

# Tesla waves

More than one hundred years before, Nikola Tesla was discovered and was utilizing new type of electric (so called Non-Hertzian) waves. In this paper, we should try to explain Tesla's waves nature and establish entirely new kind of corpuscle, we named Teslion, as theirs own quant carrier, and to demonstrate that Tesla's ideas about Non-Hertzian waves commonly do not impugn recent science axioms. Moreover, it will be shown that, according to ours hypothesis, they are in pure concordance with Maxwell's equations, actually are consolidating Quantum theory and Theory of relativity.

Considering Energy Density Quantifying model and Eternal Oscillating Universe model postulates, Tesla's waves could be "evanescent mode" components of classical (Hertzian) EM waves. Hence, by our opinion, Tesla's Colorado Springs experiments were antecedent of recent "Superluminal Signal velocity" experiments. Furthermore, his "Apparatus for the utilization of radiant energy", as some kind of "corpuscle energy converters", was "mechanical" variety of modern Lasers and forerunner of any kind of "Zero point, Free energy" devices.

## 1. Tesla's statements

As we know, before the turn of the previous century, Nikola Tesla had discovered a new type of electro-magnetic wave. He repeatedly stated that his waves are not classical EM waves, but new kind of energy transmission, in a form of Non-Hertzian waves, with substantially different characteristics than Hertzian waves.

This is obviously enunciated in his Canadian Patent 142,352 Improvement in the Art of Transmitting Electrical Energy Through the Natural Mediums: "Be it known that I, Nikola Tesla, a citizen of the United States, residing in the Borough of Manhattan, in the City, County, and State of New York, have discovered a new and useful Improvement in the art of Transmitting Electrical Energy Through the Natural Mediums .... "... In order to magnify the electrical movement in the secondary as much as possible, it is essential that its inductive connection with the primary A should not be very intimate, as in ordinary transformers, but loose, so as to permit free oscillation – that is to say, their mutual induction should be small ..." "... It is necessary to employ oscillations in which the rate of radiation of energy into space in the form of Hertzian or electromagnetic waves is very small ..." "... paradoxical as it may seem, the effect will increase with the distance and will be greatest in a region diametrically opposite the transmitter ..." "... The most essential requirement is, however, that irrespective of frequency the wave or wave-train should continue for a certain interval of time, which I have estimated to be not less than 0.08484 of a second and which is taken in passing to and returning from the region diametrically opposite the pole over the earth's surface with a mean velocity of about 471240 km/sec. ..."

Explaining structural form of Radiant energy sources in his US Patent 685,957 "Apparatus For The Utilization of Radiant Energy ", Tesla claimed: "... The Sun, as well as other sources of radiant energy, throws off minute particles of matter positively electrified, which, impinging upon the plate P, communicate continuously an electrical charge to the same. ..." "... as these supposed particles are of an inconceivably small radius or curvature, and consequently charged to a relatively very high potential, this charging of the condenser may continue, as I have actually observed, almost indefinitely, even to the point of rupturing the dielectric. ..." In New York American, November 1st, 1933, Tesla says: "... that the source of this (radiant) energy is our Sun. He concluded that the Sun emits small particles, each carrying so small of a charge, that they move with great velocity, exceeding that of light. Tesla further states that these particles are the neutron particles. Tesla believed that these neutron particles were responsible for all radioactive reactions. Radiant matter is in tune with these neutron particles. Radiant matter is simply a re-transmitter of energy from one state to another. ...".

In his "Coil for Electro-magnet's", US Patent 512,340 Tesla says:

“... Minimal work is done in my radiant energy system due to the absence of wasted displacement currents. As small heat losses occur, oscillations are maintained by surplus charge generated by atomic catalytic reactions, energy is siphoned from the kinetic moments of these charges. Very low energy expenditure allows power delivery to an electrical load over an extended time period without an external fuel supply. After an initial input of energy from an outside source, the radiant energy electrical generator will operate as a very efficient device. ...”.

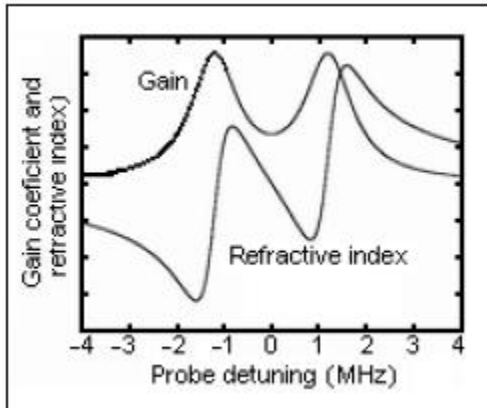
## 2. Scalar waves considerations

According to Mr. Thomas Bearden2 ( <http://www.dnai.com/~zap/howitzer.htm> ) : “... charge is a 4 - dimensional concept. Now mass is a spatial, 3-dimensional concept. Rigorously, mass does not exist in time - mass time exists in time. Mass and charge are thus of differing dimensionalities! Also, according to quantum mechanics, the charge of a particle - e.g., of an electron - is due to the continual flux of virtual particles given off and absorbed by the observable particle of mass. Thus charge also is conceptually a measure of the virtual flux density, and directly related to THETA. Further, since the charge exists in time, it is the charge of a particle of spatial mass that gives it the property of mass time, or existing in time. Here a great confusion and fundamental error has been thrown into the present EM theory by the equating of "charge" and "charged mass." ...” “... Now, if one varies the SEP (Scalar Electrostatic Potential) solely as a point function, one would have a purely scalar complex longitudinal wave, and not a vector wave at all. This is the fundamentally new electrical wave that Tesla discovered in 1899. Rigorously, all vector fields are two-point functions and thus decomposable into two scalar fields, as Whittaker showed in 1903. It follows that any vector wave can be decomposed into two scalar waves. By implication, therefore, a normal transverse EM vector wave, e.g., must simply be two coupled scalar (Tesla) waves - and these scalars independently would be longitudinal if uncoupled. An ordinary transverse EM vector wave is thus two pair-coupled Tesla scalar longitudinal waves, and only a single special case of the much more fundamental electromagnetic discovered by Nikola Tesla. ...” “... scalar wave's velocity through the slightly dragging medium still may be far greater than the speed of vector EM waves (light) in vacuum. On the other hand, if the pair-coupling is made severe, the THETA-wave may move at a speed considerably below the speed of vector light waves in vacuum. ...”

## 3. Scientific explanations of superluminal signal velocities

Does modern science permit Tesla's wave existence? By my opinion, answer is YES, although the principle of causality seems to be violated. To approve such premises let's get acquainted with some scientific explanation of superluminal signal propagation experiments.

Einstein's theory of special relativity imply that the speed of any moving object cannot exceed that of light in a vacuum. Nevertheless, there exist various proposals for observation faster than light propagation of pulses, using anomalous dispersion near an absorption line, nonlinear and linear gain lines, or tunneling barriers. Essential effect is that the group velocity of a pulse in such region exceeds light velocity even if the individual waves themselves are not traveling faster than this. Details are exposed at: <http://www.nature.com>, in the article: "Gain assisted superluminal light propagation", e.g.



According to articles: "Superluminal signal velocity", G.

Nimtz, Ann. Phys. (Leipzig) 7 (1998) 7-8, 618-624, or "Evanescent modes are not necessarily Einstein causal", Eur. Phys. J.B 7, 523-525 (1999), frequency band limitation is a fundamental property of signals and that such signals containing only evanescent modes can violate Einstein causality.

By Mr. Günter Nimtz.

"... Evanescent modes are characterized by extraordinary properties: Their energy is negative, they are not directly measurable, and the evanescent region is not causal since the modes traverse this region instantaneously ..."

Bearden, Thomas E. Ph.D., nuclear engineer, retired Lieutenant Colonel (U.S. Army), CEO of CTEC, Inc., Director of the Association of Distinguished American Scientists, and Fellow Emeritus of the Alpha Foundation's Institute for Advanced Study. 3 Prof. Dr. Günter Nimtz, II. Physikalisches Institut der Universität zu Köln, Zülpicher Straße 77, D-0937 Köln, Germany

"... Tunneling represents the wave mechanical analogy to the propagation of evanescent modes. ... Compared with the wave solutions an evanescent mode is characterized by a purely imaginary wave number ..." "... evanescent modes are characterized by an exponential attenuation and a lack of phase shift. The leather means that the mode has not spent time in the evanescent region, which in turn results in an infinite velocity in the phase shift at the boundary. ... " "... For frequency band limited signals conveyed by superluminal evanescent modes the classical property becomes evident. The limited spectrum is not due to a technical deficiency of signal generator. The Fourier transform of a frequency band limited signal is unlimited in time. Thus there would be no start and no end although they are measured. The explanation of this amazing phenomenon is that the intensity outside the observed signal's time is too small to be measurable, the corresponding energy is smaller than a quantum  $\hbar\omega$ . ... As long as the transmission dispersion can be neglected in the limited spectrum, a significant pulse reshaping does not take place and signals as well as the evanescent energy can travel faster than light. ... Thus an observer communicating with light velocity may see a change of chronological order of cause and effect. Standing behind the tunnel one may see the signal leaving the tunnel before entering it". ..."

#### 4. Summing up

Regarding Tesla's description of various apparatus, especially apparatus for utilization of radiant energy, we can perceive a great similarity between Tesla's states and evanescent mode components as well as with T. Bearden's scalar waves. This likeness is not only declarative. We suggest you to get acquainted with David Peat's book: "In search of Nikola Tesla, particularly with Andrija Puharic's explanations of Non-Hertzian waves, exposed in that book. Briefly, Puharic claimed that transmitter emit two kind of EM radiation, "follow beam" and "leader beam". Follow beam consist of electromagnetic radiation which spread from transmitter

with velocity of light and is associated with classic, conventional emitting. For leader beam, Puharic said that that is a form of EM signal ignored by classical science. It is supposed that this form of EM radiation spread with over luminal velocities, forming specific connection-way with receiver. This connection is in the form of rotating (spiral) magnetic field, apropos "worm hole", built through earth like bore. Considering this theory, leader beam does not transmit energy but produce magnetic tunnel as "specific way", "worm like cavity", for energy streaming in a form of electron-positron pairs. Recent superluminal velocity experiments with "normal" light and with microwave radiation, as well as quantum teleportation experiment, etc. indicate a possibility that Tesla was utilized new kind of waves, he called Non-Hertzian, and was transmitted signals with superluminal velocities. As we already said, by our opinion, Tesla's Colorado Springs experiments were antecedent of recent "Superluminal Signal velocity" experiments. With intention to confirm this assumptions we made a small version of Tesla's "magnifying amplifier", and in our recent experiments we observed faster then light propagation of pulses, and by our measurements on to the extra coil we attained superluminal signal velocity of about  $1.12 \cdot c$  ! Since Special Theory of Relativity was announced, this was heresy, but, theoretical light velocity (300.000.000 m/s) isn't meeting its measuring value in the Vacuum (299.792.458 +/- 12 m/s)! There is a gap in between that shows possibility of reaching a velocities greater than photons moving velocity without changing the basic of Quantum Mechanics and/or Relativity postulates.

## 5. Excerpt from EDQ and EOU models

Just how close the basic assumptions of the models expounded are to reality we can test using their postulates to try to explain Tesla's waves and establish entirely new kind of corpuscle, named Teslion, as theirs own quant carrier. According to these models, both, Tesla's waves and Teslion is the same "stable" object seen (or introduced) in two (different) ways.

### 5.1. Energy Density Quantifying model

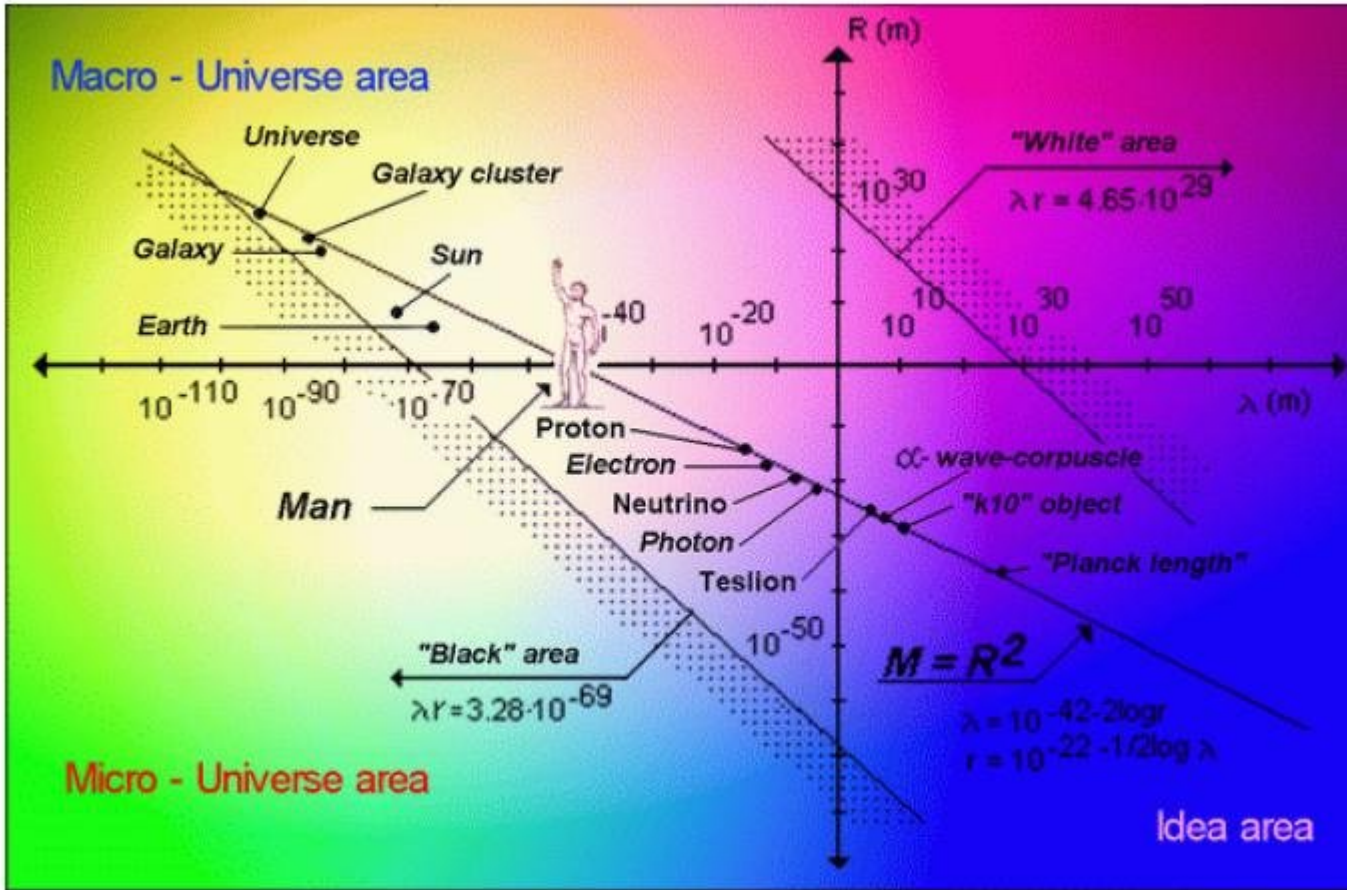
All research done in the field of theoretical physics in the past century, proved that energy is quantifiable. This fact offers a possibility of energy density quantifying, and, basically some kind of space quantifying, which is expressed by the existence of "stable" objects.

Stable object definition: - An object is stable if its lifetime is sufficiently long, or much longer than its time of formation.

Basical hypothesis:

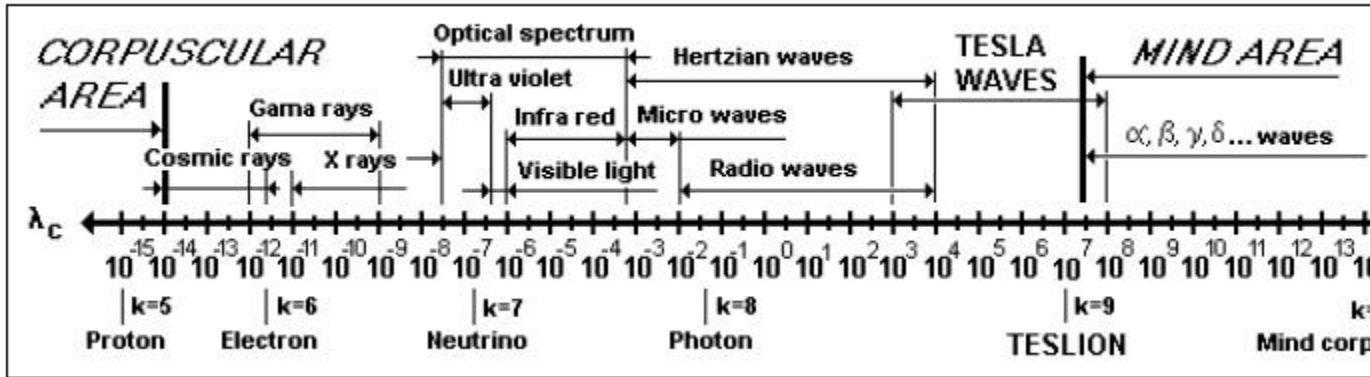
- Hypothesis 1: The stable objects density is defined as:  $\rho_k = 103k$ , where k is a whole number.
- Hypothesis 2: The stable objects mass has the approximate value of square of its radius  $m \sim r^2$  (generally  $m = r^2 n$ ,  $n \in P$ )
- Hypothesis 3: The largest possible object velocity is defined as  $v_{max} = (1/\mu_0 \epsilon_0)^{1/2}$ .

It is unified theory of Micro and Macro Universe based upon average energy density of stabile objects (particles and waves); calculation resulted in Diagram showing the distribution of all the universal objects that are possible in our world; Macro-universe are situated in the second Quadrant, Micro-particles into the third Quadrant and Spiritual objects into the fourth Quadrant.



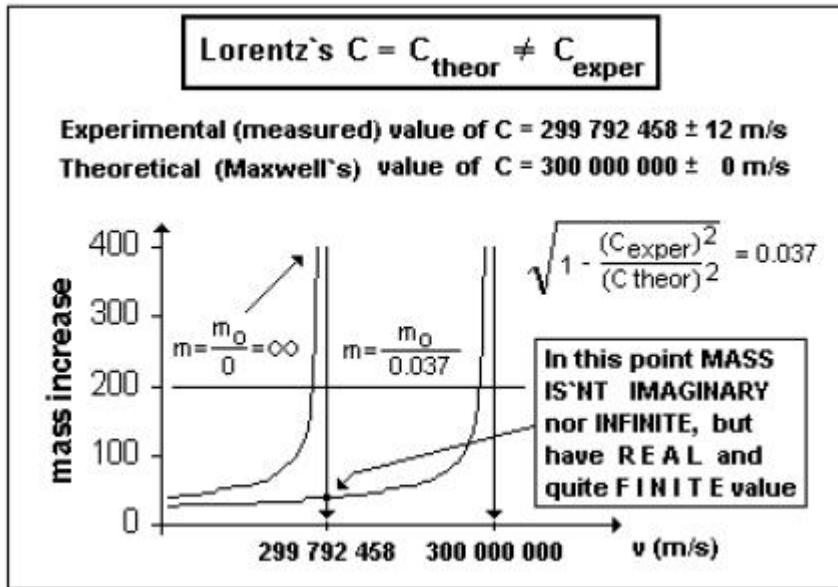
One can see a great harmony along the scale of mathematical size-values of different entities; Homo Sapiens takes the middle of the scale, on the border of Micro and Macro universe; the quantization ordering for real and stabilized objects is represented by number 'k'; for instance, electron is k=6, electron's neutrino is k=7, photon is k=8.

For k=10, we get object that is in wave-form in frequency range below 10 Hz (corresponding to human mental activities, electromagnetic component of ultra low-frequency "brain-waves", measured by electroencephalogram (EEG) are classified in five types ( $\alpha$ ,  $\beta$ ,  $\gamma$ ,  $\delta$ ,  $\theta$  waves) of frequencies (For instance  $\alpha$  wave frequency is 8 - 13 Hz).



In considering Hypothesis 3 the speed of light is reachable for objects with a real remaining mass ( $m_0$ ). Regarding that fact, the Planck energy relation becomes equivalent to Einstein's total energy relation. Hence, identical object's energy contents indicate that it is (can be) the same object with the same energy quantization ordering number "k" !

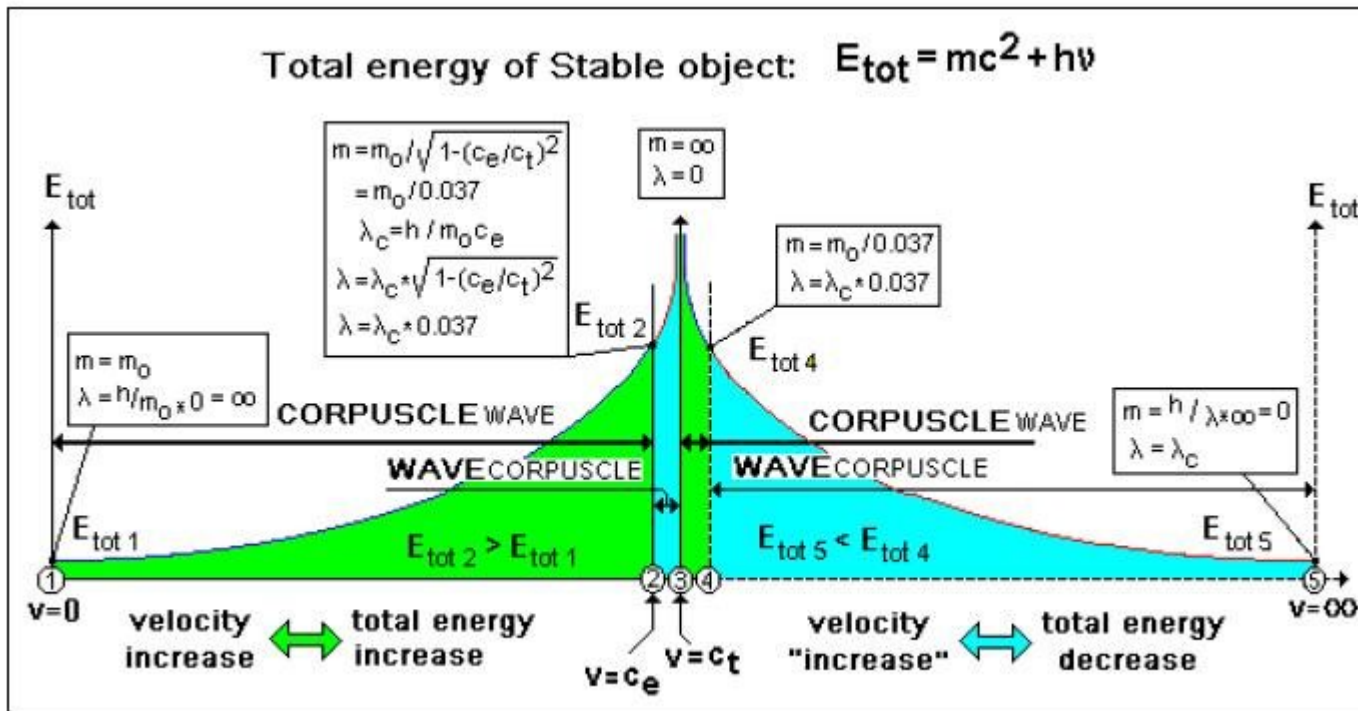
Light propagation velocity assuredly is photons moving speed but, regarding ours supposition (Hip. 3), this should not be value implied in T.R. as largest velocity in the nature. By ours opinion, this largest velocity value ( $v_{max}$ ) is established by Maxwell (James Clerk, 1831-1879). Its quantity is (really slightly) larger than the experimentally measured light speed ( $c=2.99792458 \cdot 10^8$  [m/s]). This  $v_{max}$  velocity value originates from vacuum characteristics and is:  $v_{max} = (1/\mu_0 \epsilon_0)^{1/2} = (36\pi 109/4\pi 10^{-7})^{1/2} = 3 \cdot 10^8$  [m/s]. This really negligible (quantitative) difference is, probably, fundamental reason why Maxwell (and all other scientists) was equalized and, in essence, identify this two velocity values. By ours opinion, although Lorenz's relations stay (almost) same, qualitative dissimilarity is very



large. Basic idea of these considerations is the following: object which move with speed lesser of experimentally measured value of light speed ( $c$ ) we perceive as particle. Objects whose velocity is close to value of light speed ( $c$ ), evince dualism nature, until objects whose speed is greatly of experimentally measured light

speed (c) but, at the same time, lesser than her theoretically value defined by J.C. Maxwell (vmax), we perceive as waves. Moreover, to every minimal energy (maximal wavelength) in the separate radiation ranges on the scale of electromagnetic waves, corresponds maximal energy (Compton wavelength) of some corpuscular objects. It is the reason why we suppose that there is an analogy between the (number of) different radiation ranges and (number of) basic stable corpuscles.

Hence, in Reality, none spacetime-matter object does not exist as a “corpuscle” or as a “wave” but all of them exist just as Corpuscle-Wave dual-energy-form entities, expressing their energy-content, depending of energy density relations of themselves (for each other) and of environment as well as of observers motion state, PREDOMINANTLY in a substantial form or in a wave form. In essence EACH spacetime-matter object ALWAYS is “duality” and have corpuscle-wave structure but is expressed (perceived, measured...) in a “different” form, depending of energy density relations.



Regarding that fact we believe that Tesla's (non-Hertzian) waves as wave form of matter are purely analogous to "Teslion" particle, as its corpuscular form of matter, beings Tesla's wave's quant carrier, as well as a photon is of a normal (Hertzian) electromagnetic waves.

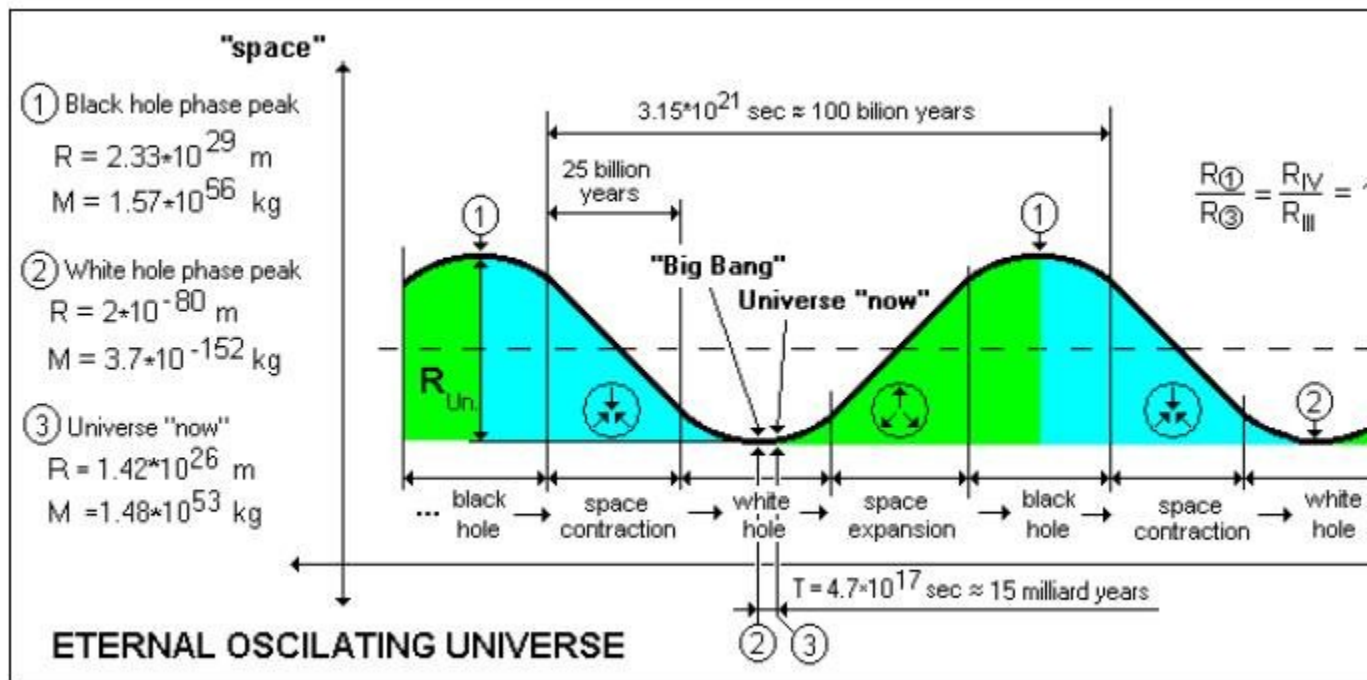
This means, that we regard that Tesla's waves are some kind of a "topsy-turvy" variant of a classical (Hertzian) EM waves, but with a much finely energy density structure than the photon have.

In a structural energy-form sense, we can say that "here", in ours "3D reality", Tesla's waves can be perceived just as a form of theirs "3D shadow", apropos as a "subluminal electromagnetic wave", or considering ours hypothesis 3, in theirs substantial form as a "superluminal particles"! In essence, theirs energy structure is multidimensional and consequently have theirs own superior way to propagate using over-unity dimensions including "other side" of ours 3D Reality, and spread through multidimensional "space" tunneling "this side" of our Reality.



## 5.2. Eternal Oscillating Universe model

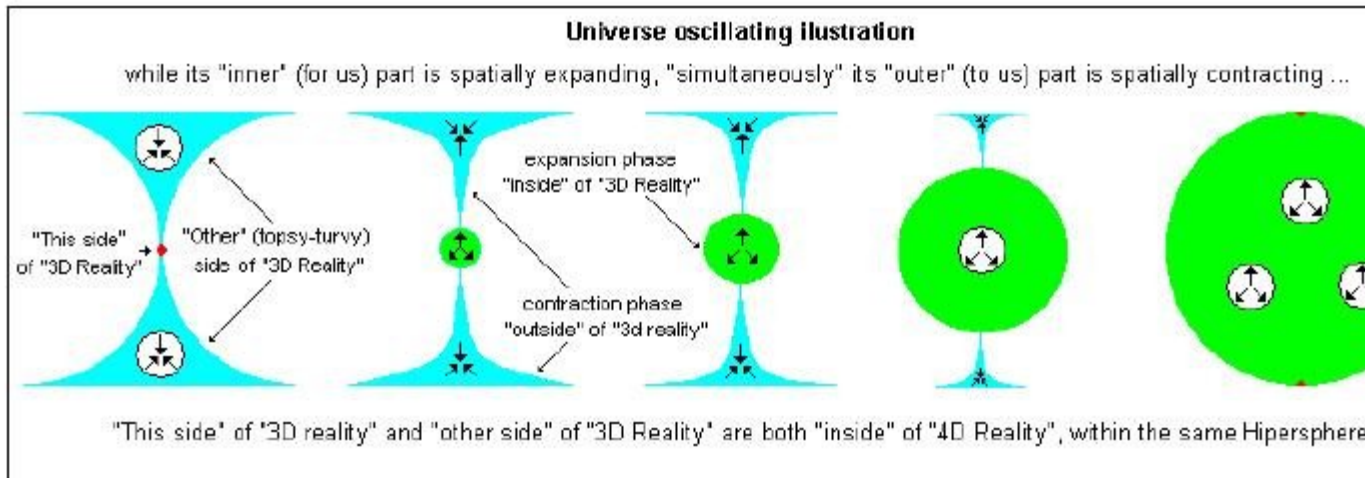
In the model of Eternal Oscillating Universe, in the field of small, in fact "sub-light" speeds, energy expressed in the form of mass is closed in the three-dimensional sense "within" a certain volume, so this kind of motion of matter in the shape of "discreet energy packages" is expressed as a particle with a stationary mass and a corresponding radius. The same "discreet energy packages", or energy quant, moving at speeds less than the possible maximum but greater than the speed at which light travels (photons moving velocity), are open to the "outside" in the three-dimensional sense, since then they are also (more significantly) moving towards the fourth dimension. In the four-dimensional sense, this is again "inside", but at the "other" side of the "inside" in the three-dimensional



sense. We see those as radiation or energy spreading without needing a corpuscular environment. Objects moving at speeds very close to that of light, express the characteristics of both particles and waves (e.g. dualistic nature of light). Hence, objects energy increasing can be introduced either as a mass increase or as frequency increase ...

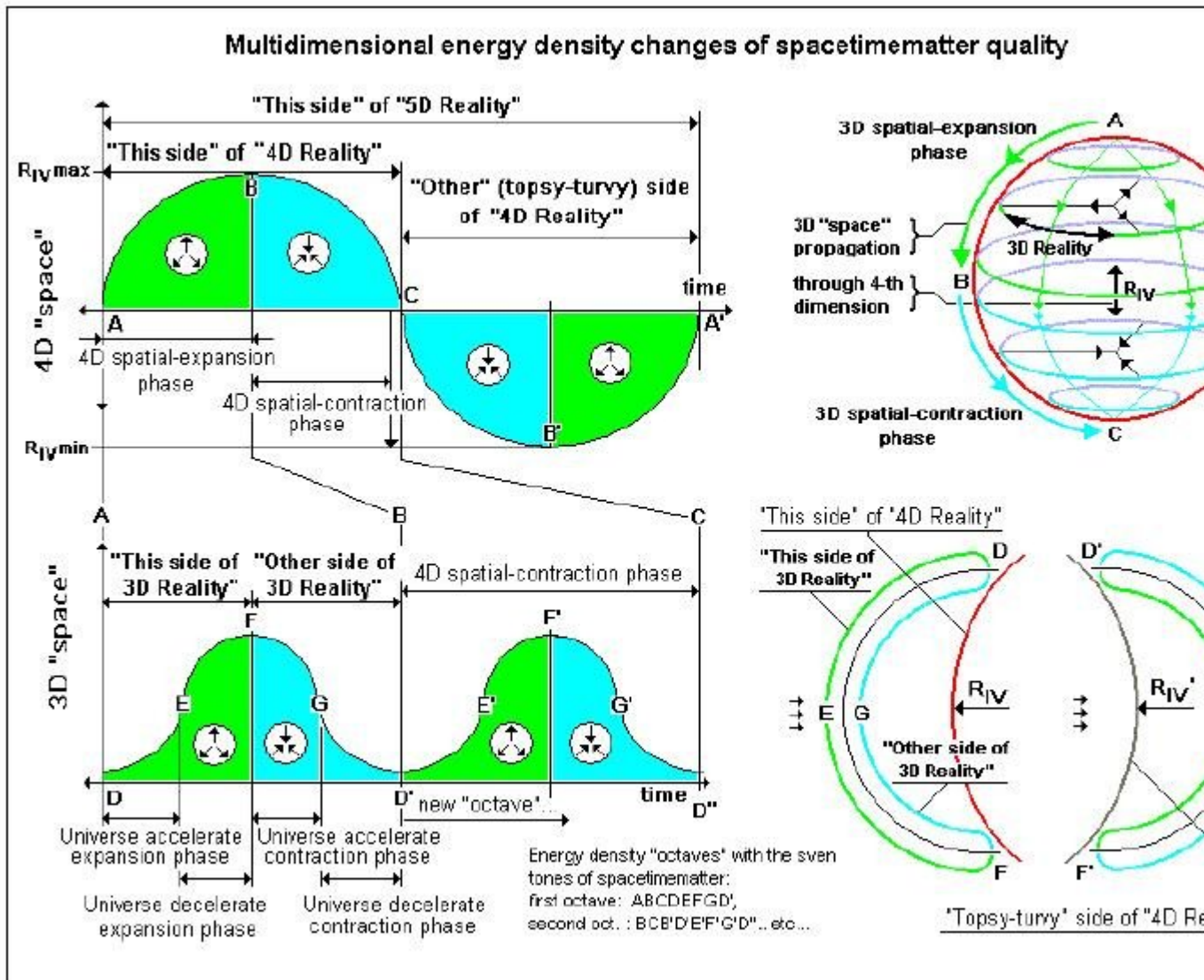
According to the EOU model, the Universe is a closed (into itself) four (at least)- dimensional structure of spacetime, which is currently in the state of spatial-expansion, that being just a phase in the continuing motion between two borderline, extreme-initial states, defined by the qualities of a black and a white hole. ...





What this really means is that we should see the objects in our world, which are FOR US on "the other side" of the maximum radius, as distancing from us, and at a speed greater than the speed of light, where their 'real' speed would have random values for different observers, but an observer who would at the moment be situated "ON THE OTHER SIDE", would see the same objects as APPROACHING him (so the problem of the blue shift isn't really a problem), and at a speed slower than light speed, in our way and in the sense of our spatial-contraction. ... The speed of a moving object that is greater than the speed of light (photons moving velocity) for us, is for "the other side" observer slower than (experimentally measured) light speed. While the world we live in is in the state of spatial- expansion for us, to the "opposite" observer it is in the state of spatial-contraction. When we are in the black hole state, he is in the white hole state. Of course, the opposite applies as well. ...

Therefore our Universe is oscillating, but so that "simultaneously", while its "inner"(for us) part is spatially expanding, at the same time its "outer" (to us) part is spatially contracting. Matter contained in the same multidimensional "sphere", we can quite clearly see now, neither disappears from one (inner) world, nor appears from nowhere in the other "outside" world. It just changes the place of existence according to its form and manner of motion, where black and white holes play an important role, working with their "gravitational-form" mechanisms. Owing to the manner of its motion matter is seen differently, depending on its relative motion in relation to the observer. ...



This kind of spacetime matter organization enable us a very rational "zero point" and other similar kinds of free energy sources explanation. The exclusivity of the model is reflected in that all those (stable) objects are completely equal in terms of TOTAL equality of structural essence of them all, including the "medium" they move in, be they predominantly of corpuscular or of wave nature.

Everything occurring in the Unity (of spacetime matter), happens through an interaction of parts and the whole, one and the same essence expressed by energy density, where the principle of resonant relations introduces order and harmony on a whole scale of sizes.

## 6. New viewpoint to Unity

According to the classic interpretation of the Theory of Relativity, the speeds exceeding the speed of light are absolutely "impossible" (due to the increase in mass, for example). However, Tesla's waves are traveling with superluminal velocity. Tesla wrote.

“The mode of propagation of the currents from my transmitter through the terrestrial globe is most extraordinary considering the spread of the electrification of the surface. The wave starts with a theoretically infinite speed, slowing down first very quickly and afterward at a lesser rate until the distance is about six thousand miles, when it proceeds with the speed of light. From there on it again increases in speed, slowly at first, and then more rapidly, reaching the antipode with approximately infinite velocity...”

Our hypothesis 3 point at entirely new immense “window” to nature. For example, because of increasing velocity, objects mass increase also but, in the point of photons propagate velocity is “only” 27 times its rest mass value (!); “opposite” objects have “inversed” properties – standing object from “herein” have to be seen “therein” as a object with endless velocity; heating on “this side” cause cooling on “other side” and vice versa ...

Regarding our H3 plenty of contradictions with STR postulates can be solved.

With a small modification in the understanding and interpretation of the values present in Lorenz’s transformations, we obtain rather correct and, the most important, not imaginary but quite real values, by using the same mathematical formulas (see Hip.3 for details). Thereby, EDQ model offer us more interesting image than classical science. We can illustrate this using energy conservation law, as a basical law on which all the others are adding up.

Moreover, we are easily permitted to violate the “local” energy conservation law for a “on-this-side-closed” system, and to receive free energy, because the one system must not be closed in multidimensional sense, and so instead we could apply local energy conservation law for an open system with a “other side” source. Considering Tesla waves properties and universe spacetime organization described with our models, we sincerely believe that Tesla’s “Radiant energy device” wasn’t just a dream of “old, infatuated” scientist... Our theoretical investigations demonstrated that Tesla waves (until now, better known as Tesla's Non-Hertzian waves) are presumably another name for the "Evanescent mode" (chapt. 3), and/or Mr. Tom Bearden's "Scalar waves" (chapt.2). Moreover, in our opinion, Tesla waves can be a basic "free" energy "transfer - carriers" in a sense of "outside - inside" energy transformations.

## 7. Teslion as Tesla's waves quant carrier illustration

Official science offers us a fact that EM spectrum ends with a long radio waves band, with the largest wavelength of about 104 meters ! ... What is beyond that range ? ... We know about "brain" EM waves e.g., but their maximal frequency is about 10 Hz, the wavelength of so called "alpha waves" is about  $3 \cdot 10^7$  m, but - that is quite far from the end of the long radio waves range ... Classical science does not have a correct answer as to what is in this EM spectrum "hole" ! However, EDQ model, with some kind of (multidimensional) "Periodic Table of the Elements", offers us a reasonable answer.

“Energy-space position” for the stable object order  $k=9$  was empty for a long period. According to the model, the rest-mass of supposed object is approximately  $1.1 \cdot 10^{-49}$  kg. Considering to Loui de Broulli equation, appropriate frequency is 14,8 Hz. Same object  $k_9$ , in his wave form, takes spectrum of 1 Hz –30 KHz. For a long time, I couldn’t find any object in our reality that would fit, in spite of model prediction, before I found Tesla’s frequency of 11,7 Hz in the Konstantin Meyl’s paper: “Scalar waves” . That was a frequency quite close to  $k=9$  and it triggered my deeper interest in tesla’s work.

"... It is too noted that the phenomenon here involved in the transmission of electrical energy is one of TRUE CONDUCTION AND IS NOT TO BE CONFOUNDED WITH THE PHENOMENA OF ELECTRICAL RADIATION which have heretofore been observed and which from the very nature and mode of propagation would render practically IMPOSSIBLE THE TRANSMISSION OF ANY APPRECIABLE AMOUNT OF ENERGY TO SUCH DISTANCES as are of practical importance. ..." Obviously, Nikola Tesla accentuates that his "energy-transfer-waves" ARE NOT HERTZIAN !!! . As one can see from the EM spectrum picture

given on the page 4, according to the EDQ model, Tesla waves are located in the wavelength area between of 103 to 108 meters. Tesla's certifiably great accomplishments, as well as accuracy of our Model, can be illustrated with Tesla's Canadian Patent 142,352 - "Art of Transmitting Electrical Energy through the natural Mediums", citing: "... It is necessary to employ oscillations in which the rate of radiation of energy into space IN THE FORM OF HERTZIAN OR ELECTROMAGNETIC WAVES IS VERY SMALL. To give an idea, I would say that the frequency should be smaller than twenty thousand per second, though shorter waves might be practicable. The lowest frequency would appear to be six per second, in which case there will be but one node, at or near the ground-plate, and paradoxical as it may seem, the EFFECT WILL INCREASE WITH THE DISTANCE and will be greatest in a region ..." Frequency of 20 KHz corresponds to a wavelength of  $1.5 \cdot 10^4$  m, and 6 Hz can be expressed as  $5 \cdot 10^7$  m. which proves that Nikola Tesla's experimental wavelength range recommendation is almost identical to the EDQ model predictions for stable object order  $k=9$  ! This is a basic reason for me to propose that so called Non-Hertzian waves we call Tesla waves and its quantum conveyer (particle form of the same object) to call Teslion. According to EDQ and EOU models' propositions, there is an analogy between (a number of) different radiation ranges and (a number of) basic stable corpuscles. Moreover, in considering H3, the speed of light is quite reachable for objects with a real remaining mass ( $m_0$ ) and a Photon (e.g. as a quant carrier of classical "Hertzian" EM waves), being a stable object of order  $k=8$  with  $m_0 = 1.6 \cdot 10^{-38}$  kg, and an associated compton wavelength:  $\lambda_c = 1.35 \cdot 10^{-4}$  [m]. Just like a photon, Teslion is a corpuscular form of "matter state", expressed in our Unity as a stable object of order  $k=9$ , with a quite real rest mass:  $m_0 = 1.1 \cdot 10^{-49}$  kg. Wave form of the same object, named Tesla waves, have compton wavelength of  $\lambda_c = 2 \cdot 10^7$  [m], i.e. frequency of 14.8 Hz. Peak energy level of a K9-object, whose wave form of "space-time-matter" entity we called Tesla waves, is  $\lambda = \lambda_c \cdot (1 - v^2/v_{max}^2)^{1/2} = 20.04 \cdot 10^6 \cdot 0.037 = 741480$  m, which corresponds to frequency of 404.59 Hz. As we know, most of "zero point", "free energy", and all different kinds of "overunity" devices (Thomas Moray Radiant device, Floyd Sweet VTA, ..., Michel Mace Solid state energy converter etc.) provide maximal output energy with current whose frequency is about 400 Hz! Amazingly, "Earth - radius - resonant - length" is  $R\pi = 6.38 \cdot 10^6 \cdot 3.14 = 2.004 \cdot 10^7$  m, which is almost equal to Tesla-waves compton wavelength:  $\lambda_c = 2 \cdot 10^7$  [m]. What is the essential difference between Hertzian and tesla's waves?

### 7.1. Hertzian EM waves

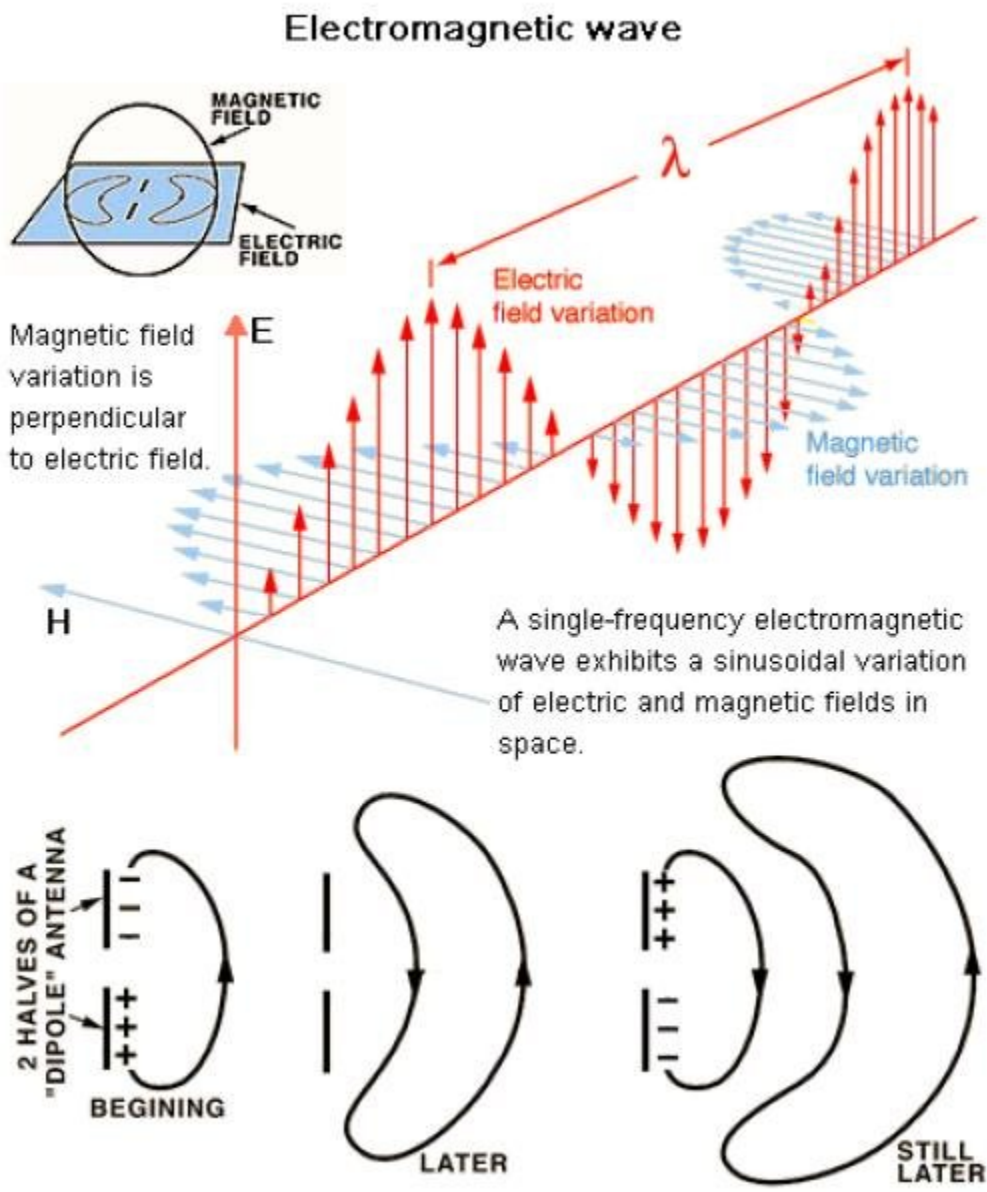
Electromagnetic waves are explained entirely by Maxwell's Equations. He combined two Gauss's Laws (first for electricity: "Charges cause electric fields" - says where electric fields originate; second for magnetism: "Magnetic monopoles do not exist" - says where magnetic fields do not originate!), Ampere's Law (Moving charges change in electric flux causes a magnetic field) and Faraday's Law (Change in magnetic flux causes an electric field) into four equations. From these we can see that charge creates an electric field causing the other charge to move. Moving charge will cause a magnetic field to appear. According to Faraday law, a change in magnetic flux will cause an electric field and, going back to Ampere's Law, change in electric flux will cause a magnetic field etc. Hence, every electric field produced will in turn produce a magnetic field and that magnetic field that is produced will create another electric field. It is obvious that this process goes on and on, all the time while we have accelerated-decelerated moving charges. This is what is called a electro-magnetic wave and Tesla named Hertzian waves. Hertzian waves characteristics are: dissipation of the beam in all directions, quantity of received energy content is dependant upon transmission distance; diminishing with factor of distance squared. It is obvious that they are not suitable for energy supply on great distances.

### 7.2. Tesla waves

By our model's suppositions, Tesla's waves have entirely different structure than Hertzian EM waves. They are not dissipating in propagation through space or earth. Why is it so? We can try to explain this by the

analogy: Let's blow over surface of children balloon. Obviously, there is no point of "energy" concentration on the outer surface of balloon - energy is dissipating. Uncontrary, if we blow into the balloon, he will grow, becoming larger and larger. It is obvious that, in this case, we would be able to use "energy" content of inside cavity, starting from any inside point, of course, if the resonant energy user is "excited".

Considering Tesla's experiments with the Earth, one can conclude that earthed receiver in resonance with emitter is undoubtedly capable of taking energy that way. At concrete, "Tesla's wave" variant, energy propagation is in straight lines, as a laser beam. For that Tesla designed The famous Wardenclyffe Tower. But the experimental work was not completed. He probably realized that he could trigger the energy levels that were able to destroy atom nucleus or cause the collapse of the Ionosphere. I deem that Tesla stopped because of Ethical reasons.



Let's try to describe energy structure of tesla waves.

According to quantum mechanics, energy radiation propagates in a decidedly non-physical manner. It travels not as a particle, nor even as a true wave. It moves from here to there as a quantum wave, typically described as a wave of chance, or a virtual wave.

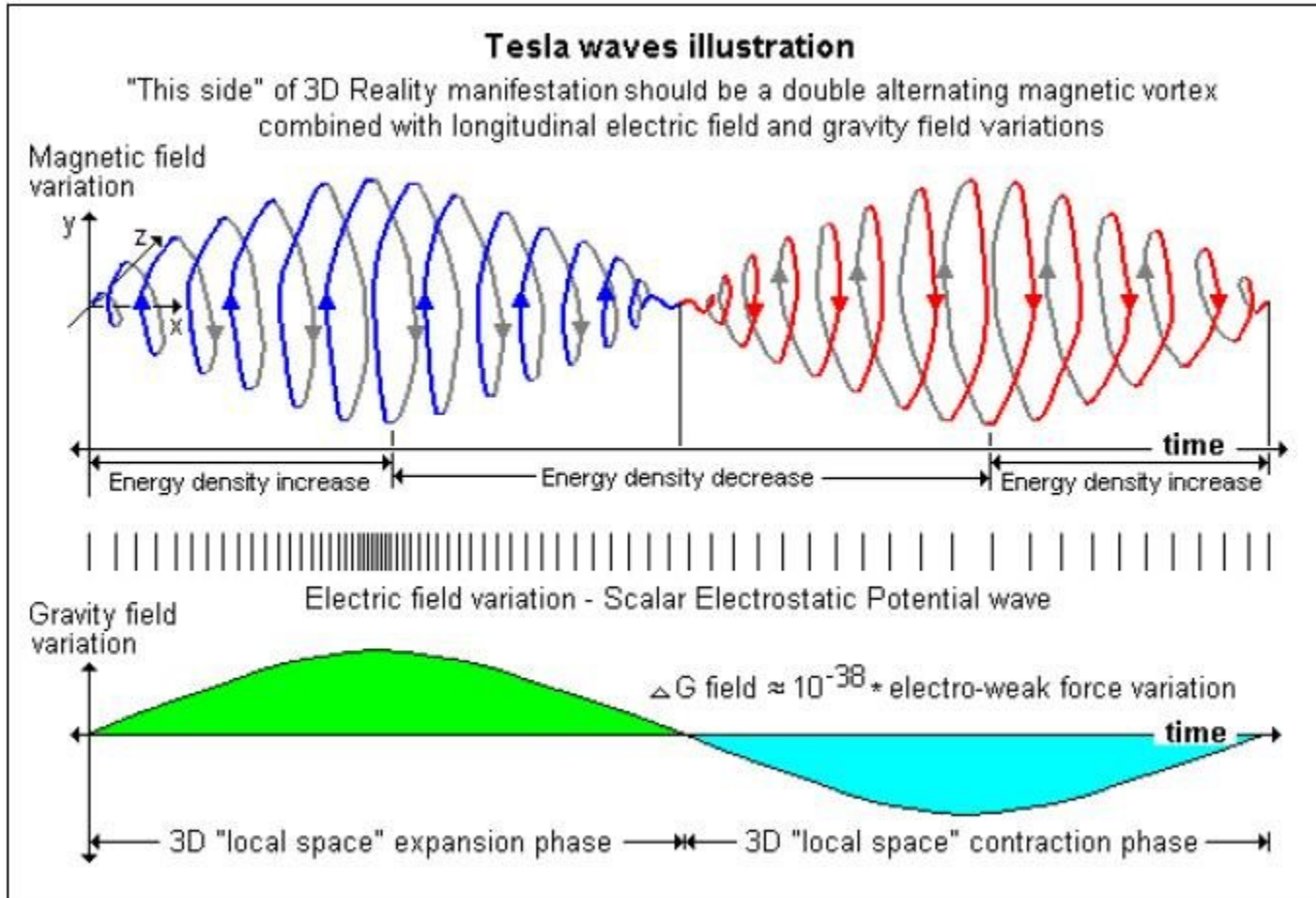
It is very difficult to ones ratio to perceive that the quantum wave has no intrinsic reality, no true existence, other than purely mathematical. It is not a singular particle, it does not travel along a singular definable path; it has no dimensions, no volume; it has no mass. The quantum wave has no singular physicality. It is composed of the summation of an infinite number of smaller waves. It has the "potential" to become a definable electromagnetic wave, but is not strictly a true wave and does not travel a definite path. It is only when energy radiation is observed that it, "pops" into our Reality, either as a photon or as an EM wave, what is entirely dependent upon how the "observer" perceive (measure) it (its energy). If it is measured as a particle, it becomes a particle, if its wave properties are measured, it manifests as a wave. Using our EDQ model hypothesis, this energy fluctuations, described above as a "non-real subjective duality", becomes a "realistic duality", REAL corpuscle-wave structured energy form, hence a "real, physical form of quantum waves". So, this "CorpuscleWave energy structures" can be used to describes the recent view of everything, of all matter and energy entities. Considering universe spacetimematter organization described with our models and previous considerations, we sincerely believe that Tesla waves properties exposed in this paper are quite valid.

## 8. Experimental verification of Tesla waves

To confirm our hypothesis, we have to verify "Tesla waves" – but in essence – we have to verify what? As we said, they are some form of the "Evanescent mode" but according to Mr. G. Nimtz: "Evanescent modes are characterized by extraordinary properties: Their energy is negative, they are not directly measurable, and the evanescent region is not causal since the modes traverse this region instantaneously ...". What kind of energy (negative?) or what interaction-form we can expect to perceive? In previous considerations we conclude that Tesla waves are:

- Stable object order  $k=9$ , hence Teslion`s rest mass is  $m_0=1.1 \cdot 10^{-49}$  kg, or in wave form have Compton wavelength of  $\lambda c=2 \cdot 10^7$  [m], i.e. appropriate frequency is 14.8 Hz,
- "subluminal electromagnetic waves", or in theirs substantial form "superluminal particles",
- theirs energy structure is multidimensional and consequently have theirs own superior way to propagate using over-unity dimensions including "other side" of ours 3D Reality, and spread through multidimensional "space" tunneling "this side" of our Reality.





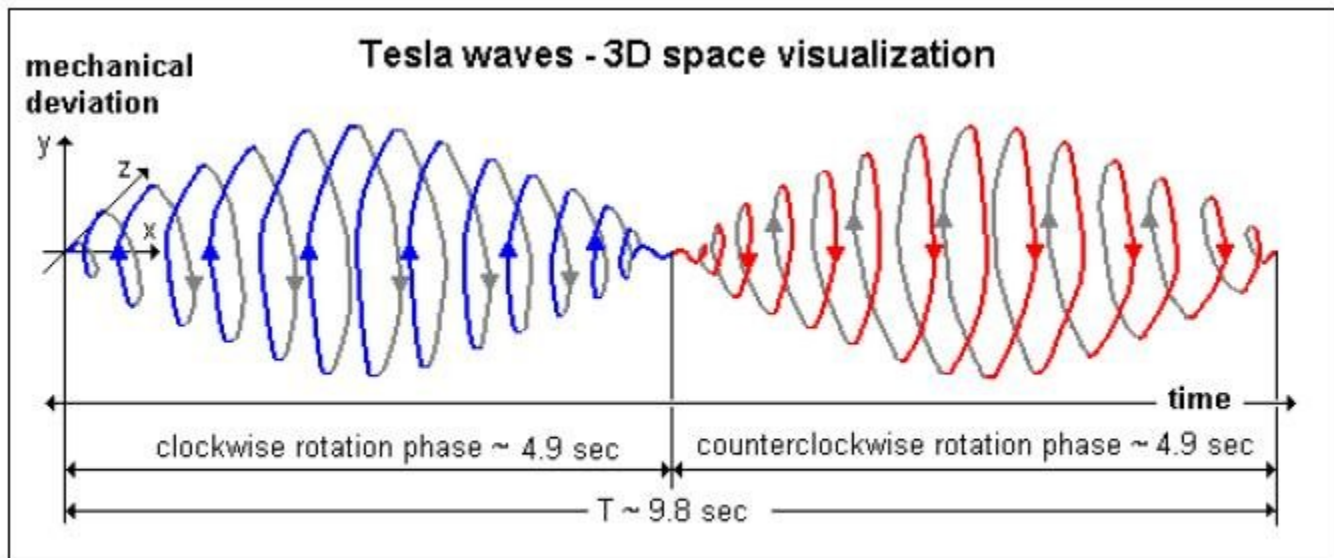
How to detect such objects? Considering all of this suppositions, it is obvious that Tesla waves are not perceivable directly, in their multidimensional form. How then can we prove their existence? However, owing to our EDQ model hypothesis about "wave" to "corpuscle" energy-form transformations, we can propose following. If we emit energy in a wave form, i.e. form of fast electromagnetic wave then, "herein", we can expect their "mirror-projection" energy mode from the "other side" - as a some kind of slow "mechanical" wave form of energy. Moreover this supposed "mechanical" motion should have a two "opposite" phases in time, but one dimension over than the classical sinusoidal moving are. So we have to expect some kind of "mechanical" spiral moving with two different alternating phases accompanied with magnetic vortices, electrical and gravitational field variations... This suppositions are illustrated on the picture given above. Consequently, acc. to our model postulates, for a used EM wave frequency of 288 KHz we obtain a "borders" object Compton-wavelength frequency of  $f = 288 * 10^3 * 0.037 = 10,656 \text{ Hz}$  and from that, for "herein" projected form of the same object we anticipate his "inverted form" as mechanical fluctuation of  $1/f = T = 10,656/1056 = 10.09 \text{ seconds!}$  As we can see energy "transformation" (namely "inversion") is not only quantitative but also a qualitative, apropos frequency is transformed to its "inverse" form, to the time:  $T=1/f!$  This information is very important for understanding a spacetimematter structure. Using Tesla's transformer with resonant frequency of 288 KHz we obtain a real, physical, moving exactly alike ours thoughtful energy-fluctuations described above with time period of 9.8 seconds. In ours experiment, one end of thin, horizontally placed, cooper wire was attached to transformers "top load" and other side was free. Under certain conditions this free terminus of wire move by trajectory exactly as we predicted in our



suppositions.

Hence, in this experiment one can see a quite REAL mechanical, vortices-like wire moving with two different cycle-phases, each in inversed direction of spiral rotating trajectory, with clearly obvious increasing

and decreasing amplitudes. Measured time period of about 9.8 sec is in perfect concordance with time period of 10.09 seconds anticipated in our previous suppositions. This experiment is illustrated with picture given below:



I'm sure that this experiment is FIRST WORLD visualization of TESLA WAVES!

## 9. Instead of conclusion

Tesla waves exist. Nikola Tesla's was utilized them in his experiments. He knew that waves he observed and utilized are quite different from Hertzian waves but nobody did not listen him. Even today, just a few scientists actually believe in his words: "... It is necessary to employ oscillations in which the rate of radiation of energy into space in the form of Hertzian or electromagnetic waves is very small ..." By our theoretical and experimental investigations, Tesla waves have a higher energy-hierarchy position than a Hertzian waves have, because of their higher energy density ordering number. They have a much bigger spacetime matter "resolution" ability, quite different properties and propagation possibilities... Tesla waves are not neither conventional electromagnetic waves as light is, nor usual charged masses streaming as a electrical current is! They are a real corpuscle wave duality, subluminal waves and/or superluminal particles; a energy 'bridge' between "herein" and "therein" side of Reality; a connection way between "this side" and the "other side" and so very possible "energy converters" of any kind of "Zero point, devices; a energy carrier link between light and substance... Instead of any conclusion, as it is usual, We would mention again our supposition that one of Tesla waves "3D shadow" form is a gravity field alike component ...

This could be allusion "What to do next".

Belgrade, November 28, 2003. Goran Marjanovic

