Linear motion of a particle

Absolute motion

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Abstract

The second and third deformation of space are its manifestations that we perceive as matter (see http://viXra.org/abs/1410.0040 and http://viXra.org/abs/1502.0097). In this paper it is described that motion is a form of space deformation, by deduction of forces from the space as motion forces, which are accumulated on the spherical zone of the particle, due to the difference of cohesive pressure in front of and behind it. This accumulation is made by force talantonia (oscillators), as quantum forces, causing harmonic change of cohesive pressure in proximal space (see http://viXra.org/abs/1505.0211).

It is described, here, the motion dynamics and the change that is installed on the gravitational field of the particle, resulting to the ability of detection of the uniform motion. Besides, the motion should be absolute, since the intervals are referring to the absolute dynamic space of the Universe. The maintaining of the accumulated forces, due to the particle speed, is the cause for change of the dynamics of the uniform motion and, hence, of the Physics Laws in inertial systems. Moreover, with the new concept of absolute motion it is considered a natural consequence the contribution of the two parts of monochromatic light in Michelson-Morley's experiment (see http://viXra.org/abs/1602.0220), without the arbitrariness of the constant light speed in inertial systems.

Also, it is defined the timeless speed, at which happen all the phenomena of the Universe. The gravitational red shift of the stars spectrum and the chaotic motion of galactic systems are interpreted, without the assumption of dark matter and energy.

Finally, it is communicated the forecast of Gosdas's Theory of Dynamic Space, that refers to the research of the observatory (Magic telescope on La Palma), in which it is recorded (October 2007) a 4 min delay in high-energy photons (gamma rays) from galaxy Markarian 501. This observation proves that the space contains unsung forces, which are evident in our senses as deformations of space, as the above theory describes.

Accordingly, for the great problem of Physics and Philosophy, «What is the space», there is the answer-solution: «The dynamic space».

1. Motion as deformation of space

Physics considers the motion of a body as a simple change of its distances from other objects, namely considers it as a **relative displacement** in time, which **Gosdas's Theory of Dynamic Space** interprets as **motion** (see http://viXra.org/abs/1502.0097). Thus, motion is compared with another motion (time), resulting in the recycling of the problem and the inability of understanding the **motion phenomenon**. The establishing of time as a **fourth dimension** of **space-time continuum** has further complicated the problem of understanding **Nature**. **Special Relativity** made a mathematical regularization (**Lorentz's transformations**) of problem that resulted from the **Michelson-Morley's experiment**, without interpretation of the essence of physical reality (see http://viXra.org/abs/1602.0220).

Motion will be studied as an accumulation of forces on the **spherical zone** of the **particle**. This mechanism (**extremely fine texture** of **motion**) happens by **deformation** of **space**, namely with deduction of forces from the **dynamic space**, whose **cohesive pressure** is reduced**,** at the same degree as the **motion arrow** ΔP on the particle.

2. The antithesis (opposition) between matter and motion

The **antithesis** (opposition) is evident between **matter** and motion, since matter represents the balance of **empty space hole** (see http://viXra.org/abs/1410.0040), while motion represents the flow. The **spatial** or **right antithesis** (**principle** of antithesis) is a condition of motion (not the **linear antithesis**), namely the **motion force** F is placed vertically to the **elementary forces** f_0, that constitute the **total gravity force** F_0 of the particle (*figure 1*). The sine of angle ω ($sin\omega=F/f'$) between the elementary forces f_0 and the **elementary resultants** f' is equal to the **timeless speed** $u_\alpha=sin\omega$ (see paragraph 7).

The **accelerated force** F is accumulated (as tangent) in the bonds of the **electric dipoles** of **units** onto the meridians of the particle spherical zone, with axis the motion direction and center the particle. This force (as tangent) ensures the verticality of spatial or right antithesis resulting in motion, since there is no balance between motion force F and f_0 of the **particle gravity force** F_0. Radial motion force (linear antithesis) cannot be installed, since it is created a balance between forces F and f_0.
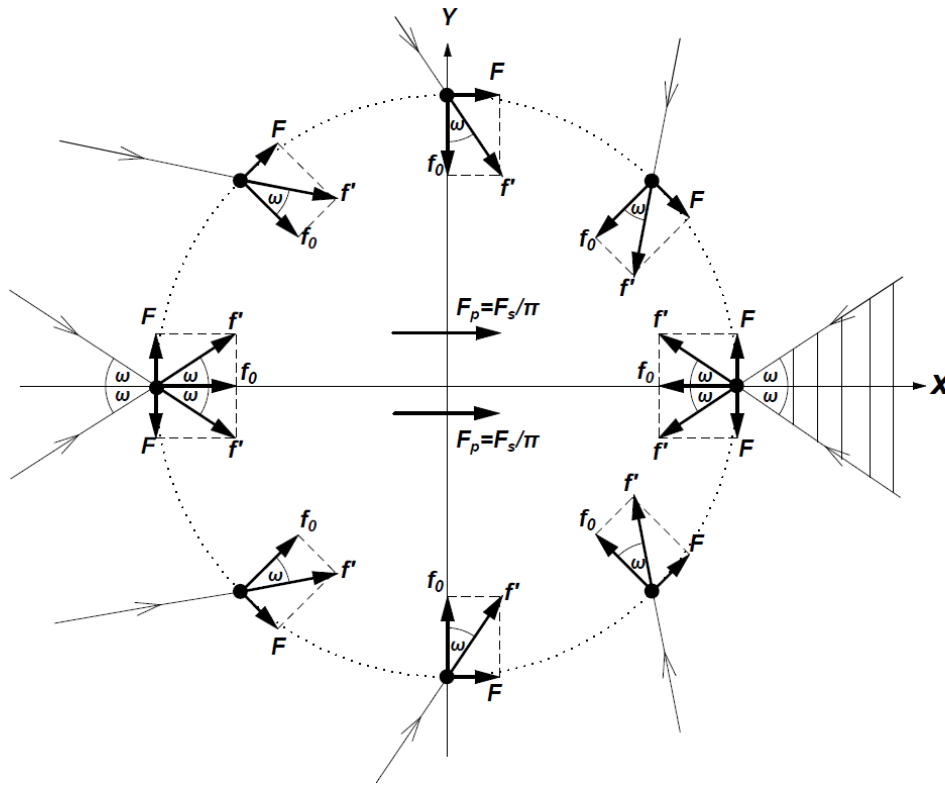
Figure 1*: Formation of particle motion*

3. The motion forces

The **evident forces** of **Nature**, which are described in the above sites (see paragr.1and 2), are the **antigravity force** (**Universal deformation**), the gravity force (**local deformation** of the empty space hole), the **cortex forces** (**geometric** and **electrical deformation**), which are supplemented (see http://viXra.org/abs/1503.0210) by the **nuclear force** (**inverse electric field**) and by the **electric force** (**outer electric field**). These five evident forces of Nature relate to the electric force $F=kL_0$ of the **units dipole**.

These forces (for dynamics of motion) are classified into two kinds of forces. The first kind is the gravitational force F_0 of the particle. The second kind is the motion forces that are installed vertically to the components f_0 of total gravity force F_0 of the particle. Therefore, the **dynamics** of motion is achieved by composition of these two kinds of forces.

4. Accumulation of motion forces
Talantonion of force

The changes, of the electrical-gravitational forces, are transmitted in the dynamic space from unit to unit at **light speed** and they are accumulated on meridians of the particle spherical zone with axis to the direction of motion and as center the particle. For example, due to the **gravity pressure** $P_g=P_{ox}r_1^2/R^2$ (see http://viXra.org/abs/1410.0040) a **pressure difference** ΔP is placed in front of and behind the particle, causing the geometric deformation of the spherical zone and the forces accumulation. In any case, by an **external force** on a body with repulsion or attraction, the deformation of **elastic-dynamic space** is transferred at **disturbance speed**, namely at light speed, on the body particles and is installed on the spherical zone of the particles as a pressure difference ΔP (motion arrow).

The deformation that is installed as pressure difference ΔP in front of and behind the particle as a change of space cohesive pressure is maintained after the stopping of the accelerated force, ensuring the **uniform motion** of the particle (see http://viXra.org/abs/1505.0211).

The **quantum time** $\tau=10^{-5}sec$ (in the **formations region**) is the **accumulation time** of the above forces by the form of **force talantonia** f_τ (see http://viXra.org/abs/1502.0097).

The **quantum energy** $\varepsilon_\tau=h v_\tau=h/\tau$ is $\varepsilon_\tau=6,626\cdot10^{-34}/10^{-5}=6,626\cdot10^{-29}Joule$ is called **talantonion** of **energy**, wherein $h=6,626\cdot10^{-34}Joule\cdot sec$ is **Planck's constant**.

The **talantonion** of **force** will be then $f_\tau=\varepsilon_\tau/L_0$, where $L_0=0,558\cdot10^{-54}m$ is the **dipole length** (see http://viXra.org/abs/1410.0040), so $f_\tau=11,87\cdot10^{25}N$.

Therefore, the energy $\varepsilon_\tau=6,626\cdot10^{-29}Joule$ is the result of the shift at $L_0=0,558\cdot10^{-54}m$ of force talantonion $f_\tau=11,87\cdot10^{25}N$ at the light speed from unit to unit.

Accordingly, the motion force is accumulated (at light speed) on pairs of vertical meridians of the spherical zone of the particle, as **quanta forces talantonia** per $\tau=10^{-5}sec$.

5. Form of motion deformation

The pressure difference $\Delta P=(P_0+\Delta P/2)-(P_0-\Delta P/2)$, which fluctuates from $+\Delta P/2$ in front of and at $-\Delta P/2$ behind the particle, causes the geometric deformation of the particle spherical zone (see paragraph 4) at a pear form, resulting a change of the dipoles length L_0 (lengthening in front of and downsizing behind the particle) and, hence, a respective change of the forces $F=kL_0$, which accumulate and flow endlessly at light speed. The above spherical shape of the zone pulsates harmonically in the form of pear-shaped, as a harmonic oscillation of the elastic-dynamic space (*figure 2*), by **wavelength** $\lambda/2=d=meridian\ diameter\ of\ spherical\ zone$ (see http://viXra.org/abs/1505.0211) and, hence, the motion of the particle is achieved.
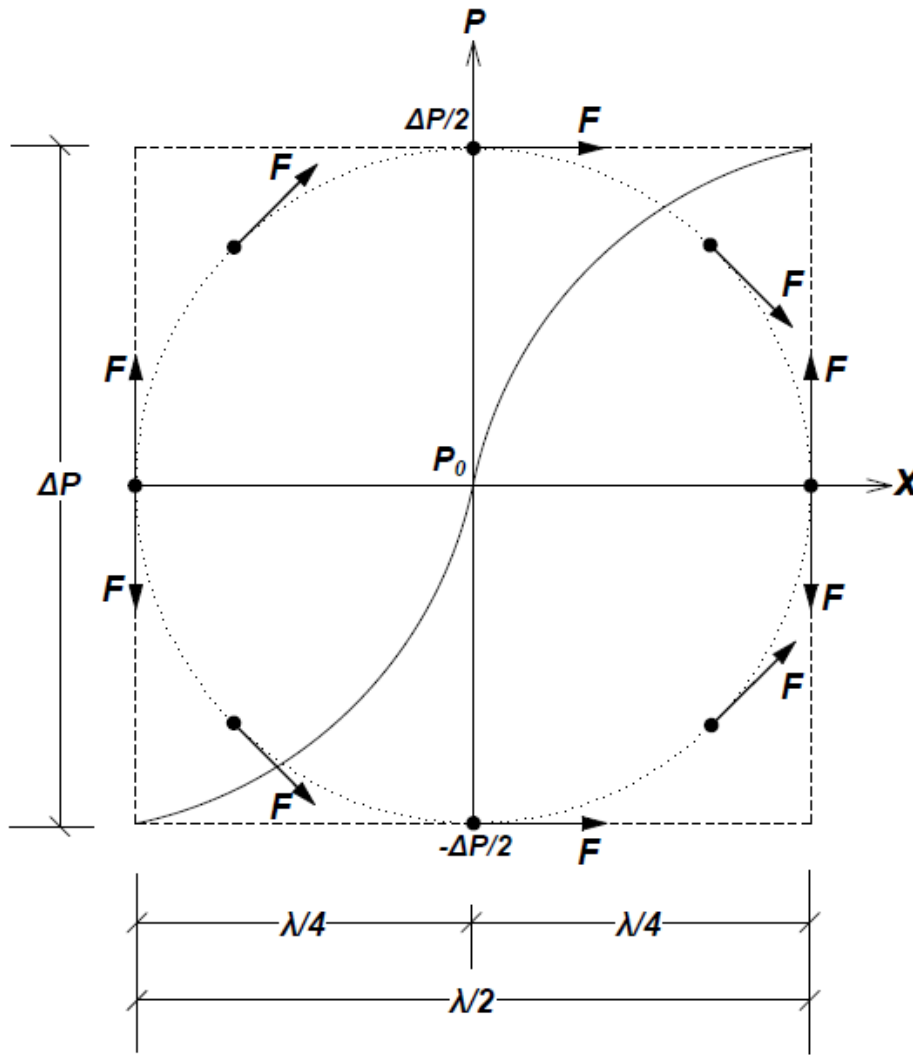
Figure 2: *Harmonic fluctuation of motion arrow $\Delta P=(P_0+\Delta P/2)-(P_0-\Delta P/2)$*

This *ΔP* **fluctuation** (see above site) creates **Gosdas's motion wave** (wave-like form) in proximal area of the particle or, the so-called, **de Broglie's wave-particle**.

The accumulation of motion force F on the **dipole bonds** of the particle spherical zone happens as per $\tau_0=L_0/C_0\cong10^{-62}sec$ (see http://viXra.org/abs/1502.0097). This way of accumulation of motion forces F gives a real interpretation of the *impulse-momentum=Ft* of **classical Physics**, which is the time addition of the exerted force F per second, that is replaced by the natural unit of time, i.e. the **quantum time** $\tau_0\cong10^{-62}sec$ (in the units region), as «click»-shifts of force F from unit to unit at light speed.

Therefore, the accumulation of the talantonia (see paragraph 4) upon the pairs of vertical meridians per $\tau=10^{-5}sec$ corresponds to $\tau/\tau_0\cong10^{-5}/10^{-62}\cong10^{58}$ «click»-shifts of force F. This **admirable number** (10^{58}) coincides with the number of units that structure the **neutron cortex**.

6. Dynamics of particle motion
Final energy and mass of particle

In the above paragraphs it is described the way of accumulation of motion force upon the pairs of vertical meridians of the particle spherical zone as force talantonia.

This accumulation of motion force F takes place in the dipole bonds of the particle spherical zone per $\tau_0=L_0/C_0\cong10^{-62}sec$ with κ «click»-shifts from unit to unit at light speed. If S_p is the interval that traveled force F at light speed with κ «click»-shifts per L_0, then $S_p=\kappa L_0$ and, respectively, the accumulated force upon the particle is $F_s=\kappa F \Rightarrow F_s=FS_p/L_0$.

The force F_s is huge even for the elementary force F, which corresponds to a particle of the body. This huge force $F_s=FS_p/L_0$ is necessary, since the chaotic cohesiveness ($P_0\cong10^{151}N/m^2$) of dynamic space requires a great force for the particle to move. Of course, the body must be free to move, so as to create a flow of motion forces at light speed and an accumulation of forces, as it is described above.

Also, we can consider that the gravity force F_0 is concentrated in a meridian (***Figure 1***), then $F_0=\kappa f_0$ where f_0 the elementary gravity force, which corresponds to a «click»-shift of force F at light speed. Therefore, on each dipole bond of the particle spherical zone, the elementary force f_0 and the motion force F have an elementary resultant

$$f^{'} = \sqrt{F^2 + f_o{}^2}$$

and a **final force** $F_\tau=\kappa f^{'}$. Hence,

$$F_\tau = \kappa\sqrt{F^2 + f_o{}^2} = \sqrt{\kappa^2 F^2 + \kappa^2 f_o{}^2} = \sqrt{F_s{}^2 + F_o{}^2} \Rightarrow F_\tau = \sqrt{F_s{}^2 + F_o{}^2}$$

is the final force of gravity and motion of the particle, which is the new structure of the proximal area, as a **new dynamics**.

In semi circumference $\pi d/2$ of the particle spherical zone (*figure 1*) force $F_s/2$ is accumulated and corresponds to a resultant $F_p/2$ times the diameter d, namely $F_p/2=(F_s/2)2R/\pi R=F_s/\pi$, so $F_p=2F_s/\pi$ is the **resultant force parallel** to the **particle motion**.

The above formula $F_\tau{}^2= F_s{}^2+F_0{}^2$ expresses the **Pythagorean relationship** (*figure 3*) of **Nature's mathematics**. In paragraph 2, **angle** ω is defined equal to $sin\omega=F/f^{'}$ and by putting $F=F_s/\kappa$ and $f^{'}=F_\tau/\kappa$, it is $sin\omega=F_s/F_\tau$. Thus, in Figure 3 angle ω is between the final force F_τ and the gravity force F_0 of the particle.
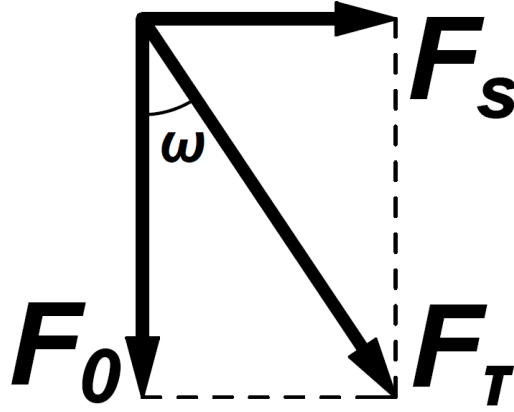
Figure 3: *The final force F_τ of gravity F_0 and motion F_s ($\sin\omega=F_s/F_\tau$)*

The interval that travels the motion force F at light speed C_0 is $S_p=C_0t$. So, the accumulated force $F_s=FS_p/L_0$ becomes $F_s=FC_0t/L_0$.

However, the **impulse-momentum** is $p=Ft$ (see paragraph 5) and consequently:

$$Ft = p \Rightarrow F_s = \frac{C_o p}{L_o} \Rightarrow \boxed{p = \frac{F_s L_o}{C_o}} \quad (1)$$

It is also:

$$E_o = mC_o^2 = FL_o \Rightarrow \boxed{m = \frac{FL_o}{C_o^2}} \quad (2)$$

So the Pythagorean relationship $F_\tau^2=F_0^2+F_s^2$ is transformed as follows: $F_\tau^2=F_0^2+F_s^2$ $\Rightarrow (F_\tau L_0)^2=(F_0L_0)^2+(F_sL_0)^2$, where $F_\tau L_0=E_\tau$, $F_0L_0=E_0$ and $F_sL_0=pC_0$ because of (1), so the **final energy** E_τ of particle (where E_0 is the rest energy) becomes:

$$\boxed{E_\tau^2 = E_0^2 + p^2C_0^2}$$

Also, the Pythagorean relationship is transformed as follows:

$$F_\tau^2 = F_o^2 + F_s^2 \Rightarrow (F_\tau L_o/C_o^2)^2 = (F_o L_o/C_o^2)^2 + \frac{(F_s L_o/C_o)^2}{C_o^2}$$

Due to (2), the **final mass** m_τ and the **rest mass** m_0 are

$$\frac{F_\tau L_o}{C_o^2} = m_\tau \quad , \quad \frac{F_o L_o}{C_o^2} = m_o$$

and together with (1) are replaced in the above formula, which is transformed as

$$m_\tau^2 = m_o^2 + \frac{p^2}{C_o^2}$$

where $p=m_\tau u$ the **final momentum** of the particle, moving at a speed u. So, we end up in the famous **relationship** of **Relativity Theory**!

$$p = m_\tau u \Rightarrow m_\tau^2 = m_o^2 + \frac{m_\tau^2 u^2}{C_o^2} \Rightarrow \boxed{m_\tau = \frac{m_o}{\sqrt{1 - \frac{u^2}{C_o^2}}}}$$

Therefore, with Pythagorean relationship $F_\tau^2 = F_s^2 + F_0^2$ it is demonstrated that in fact the particle mass does not increase, when it moves, but the final force F_τ (of gravity F_0 and motion F_s), which causes the new dynamics of particle motion. This dynamics appears as a **mass-tension** of **space**, which is maintained at the **uniform motion**, with result the change of the **Physics Laws** in **inertial systems** (see and paragraph 8).

7. The timeless speed
Slowing of high frequency photons

If S is the interval, at which a body travels at time t and S_p the equivalent interval of the light at the same time t, corresponding to the duration of accumulation of the force F_s, then $u = S/t$ is the body speed and $C_0 = S_p/t$ the light speed. Dividing these by members it is $u/C_0 = S/S_p = u_a$, where $u_a < 1$ is the **timeless speed** of the body, since it is equal to the dimensionless timeless sizes S/S_p and u/C_0. Moreover, since the intervals S and S_p refer to the **absolute dynamic space** of the Universe, motion must be absolute (see paragraph 8).

The **kinetic force** F_κ of the particle (*figure 4*) is

$$F_\kappa = F_\tau - F_o = \sqrt{F_o^2 + F_s^2} - F_o \ (1)$$

whereby the **kinetic energy** $E_\kappa = F_\kappa L_0$ is equal to work $W = FS$, that is produced by the external force F, moving at an interval S equal to the shift of the particle.
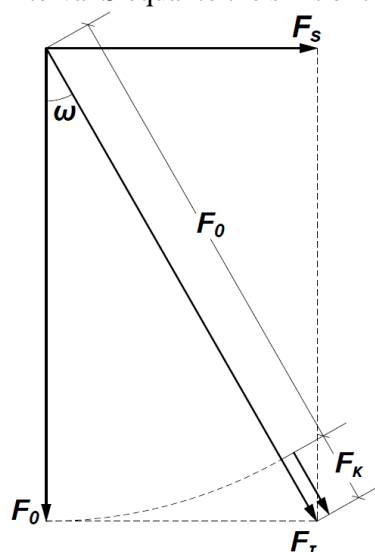

Figure 4: *Kinetic force $F_\kappa = F_\tau - F_0$*

Accordingly, $E_\kappa = W \Rightarrow F_\kappa L_0 = FS$ and substituting F_κ from (1) it is

$$FS = (\sqrt{F_o^2 + F_s^2} - F_o)L_o \ (2)$$

where $F_s = \kappa F$ (see paragraph 6) is the accumulated force on the particle, so

$$\kappa = \frac{S_p}{L_o} \Rightarrow F_s = F\frac{S_p}{L_o} \Rightarrow F_s L_o = FS_p \ (3)$$

wherein S_p is the interval, at which the force F travels at light speed, when accumulated on the particle spherical zone, as the particle travels at an interval S. Then, formula (2) is written

$$S = \frac{\sqrt{F_o^2 L_o^2 + F_s^2 L_o^2} - F_o L_o}{F}$$

and due to formula (3) it is

$$S = \frac{\sqrt{F_o{}^2 L_o{}^2 + F^2 S_p^2} - F_o L_o}{F} \quad (4)$$

Timeless speed is defined as $u_\alpha = dS/dS_p$, so the derivative of S (4) as of S_p (F_0, F, L_0 are constant) is

$$u_\alpha = \frac{dS}{dS_p} = \frac{F S_p}{\sqrt{F_o{}^2 L_o^2 + F^2 S_p^2}} \Rightarrow u_\alpha = \frac{F(S_p/L_o)}{\sqrt{F_o{}^2 + F^2 (S_p/L_o)^2}}$$

and due to $F_s L_0 = F S_p$ it is

$$u_\alpha = \frac{F_s}{\sqrt{F_o{}^2 + F_S^2}} = \frac{F_s}{F_\tau} = \sin\omega \Rightarrow \boxed{u_\alpha = \sin\omega = \frac{F_s}{F_\tau}}$$

However, as it is known (see paragraph 5), $\Delta P = (P_0 + \Delta P/2) - (P_0 - \Delta P/2)$, wherein $\Delta P/2$ the difference of cohesive pressure in front of and behind the particle, that causes a change of volume V in proximal area that produces the **dynamic energy** $V \cdot \Delta P/2$, which is converted into kinetic energy $mu^2/2$ of the particle. Therefore, it is $V \cdot \Delta P/2 = mu^2/2$ and for $d_m = m/V$ (the mass density of space), the **particle speed** u becomes:

$$\Delta P / d_m = u^2 \Rightarrow \boxed{u = \sqrt{\frac{\Delta P}{d_m}}}$$

The timeless speed u_α of the particle will be $u_\alpha = u/C_0$, where

$$C_o = \sqrt{\frac{P_o}{d_m}}$$

is the speed of light (see http://viXra.org/abs/1410.0040), so

$$u_a = \sqrt{\frac{\Delta P / d_m}{P_0 / d_m}} = \sqrt{\frac{\Delta P}{P_0}} \Rightarrow \boxed{u_a = \sqrt{\frac{\Delta P}{P_0}}}$$

Therefore, the timeless speed u_α of the particle is completed as follows:

$$u_a = \frac{u}{C_o} = \sin\omega = \frac{F_s}{F_\tau} = \sqrt{\frac{\Delta P}{P_o}}$$

As ΔP and P_0 change proportionally in the Universal space, it follows that the **Cosmic journey** of a galaxy becomes at **constant timeless speed**, irrespective of the **Universal fluctuations** of cohesive pressure. Also, the **timeless speed** of **light** is equal to $u_\alpha = 1$ and it is a **Universal constant**. This value (of timeless speed) results from the above relationship $u_\alpha = F_s/\sqrt{F_0^2 + F_s^2}$, where there is no gravity force F_0 of the particle in the **E/M wave** ($F_0 = 0$), hence $u_\alpha = F_s/F_s = 1 \Rightarrow u_\alpha = 1$. Actually, the E/M wave moves at light speed, which is achieved by using the whole chaotic cohesive pressure of space, as a pressure difference $\Delta P = P_0 \approx 10^{151}\ N/m^2$ in front of and behind the E/M wave.

The light speed ($C_0=\sqrt{\frac{P_0}{d_m}}$) is determined as the **transmission speed** of the disturbance into the tense dynamic space. So, the **E/M wave-light** could be considered as a **disturbance of the elastic-dynamic space**, where P_0 the cohesive pressure of space and d_m its **Universal constant mass density** (see on previous link).

Dividing the members of $P_{0x}=P_{0p}x^2/R_0^2$ (see above site) by d_m and because $P_{0x}/d_m=C_{0x}^2$ and $P_{0p}/d_m=C_{0p}^2$ is $C_{0x}=xC_{0p}/R_0$, where C_{0x} is the light speed in a region within a distance x from the **Universe center** of radius R_0 and C_{op} the light speed at its **periphery**.

It becomes obvious, that the light speed depends on the space cohesive pressure P_0 and therefore it is not a **Universal constant**, that is, it is a **local constant**.

The **dynamic deformation** of the surrounding area of a **uniform motion** in **inertial system** reduces the light speed C_0, because of the reduction of cohesive pressure P_0. However, as the chronometer motion on the **system** is reduced at the same degree, light speed C_0 measurement by this chronometer is found constant, while in real life the light speed in **material systems** depends on their speed. Moreover, it is proved that **Galilean's transformations**, replaced by Lorentz's transformations in the Special Relativity Theory, are in power and apply for light as well (see http://viXra.org/abs/1602.0220).

However, the light speed $C_0=\sqrt{\frac{P_0}{d_m}}$ is $C=\sqrt{\frac{P}{d_m}}$, where $P=P_0-\Delta P$ the **remaining cohesive pressure** of **space**, reduced by ΔP where ΔP is caused by the accumulated forces upon the **photon structure** of a **frequency** v and **energy** $E=hv$. Therefore, **parallel moving photons** of **different frequency** (energy), reduce locally the cohesive pressure, resulting to move with **different speeds**. So, the photons with higher frequency slow down against parallel moving photons with lower frequency.

This forecast was made by Gosdas's Theory of Dynamic Space from **October 2006** (see bibliography: The Structure and Function of the Universe). One year later (**October 2007**), from researchers at the **observatory** (**Magic** telescope on La Palma), it has been recorded a 4 min **delay** in high-energy photons (**gamma rays**) from **galaxy Markarian 501**, which is half a billion light-years away. Below it follows, in summary, the **theoretical proof** of the **phenomenon**, as formulated by **Professor Physicist N.Gosdas** at congress of **Hellenic Physicists Society** (Kavala, March 2008):

The reduction of space cohesive pressure P_0 that is caused by the accumulated force F_s is equal to force talantonion of fundamental E/M wave, namely $F_s=f_\tau$, due to the **loose connection** of **fundamental E/M waves**, which constitute the photon of frequency v (see http://viXra.org/abs/1505.0211). Therefore, the resultant force parallel to motion of the photon (*figure 1*) is $F_p=2F_s/\pi=2f_\tau/\pi$ (see paragraph 6), exerted on the **cross section** S of radius $d/2=\lambda/4$ (*figure 5*), that is $S=\pi\lambda^2/16$, where $\lambda=C_0/v$ and hence $S=\pi C_0^2/16v^2$. It is noted that the cross section $S=\pi\lambda^2/16$ exists, due to the **spin** of the **photon** around the axis in the motion direction. The pressure that causes the force $F_p=2f_\tau/\pi$ will be then $\Delta P=F_p/S=32v^2f_\tau/\pi^2C_0^2$. The remaining cohesive pressure of space will be $P=P_0-\Delta P$, so the **reduced photon speed** is $C=\sqrt{\frac{P}{d_m}}=\sqrt{\frac{P_0-\Delta P}{d_m}}=C_0\sqrt{1-\frac{32f_\tau v^2}{\pi^2 C_0^4 d_m}} \Rightarrow C=C_0\sqrt{1-\frac{32f_\tau v^2}{\pi^2 C_0^4 d_m}}$.

This observation proves that space contains **unseen forces**, which are evident as deformations of space, such as are described in the above theory. Accordingly, for the great problem of Physics and **Philosophy**, «**What is the space**», there is the answer-solution: «**The dynamic space**».
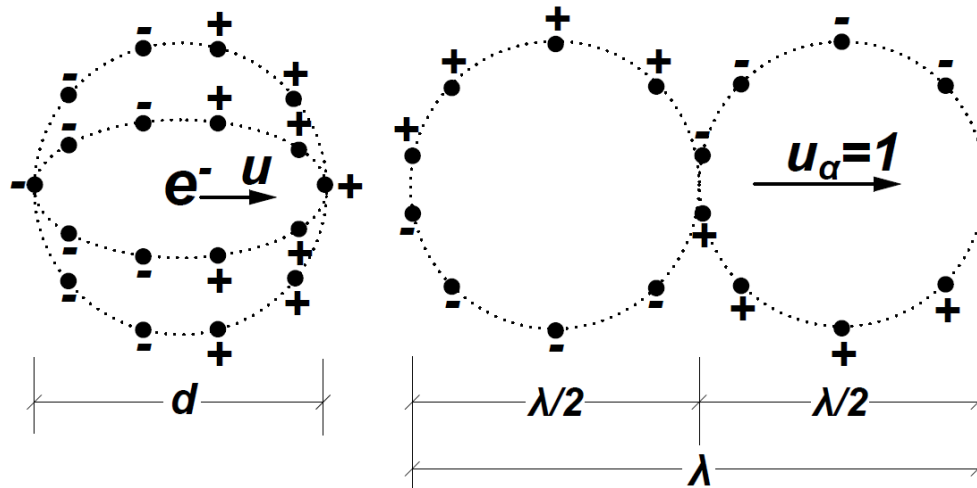

Figure 5*: Correlation of a meridians pair (talantonion) with a fundamental E/M wave (d=λ/2 and $u_a=1$ the constant timeless speed of light)*

8. Dynamics of gravitational field moving particle
Tail of gravity - Absolute motion

The **gravitational field** of the **moving particle** is exercised in the directions of the elementary resultants f' (*figure 7*), forming an angle ω with elementary gravitational forces f_0 of the theoretically stationary particle (*figure 6*), while the sine of that angle is $sin\omega=F/f'$ (see paragraph 2), which becomes $sin\omega=F_s/F_\tau$ (see paragraph 6).

This sine is a very important element for the dynamics of the moving particle, as it gives the timeless speed $u_a=sin\omega=F_s/F_\tau$ (see paragraph 7).
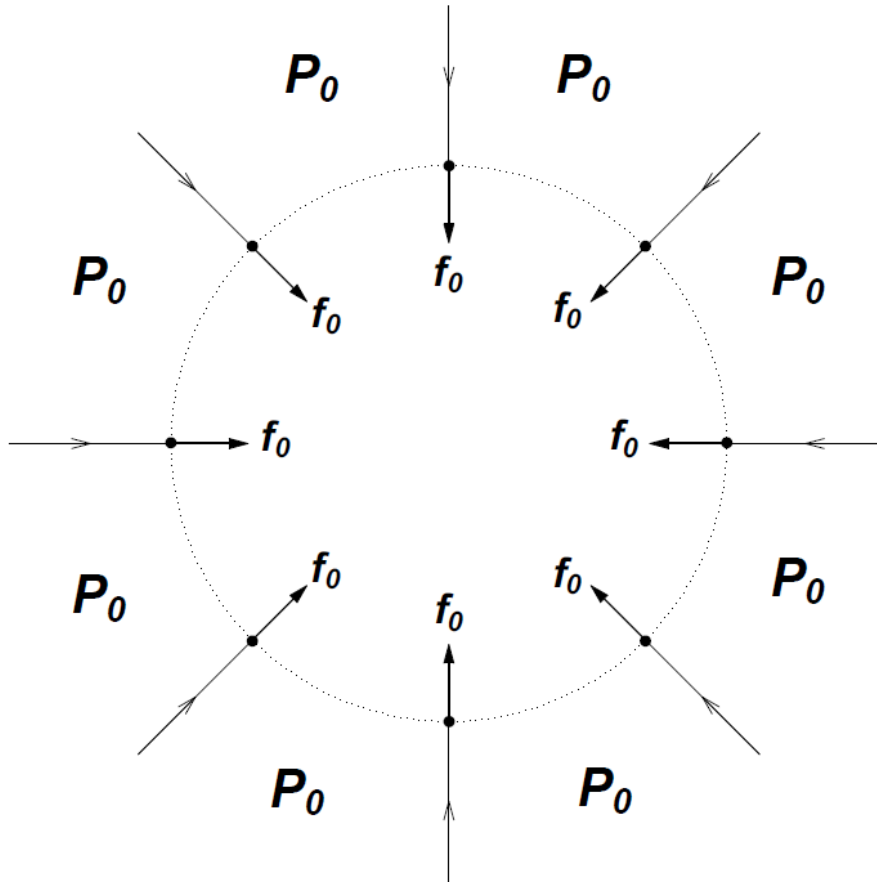
Figure 6: Gravitational field of theoretically stationary particle (P_0 is the local cohesive pressure of space and f_0 the elementary gravitational force of the particle)

The pressure difference (see paragraphs 4 and 5) $\Delta P=(P_0+\Delta P/2)-(P_0-\Delta P/2)$ of space cohesive pressure (fluctuates from $+\Delta P/2$ in front of and at $-\Delta P/2$ behind the particle) causes the geometric deformation on the particle spherical zone, the accumulation of forces and, hence, the particle's motion.
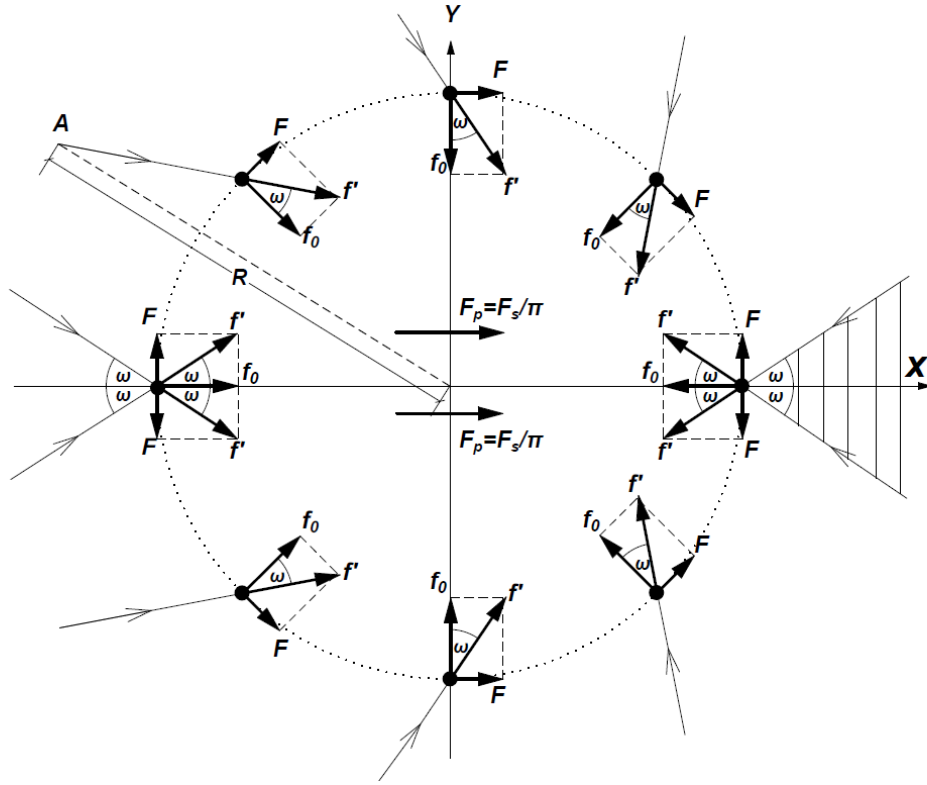
***Figure 7**: Gravitational Field of moving particle ($sin\omega=F/f'$)*

The fluctuation of ΔP begins by the dilution of **gravitational tensions** in front of the particle (namely a reduction of gravity pressure P_g and an increase of cohesive pressure P_0), since gravity is created by forces of the dynamic space. The opposite happens behind the particle, where the thickening of gravitational tensions increases the gravity pressure P_g and decreases the cohesive pressure P_0 (see http://viXra.org/abs/1505.0211). We observe in figure 7 the dilution of tensions in front of and the thickening of them behind the particle, with a corresponding reduction and an increase of gravity pressure P_g, wherein the extensions of elementary resultants f' create an increased **gravity cone** behind (left in the figure 7) and a reduced gravity one in front (right in the figure 7).

In the **shaded cone** in front of the particle there is no gravity pressure and the cohesive pressure is P_0 of space. The cone behind the particle, where there is **gravity** from both **hemispheres**, is called **tail** of **gravity**, whose width is the cone angle 2ω, where $sin\omega=u_\alpha$ the timeless speed of the particle.

Once more, the opposition (principle of antithesis) of space structures, caused by the opposition of the two hemispheres, is indicated in the two cones. In Figure 7 it is noted angle ω of timeless speed $u_a=sin\omega$, so for $\omega=0 \Rightarrow u_a=0$, i.e. in the theoretically stationary particle (*figure 6*), of course, there are no cones. For $u_a=1$, namely the speed of light, $u_\alpha=sin\omega=sin90^o=1 \Rightarrow \omega=90^o$. The formation is now the **autonomous motion** of the **E/M wave** (will be developed at a next paper), whereby the cone in front is the entire half-space without gravity (*figure 8*), while the cone behind is widened with enhanced gravity.
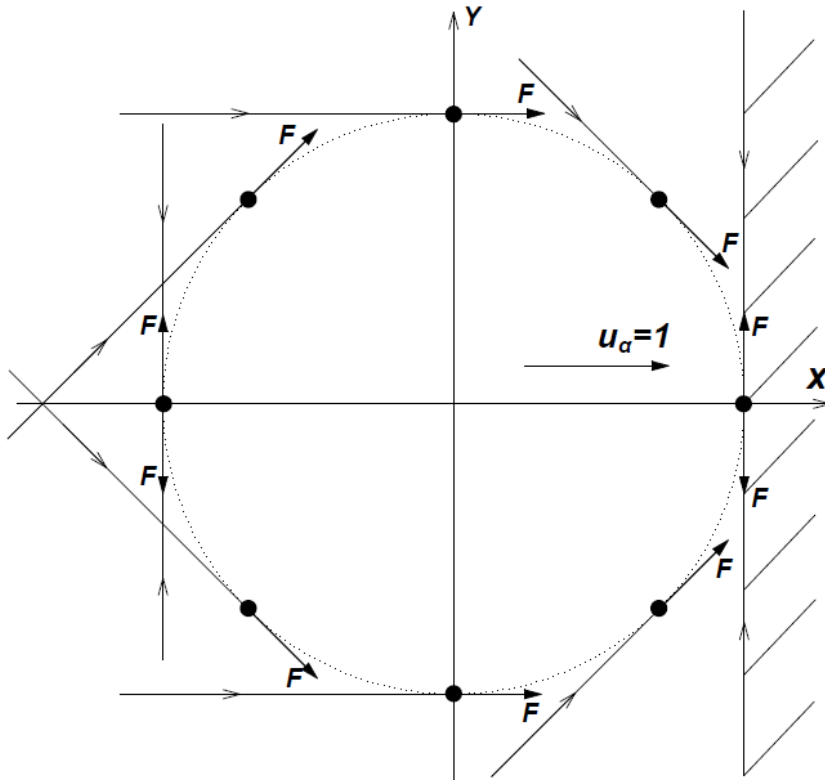
Figure 8*: Gravity field of autonomous motion of E/M formation-spindle (u_a=1 timeless speed of light)*

Therefore, light has gravity only in the behind **half-space** and proof of this is the **gravitational redshift** of the **stars spectrum**, while **gravitational blueshift** cannot happen, since there is no gravity in front of the half-space of the E/M wave.

The gravity pressure P_g at the point A (*figure 7*), in a maximum approach, is $P_g=F_\tau/4\pi R^2$ wherein $F_\tau=\kappa f'$ (see paragraph 6) and R the distance from the particle. If this point is within the gravity cone (tail of gravity), then it is attracted by both hemispheres at a double final force F_τ and, therefore, the gravity pressure P_c (within the cone behind) is $P_c=2P_g=2F_\tau/4\pi R^2$, so $P_c=F_\tau/2\pi R^2$, namely double than the outside space. It is noted that, the gravity tail of galactic systems is one of the causes for their chaotic motion. Therefore, the search for **an unknown form** of «**dark**» **matter** and **energy** in the Universe is no longer necessary (see http://viXra.org/abs/1410.0040).

The **gravity deviation** to behind of the moving bodies (with the formation of gravitational tail) is a criterion to finding the **absolute motion** with the help of a pendulum. Therefore, the **inability** of **detection** of the uniform motion in inertial systems has been lifted.

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