



ETHER – MATTER TRANSITIONS IN THE UNIVERSE

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ABSTRACT

Coming back to the basic mathematical meanings of the physical, chemical, biological and other cosmic phenomena, results an old-new interpretation of the whole cosmic structure, as result of the re-introduction of the ETHER and ETHERON in the Physical/Material World. As complex resultant of the 3 real componental (ETHERON-GLUON-QUARK) quaternionic interactional system – the BION – will be the fundamental component of Our Universe, with its– for the moment – unimaginable implications.

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INTRODUCTION

THE WHOLE PERIODIC SYSTEM elaborated in my earlier work [1,11] begins with the ETHERON, GLUON and QUARK, before the HYDROGEN and HELIUM, and ends with the element No. 558, contrary to the element No. 118 in the – by the IUPAC – official recognized PERIODIC SYSTEM, which only the fourth step is, or middle note of the Big Cosmic Octave. First of all, what we know about these pre-elements, respectively about the transition element from the Etheric to the Material World? In the classical work [2] there are determined the main characteristics of the ETHERON, as follow: $mass_{m_E}=1.3494 \times 10^{-69} \text{ kg}$, radius $r_E=1.616 \times 10^{-35} \text{ m}$, cross section $=10^{-70} \text{ m}^2$ for both, COSMIC-, respectively NUCLEONIC ETHERONS, and total number $7.4 \times 10^{121} // 1.24 \times 10^{42}$, etherondensity $8 \times 10^{42} // 3.1 \times 10^{86} \text{ m}^{-3}$, free path $1.3 \times 10^{26} // 2 \times 10^{-17} \text{ m}$, inter-etheronic distance $2.77 \times 10^{-15} // 7.4 \times 10^{-30} \text{ m}$, different from one another. The number of etherons inside an ELECTRON is about 6.7×10^{38} . Inside the „pondero-vibratory” analysis [3] there are two kind energy-equivalencies: $E=mc^2$ and $E=vh$, gravific and vibratory mass or weight, similarly to the cosmic/free and nucleonic+electronic bounded etherons. Extending this method from the atomic-molecular resonance to the ethero-gluono-quark successive

resonance, the complex resultant of this three-interactional quaternionic system [4], [5] will have a BIONIC character. Inside a spherical model this is a resultant radius of the three one another perpendicular etheric, gluonic and quark radii with one-, two- and three-fold resonances, but in my conic-toroidal model [6] it is the spiral axis of the conic-toroidal vortex, its axial projection being a minimal possible circle with Planck-radius (the ETHERON-RADIUS). So, the BIONIC AXIS of the CONIC-TOROIDAL UNIVERSE is in fact a LIFE-SPIRAL, in form of braid with the mentioned three massive components together, the correspondent „particle” being the BION, in form of bubbles, with the interior imaginary component as hidden part of the total mass/energy of the Universe. In this context, the elementary particles are superior harmonycs of the „fundamental tone” ETHERON. Based on the hypothesis that the GLUON, QUARK and BION are 2-, 3-, respectively 5-fold resonances of the ETHERON [4], [5], result their characteristic masses as follow: GLUON $m_G=2.6988 \times 10^{-69} \text{ kg}$; QUARK $m_Q=4.048 \times 10^{-69} \text{ kg}$; BION $m_B=6.747 \times 10^{-69} \text{ kg}$ (mentioning the cosmic octavic massive difference of these „particles”). The resonant transitions from the ETHER to MATTER[8] include chaotic phases too [7], with some mass-transformation in bonding energy [9]. In conformity with the mathematical numerical system, hyper-real, real, complex and hypercomplex (quaternionic, octonionic and sedenionic) materials exist.

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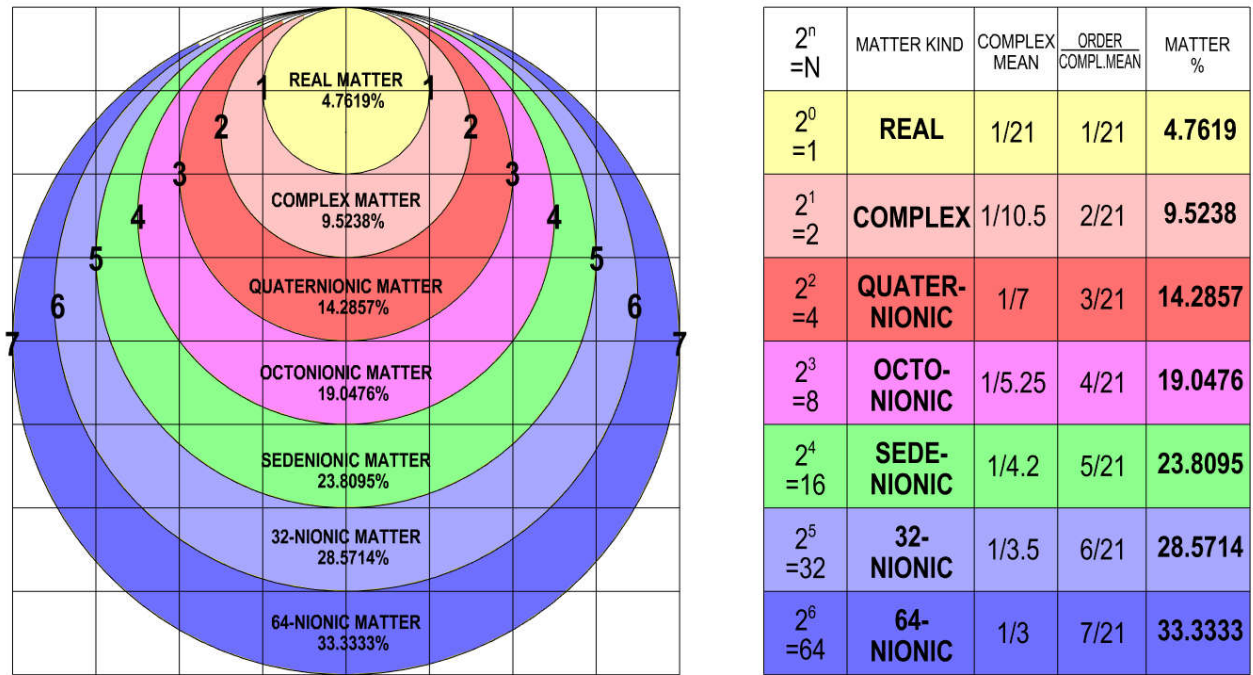
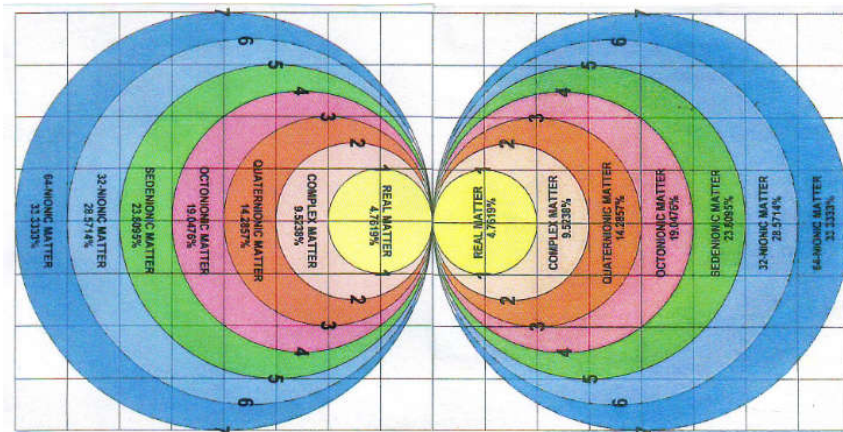


Figure 1.

Toroidal Structure of the expanding universe (2)



The Whole Periodic System itself [1] was elaborated as a quaternionic system, beyond the energy with introduction of the notions of dinergy and trinergy, extending it in the octonionic and sedenionic direction, in correlation with the dimensional states[1/5], the nano-materials tending to the higher, respectively the mono-materials to the lower dimensions. In other approach the ETHERONS are single helical strings in form of Fulleren-like nanotubes, evolving through successive unifications, in conformity with the formal „equation” $U(1) \times SU(2) \times SU(3) = SU(5)$, resulting the superstrings in form of GLUONS as double helical-, QUARKS as triple helical-, and BIONS as quintle helical ETHERON BRAIDS, similarly to the evolution of the helical structural complexity in the Biology [5/G1]. In conclusion, the re-introduction of the ETHER and ETHERON in the Physical/Material World implies the introduction of the notion of (HYPER-)COMPLEX MATERIALS, of which „particles” are the BIONS, with the real components in form of (HIGGS-)BOSONS, respectively imaginary components in form of TACHYONS [10] as DARK MATTER or ENERGY with in the bubbles included IMAGINARY MASS.

These „particles” are signed in [1] with the symbols * and O (illustrations nr. 1, 3 and 3’). The HIGGS-BOSON, with a mass $m_H = 2.2448 \times 10^{-25}$ kg, is 1.6635×10^{44} -times greater than $m_E = 1.3494 \times 10^{-69}$ kg mass of the ETHERON. This cosmic ratio was remarked by Dirac for action, pressure, time, energy, temperature, space, velocity, charge and other characteristics too, between the limit-values of the subatomic and galactic levels. So, the same quotient is present between the limit-values of the etheric and subatomic levels, respectively of the upper Cosmic Big Octave Galaxy-Universe. In this context, it is interesting the cosmic ratio 1.2305×10^{42} too, reporting the ETHERONIC MASS m_E to the ATOMIC MASS $m_U = 1.6605 \times 10^{-27}$ kg. From this difference result the $m_g = 4.0723 \times 10^{19} / 2.0445 \times 10^{15}$ kg differences for Our Galaxy, respectively $m_U = 6.7744 \times 10^{63} / 2.5158 \times 10^{57}$ kg for Our Universe. This difference raise the question of the fractal structure of the Universe, but otherwise the Einstein-formula $E = mc^2$ is not complete. The complete equivalence formula is $E = m(nc)^2$, with n real number. So, the TACHYONS with supraluminous velocities ($n > 1$) hold enormous energies, while the TARDYONS with infraluminous velocities ($n < 1$) hold less energies than in the Einstein-formula, which is available only

Spherical- Toroidal Dual Cosmic Evolution- (3)

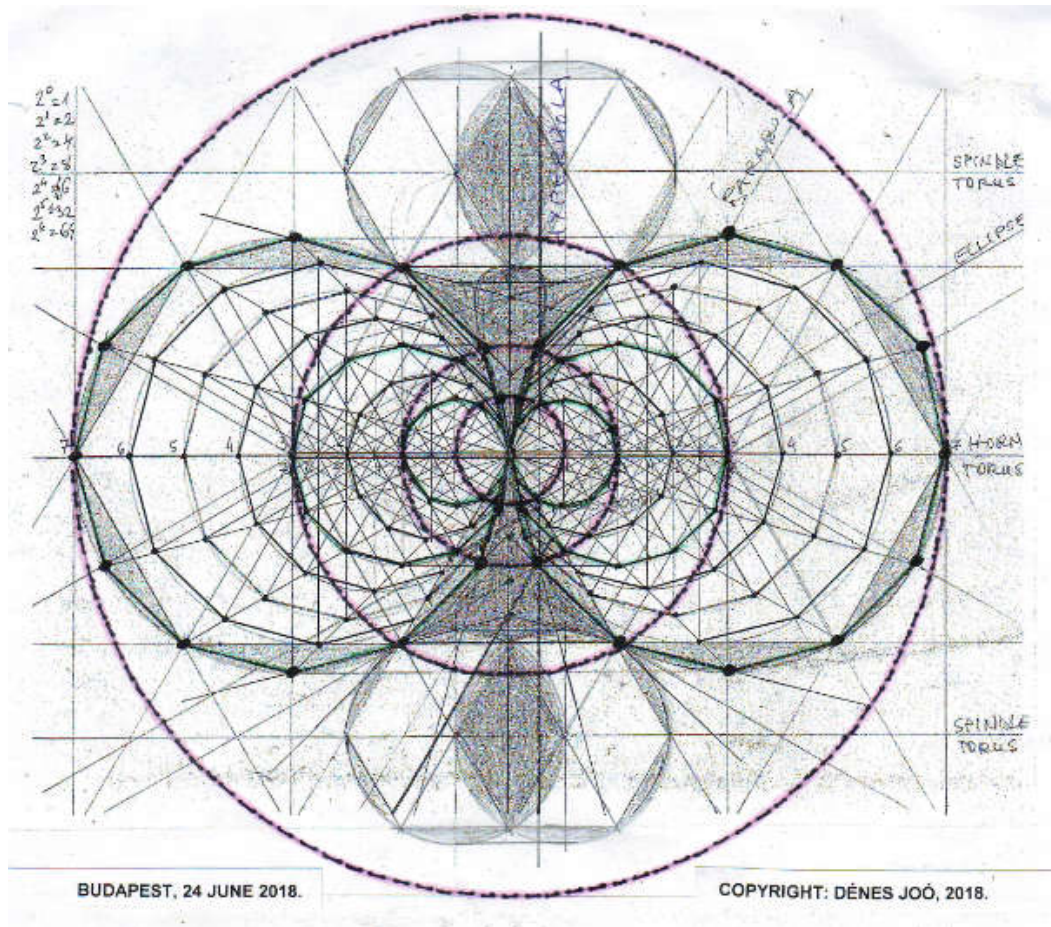


Table 1.

MATTER		REAL VISIBLE	COMP-LEX	QUATER-NIONIC	OCTO-NIONIC	SEDE-NIONIC	32-NIONIC	64-NIONIC
SPHERE	RADIUS	$r=1.3 \times 10^{26} \text{ m}$	2r	4r	8r	16r	32r	64r
	SURFACE	$A_s=4\pi r^2$	4As	16As	64As	256As	1024As	4096As
	VOLUME	$V_s=4/3\pi r^3$	8Vs	64Vs	512Vs	4096Vs	32768Vs	262144Vs
TORUS	RADIUS	$r=1.3 \times 10^{26} \text{ m}$	2r	4r	8r	16r	32r	64r
	RADIUS	$R=2r$	4r	8r	16r	32r	64r	128r
	SURFACE	$A_t=4\pi^2 Rr$	4At	16At	64At	256At	1024At	4096At
	VOLUME	$V_t=2\pi^2 Rr^2$	8Vt	64Vt	512Vt	4096Vt	32768Vt	262144Vt

$r=1.37 \times 10^{10} \text{ Ly}; \quad 1\text{Ly}=9.46 \times 10^{15} \text{ m};$

in the case of the LIGHT (n=1), as a torus-membrane between the above two Worlds. The continuous successive creation and distribution of the MATTER from the ETHER in Our Universe[4] is correlated with the chemical structuring of the elements[1], but this is only an insignificant part of the TOTAL MATTER, which is organized according to the mathematical structuring system based on the powers of the 2, consisted of hyper-real, real, complex and hyper-complex (quaternion, octonion, sedenion, 32-nio, 64-nio) numbers. The hyper-real matter refers to the ETHER, while the complex and hypercomplex ones refer to the DARK MATTER, with real + imaginary components.

In this vision, the WHOLE MATERIAL STRUCTURE of Our Universe is presented in the annexed picture and Table (1). The numbers 1 ÷ 7 are light-borders between the MATERIAL WORLDS, with successive inclusion one in another, similarly to the Matriuschka-dollies, or to the onionskins. This decomposition of the ETHER (COSMIC LIGHT) in MATTER-SPECTRUM is similar to the Newton's one in the LIGHT-SPECTRUM. From the division of these 7 numbers with 21, the mean of the complex components, results the proportion of every layer of the MATTER-SPECTRUM, namely the decomposition of the „darkness”, or – with a more appropriate expression – the distinction/wandering all over of the 7 biblical ”heavens”.

Table 2.

STEPS	$A_t/A_s=2\pi=6.2829$ $4A_s/A_t=2/\pi=0.6366$	STEPS	$V_t/V_s=3\pi=9.4248$ $8V_s/V_t=8/3\pi=0.8488$
1	$1A_s=2.1237\times 10^{53} \text{ m}^2$	1	$1V_s=9.2028\times 10^{78} \text{ m}^3$
2	$1A_t=1.3343\times 10^{54} \text{ m}^2$	2	$1V_t=8.6734\times 10^{79} \text{ m}^3$
3	$4A_s=8.4948\times 10^{53} \text{ m}^2$	3	$8V_s=7.3622\times 10^{79} \text{ m}^3$
4	$4A_t=5.3372\times 10^{54} \text{ m}^2$	4	$8V_t=6.9387\times 10^{80} \text{ m}^3$
5	$16A_s=3.3979\times 10^{54} \text{ m}^2$	5	$64V_s=8.8899\times 10^{80} \text{ m}^3$
6	$16A_t=2.1349\times 10^{55} \text{ m}^2$	6	$64V_t=5.5509\times 10^{81} \text{ m}^3$
7	$64A_s=1.3590\times 10^{55} \text{ m}^2$	7	$512V_s=4.7119\times 10^{81} \text{ m}^3$
8	$64A_t=8.5397\times 10^{56} \text{ m}^2$	8	$512V_t=4.4408\times 10^{80} \text{ m}^3$
9	$256A_s=5.4367\times 10^{55} \text{ m}^2$	9	$4096V_s=3.7695\times 10^{82} \text{ m}^3$
10	$256A_t=3.4158\times 10^{56} \text{ m}^2$	10	$4096V_t=3.5526\times 10^{83} \text{ m}^3$
11	$1024A_s=2.1746\times 10^{56} \text{ m}^2$	11	$32768V_s=3.0155\times 10^{83} \text{ m}^3$
12	$1024A_t=1.3662\times 10^{57} \text{ m}^2$	12	$32768V_t=2.8421\times 10^{84} \text{ m}^3$
13	$4096A_s=8.6987\times 10^{56} \text{ m}^2$	13	$262144V_s=2.4124\times 10^{84} \text{ m}^3$
	$4096A_t=5.4653\times 10^{57} \text{ m}^2$	13	$262144V_t=2.2737\times 10^{85} \text{ m}^3$

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Addition 1

The above presented MATTER-DISTRIBUTION in the Universe is considered in a spherical model, but this is only a borderline evolutionary case, the general process follows a CONIC-TOROIDAL MODEL [6/E2]. In this approach, the imaginary section of the Universe (2) refers to a horn-torus series, as an expression of the Expanding Universe. Considering the Observable Universe (REAL MATTER =4.7619%) a sphere with a radius of $R=1.3\times 10^{26} \text{ m}$, respectively with a volume $V=9.3\times 10^{78} \text{ m}^3$ [2], results a cosmic etheron density of $N/V=8\times 10^{42}/\text{m}^3$. So, in the case of the same radius, the volume-ratio Torus/Sphere results $V_T/V_S=9.4248$ ($=3\pi$), respectively the surface-ratio $A_T/A_S=6.2829$ ($=2\pi$), consequently the cosmic etheron density will be 9-times smaller, respectively the surface/light-membrane 6-times greater, by the torus. Because the space dread of emptiness, with successive radial/diametral doubling of the sphere takes place a globally increasing matter-creation mechanism,

alternating the including/outer and included/inner relations of the sphere and torus each another (3). So, the PULSATING UNIVERSE is functioning as an ETHER-PUMP, the transition from the ETHER to MATTER continuing through the 7 matter-kinds from the real to the complex and hypercomplex forms, in 13 oscillating steps (similarly to the pentatonic and diatonic musical scales), following an increasing logistical curve-series, with multiplier factors $3\pi=9.4247$ -times volumetric and $2\pi=6.2829$ -times superficially (tables 1-2), and with intercalated decreasing of $8/3\pi=0.8488$ -times volumetric, respectively $2/\pi=0.6366$ -times superficially. Consequently, the Hubble-“constant” follows this oscillation, it is a “folding constant”, similarly to the space-spacetime-time foldings, explainable in the mathematical catastrophe-theory, between others as the hyperbolic, elliptic and parabolic umbilic catastrophes. In this quite new vision are explainable the above mentioned supraluminous velocities too, which follow the expanding factor. So, it’s possible a revision of the “Light year” notion (Ly) of $9.46\times 10^{15} \text{ m}$ available in the visible material world ($1.3742\times 10^{10} \text{ Ly}$ in $R=1.3\times 10^{26} \text{ m}$) for the invisible material worlds, with successive doubling of the light-speed $c=299792458 \text{ m/s}$ [2]. In this way, the small logistical steps will have a whole covering logistical curve, namely the small explosion-implosion series will form a “folding”, oscillating, pulsating octavic explosion-implosion of the Universe, by no means a “Big Bang”! These evolutionary steps are correlated with the dimensional evolution of the Universe. In the conic-toroidal model [6] it’s explained the 5 dimensional (5D) phase formed by the elementary cone and the first torus – both with 3-3 dimensions, but one of them (the central axial) being common –in which the tensor equation system of the Theory of Relativity is interpretable. The dimensions of the next tori – light borders/membranes (see the membrane-theory) between the hidden material worlds – follow the Golden-series, respectively 8D-13D(called Hilbert-space too)-21D-34D-55D-89D, but the number of the intermediate dimensions follows

the Apocalyptic series 1-2-4-7-12-20-33 (4D, 6D÷7D, 9D÷12D, 14D÷20D, 22D÷33D, 35D÷54D, 56D÷88D). The 1D (Linear World), 2D (Flat World) and 3D World are included in the Real Material World bordered by the first Light-Membrane (1), (2), (3). Inside the universal interaction, as action exists only together with interaction, so explosion doesn't exist without implosion. This means a logistical – and not exponential – cosmic evolution as whole, the exponential phase being only from the start to the inflection point of the logistical curve [1], [7], consequently the collapse will never be followed by singularity, it is a new start-phase, leading to the higher astral-mental-causal-buddhic supraluminous levels of the existence/vibration domains [1/5].

Conclusion

The re-introduction of the ETHER in the Physical/Material World is leading to a revolutionary transformation of the human knowledge. The terrestrial humankind arrived in such an evolutionary phase, which demand – for the re-integration in the larger cosmic evolution – a sudden extension in getting acquainted with our micro- and macro-cosmic surroundings. For the sake of this cause it's indispensable the synergic treatment of the accumulated knowledge, without any border between the scientific disciplines, and a fundamental change in

the human mentality, between others in the science, of which part can be the Systemic Evolutions Research, as result of the 20th century's two leading theories' – the Mathematical Systems Theory and Bertalanffy's Theory of Evolution – synthesis. The unforeseen surprising result of this research it's the discovery of the BION, "particle" (wave-concentration) of the LIVING MATTER, as the basic component of OUR LIVING UNIVERSE.

REFERENCES

Dénes JOÓ, after the „Ion Mincu” University of Architecture and Urbanism in Bucharest, he studied Mathematics, Economy, Sociology in Cluj-Napoca-city, and Postgradual Settlement and Regional Planning in Bucharest, and parallel with all these Physics, Chemistry, Astronomy, Logic, Philosophy and other scientific disciplines without limits. Elaborating new mathematical prognosis models, he extended the Futures Research to the Systemic Evolutions Research as a new synthesis in the science, extending it from the terrestrial to the cosmic evolution, from the micro- to the macro-world, including the Pyramids Research too. Bp., 22nd July 2018.
