34)$$

- *The Quantum gravity* for one Neutron and one Proton at reciprocal distance  $\lambda_e \rightarrow$

$$\mathbf{F}_{Qn-p} = n_n \cdot n_p \cdot F_{Qu} = 1.32122489 \times 10^2 \quad \mathbf{kg.m./s^2} \quad (35)$$

- *The Quantum gravity* for one Neutron and one Electron at reciprocal distance  $\lambda_e \rightarrow$

$$\mathbf{F}_{Qn-e} = n_n \cdot n_e \cdot F_{Qu} = 7.17762982 \times 10^{-2} \quad \mathbf{kg.m./s^2} \quad (36)$$

- *The Quantum gravity* for one Proton and one Electron at reciprocal distance  $\lambda_e \rightarrow$

$$\mathbf{F}_{Qp-e} = n_p \cdot n_e \cdot F_{Qu} = 7.16766428 \times 10^{-2} \quad \mathbf{kg.m./s^2} \quad (37)$$

- *The Quantum gravity* for two Electrons at reciprocal distance  $\lambda_e \rightarrow$

$$\mathbf{F}_{Qe-e} = n_e^2 \cdot F_{Qu} = n_e h c r_e / \lambda_e^2 = 3.91894778 \times 10^{-5} \quad \mathbf{kg.m./s^2} \quad (38)$$

The equation (33), (34) and (35) prove that '*strong nuclear forces effect*' are in essence '*Quantum Gravity*' from interaction between hard nucleons (neutrons and protons), which is about  $10^6$  times stronger than the equivalent electrical interactions at the some reciprocal distance  $\lambda_e$ , being concordant with the experimental measurements which validate the equations (17) and (33+34+35).

## VI. Explaining the quantum gravity effect for the thermal clusters

In 2007, within EuroTehnoConsult Lab., the concept of "Thermon" [3-13] was defined as being, both the photon in the background radiation discovered by Penzias and Wilson in 1965, [21], and the photon (example – ultra-violet radiation), absorbed, versus quantum gravity (QG), in the thermal cluster of the mole of matter, having the energy  $E_{tu}$  or  $E_{uv}$ , which express molar thermo-energetic density, i.e. the temperature of the each mole of matter.

- *The number of Cuantoms which compose Thermons* of the universal, omni-directional thermal fluid, discovered by Penzias and Wilson, in the 1965 year is resulting from the equation:

$$\mathbf{n_{tu}} = h \cdot v_{tu} / h c = 4.08 \times 10^9 \quad (39)$$

- *The energy, universal temperature, mass, wavelength of the Thermons*  $\rightarrow$

$$\mathbf{E_{tu}} = (2/3)RT_{tu} = N_a \cdot (8\pi/3) \cdot k_t \cdot n_{tu} \cdot m_c c^2 = 13.536336529 \quad \mathbf{kg.(m/s)^2} \quad (40)$$

$$\mathbf{T_{tu}} = N_a \cdot (3/2) \cdot n_{tu} \cdot m_c c^2 = 2.4420714196 \quad \mathbf{^{\circ}K/mol} \quad (41)$$

where:  $\mathbf{R} = (8\pi/3) \cdot k_t = 8.31445986 \quad \mathbf{J/^{\circ}K.kmol}$  is the Molar gas constant applied to the universal, thermal fluid;  $k_t = 0.9924655394$  is the refractive index for thermons passing from  $c$  to  $v_c$  kinetic speeds;  $N_a = 6.022140857 \times 10^{23} \quad \mathbf{mol^{-1}}$  is the Avogadro's constant:

- *The QG attraction of UV thermons* around atomic particles, where  $v_{uv} = 10^{16} \quad \mathbf{Hz} \rightarrow$

$$\text{(UV photon } \rightarrow\leftarrow \text{ electron)} \quad \mathbf{F_{Quv-e}} = n_{uv} \cdot n_e \cdot F_{Qu} = 3.17171989 \times 10^{-9} \quad \mathbf{kg.m/s^2} \quad (42)$$

$$\text{(UV photon } \rightarrow\leftarrow \text{ proton)} \quad \mathbf{F_{Quv-p}} = n_{uv} \cdot n_p \cdot F_{Qu} = 5.82376609 \times 10^{-6} \quad \mathbf{kg.m/s^2} \quad (43)$$

$$\text{(UV photon } \rightarrow\leftarrow \text{ neutron)} \quad \mathbf{F_{Quv-n}} = n_{uv} \cdot n_n \cdot F_{Qu} = 5.8317937 \times 10^{-6} \quad \mathbf{kg.m/s^2} \quad (44)$$

The equations (42, 43 and 44), prove that electro-weak nuclear interactions are, in reality, quantum gravity effect between the electrons, protons and neutrons, on the one part, and the thermons belonging

to the thermal clusters of the atomic particles, on the other part, as well they prove that each electron and atomical nucleus are permanently surrounded by a thermal cluster compounded of thermons bound by the QG of the electron and nucleons.

The experiments are demonstrating the some colored non-radioactive materials, such as *Agates*; self-change their color, when temperature is increasing, because the Cuantoms number inner their atom thermal clusters of the quantum particles is increasing, too.

## VII. Explaining the photonic and electric super-conductivity effects

In the annual scientific session of the ICPTTC – 1975, the author has presented a Report on the two elements in the optical fibres patented in 1970, which generated excessive attenuation:

- the photon wavelength of 633 nanometers, does not ensure the adaptability (i.e. equality) of the energy of the photons in the digital stream, with the energy of the thermons in the thermal clusters that permanently accompany the electrons on the last orbital shell (3p) of the Silicon atom, with which they interact when they enter the inner optical fibre;

- the diameter of the optical fibers of 62.5 microns (equal to that of the natural silk fibers), does not ensure the sinphasing of the photon waves in the successive reflective points inside the optical fiber, causing the return (i.e. reflection) of most of the photons transmitted by the laser in the optical fiber, as it results from below equations.

- *The speed of the thermal cluster electron on (3p) orbital layer* of the Silicon atom, where  $k_{Si}$  is a constant caused by the recoil effect of the Electron in the collision-scattering process of the free Cuantoms of the Universal Dual Fluid is given by the equations:

$$v_{e(3p)} = v_c / (4\pi/3) k_{Si} = 0.53037888 \times 10^6 \text{ m.rad./s} ; \quad k_{Si} = 0.9847164 \quad (45)$$

- *The energy sinphasing* of the photon passing optical fibre with the thermal cluster electron speed on (3p) orbital layer, where  $n_\gamma$  is the Quantum number of the moving photon at speed  $c \rightarrow$

$$E_{e(3p)} = n_\gamma m_e c^2 = n_e m_e (v_{e(3p)})^2 / 2 = 1.2812427 \times 10^{-19} \text{ kg.(m/s)}^2 \quad (46)$$

$$n_\gamma = n_e (v_{e(3p)} / c)^2 / 2 = 1.9336391916 \times 10^{14} \quad (47)$$

- *The wavelength for ‘photonic superconductivity’* resulted from the equation:

$$\lambda_\gamma = c \cdot h / n_\gamma \cdot h_c = 1,550 \times 10^{-9} \text{ m} \quad (48)$$

- *The Diameter* of the optical super-conductive fibre resulted from the ‘synphasing of Compton’s waves at the multiple reflexion points’ of the photons, inner the optical fibres:

$$D_{FO} = 2\pi\lambda_\gamma = 9,740 \times 10^{-9} \text{ m} \quad (49)$$

- *Nowadays the both technical characteristics are using in the entire world* [3+4+20].

- *The sinphasing effect for photon superconductivity* is applicable, too, for the electric superconductivity, accordant the equation (49):

$$D_{cu} = (2\pi \cdot k) \lambda_e / \alpha = 2.08910789 \times 10^{-9} \text{ m} \quad (50)$$

$D_{cu}$  being the distance between the Copper nanoconductors, and  $k$  takes values 1, 2, 3 or 4.



The refraction index  $\alpha$  (the Sommerfeld's constant), as well the equality Electron speed  $v_e$  around the proton in the Bohr's hydrogen atom, experimentally prove the existence of the gravity thermal clusters around the atomic particles.

## VIII. CONCLUSIONS

(i)- The research method above described ***allowed the author to discover:***

- *the new fundamental subquantum particles named 'Cuantoms' from which are constituted both the 'Cuantomic Universal Fluid' and all Quantum Particles which compose all material structures in Universe',*
- *the new fundamental subparticles named 'Gravitons' from which are constituted both the 'Gravitonic Universal Fluid' and all Cuantoms;*
- *the new elementary particles named 'Proneutrons' being situated inner the Positrons.*
- *'the new elementary dielectric charge', which causes 'the electric neutrality effect' for Neutrons, Proneutrons and Photons;*
- *'the Cuantoms mass flow of the spin Compton wave' generated by the Electron and Positron, named 'elementary electric charge', which causes the electrostatic interactions;*
- *the physics effects which cause the gravitational and inertial-relativistic masses, gravitational and electrostatic interactions, universal synchronizing of the electric and gravitational waves, electric neutrality, nuclear forces and black hole versus quantum gravity, heating and temperature, radioactivity and nuclear dezintegration, photonic and electric superconductivities.*

(ii)- The results communicated at the Annual Scientific Session of the Bucharest University, through the 50 original structural equations created and published beginning 1979 year, allowed to the educational persons inner Universities, the researchers, and other person [22-28] interested in science development, *to know 'The New Subatomic Causal Physics on the Fundamental Phenomena' in accordance with the objective reality resulted from experiences performed by other great researchers.*

(iii)- The continuation of the researches already started by author, remains open, having as object compensation for irreversible growth of the Earth-Moon mass caused by the gravitational attraction of cosmic dust, having right consequences:

- the gradual reduction of the distance between the Earth and the Sun;
- increasing the gravitational coupling between the Moon and the atmosphere, the waters, and the covering ground of the Earth, leading to the known catastrophic climatic and geophysical changes.

(iv) *The stability of the Sun's mass seems that was naturally solved by the balance between the energy received from gravitationally attracted cosmic dust, and the energy of the radiations resulted from its burning to over  $1.5 \times 10^6$  °K, which heats the planets, including the Earth.*

(v)- Both the new research method and the results obtained by applying it to the subatomic environment, seem have applicative relevance, stimulating new research topics, such as the

involvement of quantum gravity in the chemical reactions ('gravitational chemistry'), the involvement of gravity and the effect of 'self - equalization of pressures at the speed of sound', in climate change ('geophysical and gravitational meteorology'), more efficient wind and solar renewable energy sources, the creation of new materials in telecommunications and nanotechnologies, health and environmental change control, the *reconsideration of the curriculum in educational physics*, in accordance with the objective reality of physics, expressed by updated Planck's equation [29+30].

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