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## INTRODUCTION IN A NEW MECHANICAL THEORY OF THE UNIVERSAL SPACE –TIME BASED ON EVTD<sup>2</sup> ENTITIES

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**Abstract:** This article is about a new model of the whole Universe organization, from the less spaces till the sidereal spaces, by elementary bricks that we called EVTD<sup>2</sup> entities. The EVTD<sup>2</sup> theory is based on the existence of an electromagnetic primary wave (EMW) that permanently format and animate by vibration these elementary entities having dimensions with values in the proximity of Planck dimension. The entities are generated as Energetic (E), Volumic (V), Temporal (T), Dynamic and Deformable (D<sup>2</sup>) and they at the bases of the New Physics of Everything. This one allows a great number of propositions for the understanding of physics phenomena. The proposed theory is sustained to be true on natural existence of simplicity and coherence criteria. The great interest of EVTD<sup>2</sup> entities theory consists in the fact that the structure of whole space – time allows to assemble both mass and energies in the same in space and in time quanta organization. **Key words:** primary electromagnetic wave, elementary entity, and space -time.

### 1. MAJOR ACTUAL DIFFICULTIES IN PHYSICS

Actual physics has great difficulties in explaining several subjects, especially on the question how to put together the relativity theory and the quantum physics? It seems that string theory as well as fields' theory attempt to give a long time expected answer for it. Other questions concern less important bugs in physics but with great interest in a more accurately understanding of phenomenon as: bodies' free falling, inertial and gravitational mass equivalence, mass – energy equivalence postulate of  $E = mc^2$ . What refraction and reflection indexes really represents in geometrical optics? What truly are in sidereal space the black holes? Is the Universe in expansion or in contraction and is it bounded or infinite? Etc.

In fact, scientific spirit often lacks rigor and drives itself to philosophy in assigning the name of particle either to a material identity perceived by its mass and volume and either to another named “photon” which would be simply energetic. Accepting that it has no mass in repose and it is always moving with the “constant” light celerity, this last one must be

different in conditions where such speeds are considered non-realistic for material bodies. In order to get closer observations and theories, is taken the liberty to use, for example, sibyl terms: index, factors, and exotic particles. Elsewhere the interactions between particles are described by means of “photons” without mass, being changed as balls (with mass) between two persons in two boats going away one from the other. The truth on the misunderstandings is often omitted or softened for the most of researchers and only few are advertised on real difficulties of these phenomena understanding. In comparison with their research, for certain Scientifics seems to be lacked of interest to mention the understanding difficulties they have in building their theories. Contrarily, other times being confronted with the impossibility to emit plausible explanations on concrete problems, scientific specific literature makes public all phenomena responsible for the generation of certain enigmas. It is evident that in case of adequate answers, interested researchers could earn at very low prices solutions and future topics to be developed.

## 2. EVTD<sup>2</sup> ENTITIES THEORY

In order to explain, from the point of view of phenomena, the trajectory curvature of the called “photon” around celestial bodies (sun or black holes, for example) this new theory of Everything was initiated and developed. It is based on Energetic, Volume, Temporal Dynamic and Deformable entities that we abbreviated EVTD<sup>2</sup> and it was detailed in the two books [1.] and [2.] written in French. In fact, these EVTD<sup>2</sup> entities are indivisible ones, which could be, after all, the authentic “atomos” mentioned by Democritus.

In fact, this theory is *a model based on the next postulate: in whole Universe exists a primary electromagnetic wave that we can call Electromagnetic Mother Wave (EMW). This EMW is a double (electric and magnetic) longitudinal progressive wave. It would have the greatest frequency (in the neighborhood of Planck frequency) and the highest energetic intensity among all existent electromagnetic waves. So, it will permanently format and animate in vibration entities in accord with its two opposites phase states in all space, from diffuse energy filled spaces till condensed matter and this represents the entities’ energetic (E) composition or more, its mass equivalent in accord with  $E = mc^2$ .*

These entities are formatted in volume: two dimensions are in correspondence with the two actions of electric and magnetic wave composing the EMW and the third one corresponds to the half wave length of the EMW, wherefrom the *Volume (V) entities’ characteristic*. Especially, the diffuse energy is a medium that can be admitted as elastic one. Beginning with the smallest dimensions in atomic nucleus till the biggest ones in sidereal space, all Universe would be consequently organized in *a constructal mode* (more representative here than fractal) on the base of double vibrating state of the elementary brick (EVTD<sup>2</sup> entity). This is infinitely superposing (without intervals) alternately and periodically in all space –time thus creating diffuse energy or condensed matter systems. This is schematically presented in figure 1 where the entities are alternately in phase push and respectively pull (by longitudinal propagation

of EMW). On the other side, between the two-phase states, is quantum time  $\Delta t$  corresponding to Planck’s vibration period ( $\cong 10^{-43}$  s).

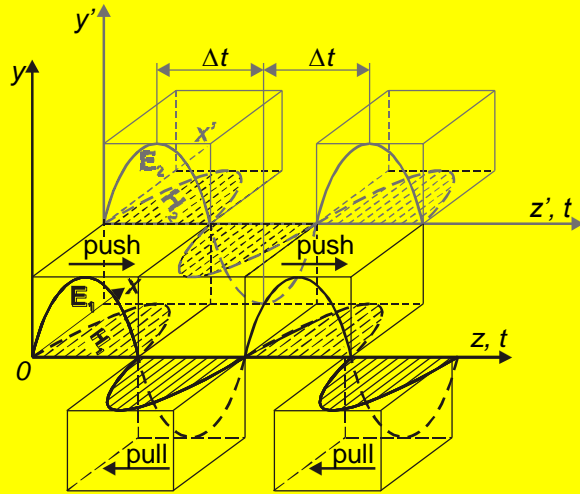


Fig. 1. Permanent organization and formatting by EMW of EVTD<sup>2</sup> entities in space-time structure.

As the two components - electric and magnetic of EMW permanently format and animate the elementary bricks in their double opposite vibrating state, in accord with the action quantum of Poincaré extended in volume and with the Liouville theorem of phase extension, *we can consider that all points belonging to an entity are in phase, what means that they are all living the same event in the very same moment*. So, they are all in phase and non-distinctive (uniform) and, consequently, the *entity’s volume is non-divisible* because there are no possible difference inside it. From here, we understand that all points of the entity form a *Temporal (T) ensemble unified in the same simultaneity of its events’ history*.

The Ether of ancient Greeks is occupied by very little volumes permanently formatted during the double vibrating action of the EMW’s electric and magnetic components on it, what means *in a dynamic manner (D)*. The two components of EMW are progressive waves propagating by successive local elastic deformations and producing elastic shocks – impulsions between the entities. Thus, the generation and the transmission of the electromagnetic effect (EE) could be better understood as a succession of shocks – impulsions along the trajectory. By this approach, the propagation of EE (what means the ancient “photon”) does not need the

existence of a specific strange particle without mass but with corpuscular effect. This effect is generated and propagated a little similar to the transmission of shocks – impulsions produced by an negative electric charge (electron) on EVTD<sup>2</sup> entities in space where it turns around the atomic nucleus as it was already shown in [1], [2], [3], and [6].

Due to the characteristics energy equivalent masse ( $E = mc^2$ ) of the EVTD<sup>2</sup> entities and also due to their triple equivalence masse, energy, electric charge ([2]) they are very interesting for the transmission of EE (light), without using the notion of so called “photon”.

In fact the EVTD<sup>2</sup> property to be deformable devolve from certain characteristics exclusively elastic for the diffuse energy of space –time or deformable milieu for the condensed matter. More, with the well-known equivalence relationship between mass and energy ( $E = mc^2$ ) it is evinced that there is an equivalence relation between energy and the electric charge. On the other hand, in [2] it is proved that there is a relation between unitary electric charge and mass. Thus, there is no contradiction in assimilating to diffuse energy and even to supplementary energy given by the electric charge of a particle the mechanical characteristics of mass.

Taking into account that magnetism and electricity are closely tied we can infer that the magnetic pole could be in certain equivalence with diffuse energy and so, there is an equivalence between masse and magnetism. Consequently, *the EVTD<sup>2</sup> entities in whole Universe, could be considered as very little Deformable (D) energy volumes that are, also, equivalent mass, electric charge and thus, magnetic pole.*

The principal characteristics of the EVTD<sup>2</sup> were briefly presented as to make simpler the minimum understanding for lecturer. In fact the great innovation of Everything theory based on EVTD<sup>2</sup> entities is not simplistic but after getting its logic instruments it becomes simply and with a huge coherence and explanation power for many natural phenomena still unexplained but only observed. The fact that the entire structure of space – time periodically modulated in its metrics organize all mass and their internal volume as well as all intersidereal spaces allows the existence of a quantum

interface between relativity and quantum physics. Thus it would be possible to amalgamate these two great theories as the curved space-time of relativity would be the same as those of condensed matter, which is specifically predominant in quantum physics.

What is to be most appreciable for this *Physics of Everything consists in the wonderful simplification because “photon”, “graviton” and “gluons” for example, are no more necessary for the representation of phenomena that already got an explanation or still are non-understood*, the characteristics of EVTD<sup>2</sup> entities being sufficient. The consequences of this new theory are praiseworthy in the great simplification of actual physics by reducing the number of real or still “virtual” particles necessary for the models allowing a better knowledge of our Universe without generating new contradictions.

It allowed us already explaining the experiment of Michelson and Morley, the light reflection and refraction (the refraction index being the ration of two mediums’ stiffness), the stars’ aberration [1].

The problems of bodies’ free falling, confirmation by calculus of postulate  $E = mc^2$  and also the phenomenological understanding of quanta gravitation or, more, the Casimir force seem to be finally solved by this theory [2].

The four fundamental forces’ unification is considered to devolve from the mechanic work of gravitation (and not from the work of a force or of the space – time curvature) that would be the Mother of three others actions, then considered to be hers daughters. That means that these three last can be of the same phenomenological nature as gravitation *because they are gravitational interactions more or less “busted” by the electric charges, magnetic poles or by the neighborhood of different particles’ mass (weak and strong “forces”)*. *Than, the interaction of gravity must be assimilated with a true mechanic work of double vibration of EMW in the spaces formed of EVTD<sup>2</sup> between and around of considered masses [2]. The same situation is found for the other forces where is no more necessary a certain existence of so-called “photons, gravitons and gluons” because the EVTD<sup>2</sup>*

*entities are simply and coherently sufficient to explain the phenomena generating and transmitting the fundamental interactions.*

As a consequence of quantum space-time and temporal characteristic of the points forming the EVTD<sup>2</sup> entities, it would be necessary to use a complementary quantum geometry, as proposed in [4].

### 3. CONCLUSION

The theory based principally on the existence of an Electromagnetic Mother Wave was very briefly presented above, as well as its great potential and possibilities as an Everything theory in the phenomenological context of Universe.

Firstly, it is suitable to emphasize here its explicative and understanding contribution, non-exhaustive of course, already made evidently in a great number of different physics enigmas' resolution. Secondly it is very important to show that this new Physics does not exclude the classical one, the two being complementary and creating the premises of a complete powerful and coherent theory.

By the explanations given to the Michelson and Morley experiment and to bodies' free falling, the Everything theory is concordant with the relativity theories – limited and general. Also, being based on the quantification of space – time and energy equivalent mass and electric charge, it includes the quanta theory. More, as all spaces are entirely quantified in energy, in dimensions and in time it is effective that there is no theoretical impossibility to amalgamate the relativity and quanta theory (reconsidered on certain points) because from the point of view of phenomena this union is already done.

#### **Introducere în o nouă teorie mecanică a spațiului-timp universal bazată pe entitățile EVTD<sup>2</sup>**

Prezentul articol se referă la un model de organizare a Universului, de la cele mai mici spații până la cele siderale, prin componente elementare pe care l-am numit entități EVTD<sup>2</sup>. Teoria entităților EVTD<sup>2</sup> se bazează pe existența unei unde primare electromagnetice (UPE) care formatează și animează permanent prin vibrație aceste entități având dimensiuni de ordinul constantei lui Planck. Ele sunt generate ca Energetice (E), Volumice (V), Temporale (T), Dinamice (D) și Deformabile (D) și constituie baza noii fizici a tot ceea ce există. Aceasta permite înțelegerea multor fenomene fizice și este susținută prin adevărul natural al criteriilor de simplitate și coerență. Marele interes al teoriei entităților EVTD<sup>2</sup> constă în faptul că structura întregului spațiu-timp permite gruparea masei și energiei în același spațiu și timp cuantificat.

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This theory, based on vibrating state of entities of agglomerated systems of entities is in good agreement with the bases of string theory through similitude with vibrating structure of the particles. The permanent existence of EMW in all space allows a new study on the particles' entanglement. The spatial – temporal principle of causality and the existence of time are not abolished by introducing specific waves proper to Nature by the action of EMW [5].

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