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Velocity law under peer-review

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ABSTRACT

By more than a decade, the contemplation on the velocity law took me as far as the human mind could inform of, where I wondered at that time; what is the relationship between all of the time, space and velocity?. This question was frequented my imagination impotent, whenever I tried to understand the extent of the relation between these two numbers: zero and one. The following questions are the source of inspiration: At first glance, may not seem to us that there is a relation between these questions and the velocity law, but if we tried to conduct a scientific investigation on the velocity law during a theory of the high credibility, we are surprised how the trick that brought to us by classical physics. I firmly believe that the answer of these questions will strongly solve the biggest enigma in our live. Let's see how we will be able to get the Mared (giant) out of its bottle, through this research.

Introduction

All of us know that the kinetics and dynamics were founded on a solid base of mathematics that are consistent with the logic. This logic has produced the golden rule for physicist community in the acceptance of emerging scientific theories; It is the rule that says: the credibility of any theory depends on its ability to predict future events.

I have no doubt that the velocity law had predicted all future events, but it is very unfortunate that we find someone tells us that a major theory, such as the Pythagorean theorem was able to break the bonds of the relationship between logic and the velocity law.

May not disclose a secret, if I say that what invited me to take the Pythagorean theorem as a firmly scientifically reference frame in this regard, where we find that the Pythagorean theorem[i] was and is still able to produce the full fact of velocity law (amount and direction) without clever tricks or optical illusions.

Whatever the case, it is unavoidable to say that we have a major problem in our ability to understand the absolute truth in all its aspects; the problem that we see, is always lying in wait for us whenever we stood on the interval line between this logic and that golden rule over there.

Methodology

In this research I will depend on a private methodology relies on **the equivalence principle**; where we can get the logical results able to predict the future events. For example; when we have a good and clear answer for a big question (looks like; what will happen to the universe when its velocity reaches a value of zero? Do it collapse, in the sense that it will disappear from existence? Or it will collapse in form to be renewed in terms of content?

Research hypothesis

I assume that we have a decelerated velocity (v) in an expansion universe with increasing time (t) and expander space (r). See figure 1.

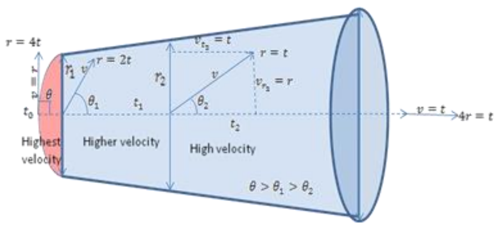

Figure 1: The development of velocity vector along expander universe

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Research purpose

This research aims to answer the following questions:

a) Is the velocity law logical in terms of mathematics?

b) Can we simulate the velocity law during the Pythagorean theorem?

c) Is the velocity law able to predict the future of the universe?

Relativity speed

From Galileo point of view, there is a difference between velocity and speed, where he decided that the speed law is a sum of two vectors[ii];

S= V+u .... (1)

Where V is a velocity of a ship on the shore, and u is a velocity of a fly in the sky. See figure 2 a. Finally, he used the Pythagorean theorem to find the value and the direction of speed (the velocity). See figure 2 b.

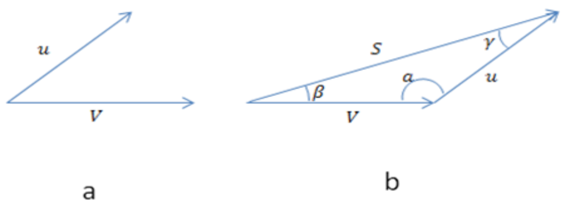

Figure 2: Galileo view about velocity

By this way, Galileo could define the direction of the relativity speed (S) and he decided that the value of S is the velocity of the fly relative to the ship. But these good

By this way, Galileo could define the direction of the relativity speed (S), and he decided that the value of S is the velocity of the fly relative to the ship. But these good results were not satisfactory to any physicist, because it has no reference frame. So, Einstein decided that the law of relativity speed should be given by the following formula[iii]:

$S = \frac{V+u}{1+(Vu/c^2)}$ .... (2)

where he used the light speed (c) as a reference frame. But Einstein also could not succeed in determining the value of speed without the Pythagorean theorem, so he decided that the value of his speed is given by one of the derivatives of the Pythagorean theorem:

$S = c\tan(a+\beta)$ .... (3)

By these good efforts, Galileo and Einstein could both determine the value and direction of their speed, but for me and others, the right direction of that speed is unknown, because we don't know the direction of Galileo's ship or the direction of the light. Therefore it was necessary to adopt a well-known reference for all people. Hence, suppose that the Cartesian coordinates (In collaboration with the Pythagorean theorem) are the most appropriate way to determine the speed vector, see figure 3, where we can capture a clear picture of the features of this speed by the following formula:

$S = s_y/sine\beta$....................... (3)

In spite all of the ideas that have been given through these three scenarios outlined in each of (1), (2) and (3), we remain unable to determine the value of speed, because the x-plane and y-plane can't be identified by a specific scalar quantities.

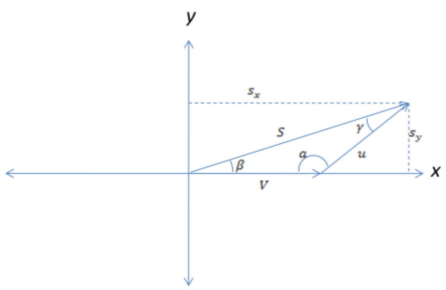

Figure 3: Speed on Cartesian coordinates

To solve this problem, we have to put figure 3 on the space-time net, where we can determine the truth value and direction of this speed by one picture. See figure 4.

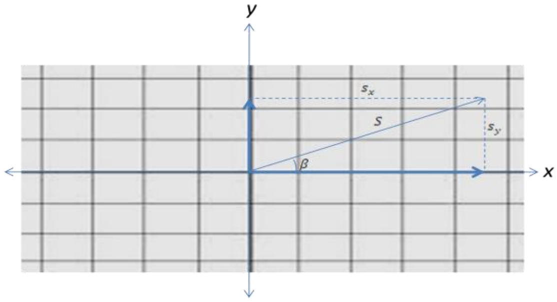

Figure 4: Value and direction of speed

Angular speed

Regardless of the overall variation in the concepts of scientists in both of speed $(\boldsymbol{S})$ and velocity $(\boldsymbol{v})$, I see that all speed patterns can be reduced to the concept of one; (it is the rate of change of the object's position)[iv], where we can form three types of this force:

$\boldsymbol{linear\ speed};\quad \boldsymbol{S = D/t}$ .... (4)

$\boldsymbol{rotation\ velcity};\quad \boldsymbol{v = \frac{r}{t} = \frac{dr}{dt}}$.......... (5)

$\boldsymbol{orbital\ velocity};\quad \boldsymbol{\omega = \frac{S}{t} = \frac{dS}{dt}}$ .... (6)

where $(\boldsymbol{D, r\ and\ S})$ are types of covered distance that measured by meters, and $(\boldsymbol{t})$ is a taken time which measured by seconds.

Of course, we can type another form of orbital velocity $(\boldsymbol{\omega})$ when we want to use angle $(\boldsymbol{\theta})$ instead of distance, then the unit of this force is a radian per second $(\boldsymbol{rad/s})$:

$\boldsymbol{\omega = \frac{\Delta\theta}{\Delta t} = \frac{d\theta}{dt}}$ .... (7)

where we find that $\Delta\boldsymbol{\theta}$ is a change of sector ((S) the total distance travelled) divided by the change of the radius $(\boldsymbol{R})$ of the orbit:

$\boldsymbol{\Delta\theta = \frac{\Delta S}{\Delta R}}$ .... (8)

While we find $\boldsymbol{R}$ in the uniform orbital motion is constant, we find it changeable in the non-uniform orbital motion, where we discover that the sector of any motion on orbit as a curve tangent of angle:

$\boldsymbol{\theta = \frac{2\pi R}{R} = 2\pi\ rad}$ .... (9)

where we find the full sector of circle (circumference) is given by :

$\boldsymbol{S = 2\pi R = distance}$ .... (10)

But the object on the rotation motion is subjecting to two types of this force; tangential velocity $\boldsymbol{v_t}$ and central velocity $\boldsymbol{v_r}$, where we can obtain the tangential velocity by the following derivation:

$\boldsymbol{v_t = \frac{\Delta\theta}{\Delta t} = \frac{d\theta}{dt}}$ .... (11)

and we can obtain the central velocity by the following derivation:

$\boldsymbol{v_r = \frac{\Delta r}{\Delta t} = \frac{dr}{dt}}$ .... (12)

Topical speed

We note that when we want to analysis any one of the above formulas, we will discover that we have the same formula of (4);

$\boldsymbol{\omega = \frac{\theta}{t} = \frac{S}{t} = \frac{2\pi R}{t} = \frac{D}{t} = \frac{r}{t} = \frac{meter}{second} = v}$.......... (15)

Therefore, we can deduce that we can picture all forms of velocity as a topical speed:

$\boldsymbol{v = \frac{r}{t}}$ .... (16)

In this way, we can rely on a uniform law for such force (velocity), which consists of two components; (direction and displacement), where we can determine the direction by a vector of this force $(\vec{\boldsymbol{v}})$ and the amount of the displacement by a value $|\boldsymbol{v}|$ of the this force.

But to do that perfectly, it must be concerted the efforts of both Galileo, Einstein and Pythagoras together, where we can rearrange the picture of the velocity progress in the universal expansion (figure 1) by another way, as seems in figure 5.

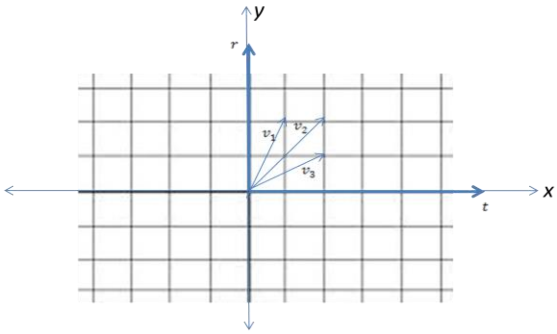

Figure 5: Concert of efforts

In figure 5, we note that we have five velocities with five vectors; ($\boldsymbol{v_0, v_1, v_2, v_3}$ ***and*** $\boldsymbol{v_4}$) and an angle ($\mathbf{22.5}°$) separates between it, where we find $\boldsymbol{\theta_{rt} = 90°}$.

Here, I have no need to remember that the velocity is a force, where $\boldsymbol{V_t}$ should be indicated so as the radius ($\boldsymbol{R}$) of circular orbit; it is necessary in order to remain in constant contact between central mass and the orbital mass, where we find $\boldsymbol{V_t - V_r = 0}$, while we find $\overleftarrow{\boldsymbol{V}}$ is perpendicular to $\boldsymbol{V_r}$ and tangential with the direction of orbital motion at any time. See figure 6.

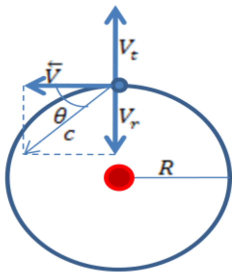

Figure 6: $\boldsymbol{F_{12} = V_t\ ,\ F_{21} = V_r}$

It is proved by Pythagorean theorem: $|\overleftarrow{\boldsymbol{V}}| = \boldsymbol{c\ cosine\ \theta}$, which means that the affecting forces on a moving mass have a same value in different directions. (At any time $\overleftarrow{\boldsymbol{V}}$ is perpendicular to $\boldsymbol{V_r}$ and $\boldsymbol{V_t}$). We have to remember that we have a constant velocity in this case (uniform circular motion), in meaning that $|\overleftarrow{\boldsymbol{V}}|$ is not changeable at any time, also the direction of $\Delta \boldsymbol{V}$, despite the fact that the $\overleftarrow{\boldsymbol{V}}$ is always changeable.

But when we consider that $\boldsymbol{V_r}$ is perpendicular to $\boldsymbol{V_t}$ (as common)[v], we note that the position of orbital mass is swimming out of orbit and the $\vec{\boldsymbol{V}}$ is not tangential with the orbit[vi]; where we find (due to figure 7): $|\overleftarrow{\boldsymbol{V}}| = \boldsymbol{V_r\ /sine\ \theta}$ and $\overleftarrow{\boldsymbol{V}}$ isn't tangential with the direction of orbital motion at any time. Then we can discover a common mistake; $|\boldsymbol{V_r}| < |\overleftarrow{\boldsymbol{V}}| > |\boldsymbol{V_t}|$ at any time, which is not right. See figure 7. But, to avoid this wrong conclusion we must distinguish between the passage of time and the change in the units of seconds in the proportions of the units of meters; $\Delta \boldsymbol{V} \neq \Delta \boldsymbol{R/half\ past\ ten - ten\ o'clock}$. It just equals $\Delta \boldsymbol{meters}/\Delta \boldsymbol{seconds}$. With uniform circular motion, we have a constant quantities and uniform changeable vectors.

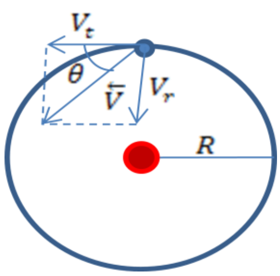

Figure 7: the common conception of $\vec{\boldsymbol{V}}$

In order to prove his point of view, Mr. Newton produced a wrong (golden rule) which says; acceleration $(\boldsymbol{a})$ in the uniform circular motion is always directing to centre of orbit, and for that he deuced that the direction of $\Delta\boldsymbol{V}$ is the same direction of acceleration, where we discover that the direction of this vector $(\Delta\boldsymbol{V})$ is differently proportional to the velocity, while we know that the truth says; the direction of acceleration is always directly proportional to the direction of velocity, see figure 8, where we note;

a) $\boldsymbol{v} > \boldsymbol{a} \rightarrow \boldsymbol{t} \geq \mathbf{1}$, or, $\boldsymbol{v} < \boldsymbol{a} \rightarrow \boldsymbol{t} < \mathbf{1}$.

b) $\boldsymbol{a} < \boldsymbol{v} < \boldsymbol{r} \rightarrow \boldsymbol{t} > \mathbf{1}\ \boldsymbol{second}$.

c) $\boldsymbol{a} > \boldsymbol{v} > \boldsymbol{r} \rightarrow \mathbf{0} < \mathbf{t} < \mathbf{1}\ \boldsymbol{second}$.

d) $\boldsymbol{t} = \boldsymbol{v} = \boldsymbol{a} = \boldsymbol{r} \rightarrow \boldsymbol{r} = \boldsymbol{t} = \mathbf{1}\ \boldsymbol{second}$.

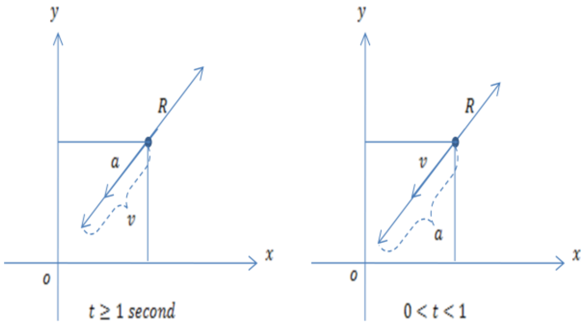

Figure 8: relation of $\boldsymbol{R}$ $\boldsymbol{to}$ $\boldsymbol{v}$ $\boldsymbol{and}$ $\boldsymbol{a}$

Therefore, when we observe the orbital motion in our solar system, we find that the radius of orbit is directly proportional to the total time of motion (distance covered) and inversely proportional to the acceleration and velocity.

For first glance, it seems that this proposal is fully consistent with Newton's second law, but the truth is much different when considering the reality of planetary motion accurately, where Newton's second law says; acceleration is directly proportional to square of velocity and inversely to the radius of orbit; or, directly proportional to the radius of orbit and inversely to square of time; due to :

$\boldsymbol{a} = \frac{\boldsymbol{v}^2}{\boldsymbol{r}} = \frac{\boldsymbol{r}}{\boldsymbol{t}^2}$ ....(17)

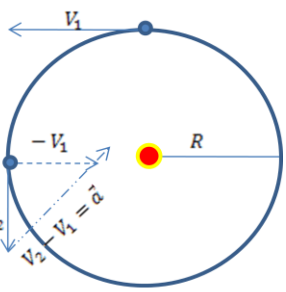

Figure 9: direction of acceleration

Overall, in the uniform circular motion, we find the value of $\boldsymbol{V_1} \neq \boldsymbol{R}$, and in order to ensure that the vector of $\Delta\boldsymbol{V}$ is directing to the centre of orbit, the value of $\boldsymbol{V_1}$ must be equal $\boldsymbol{R}$, where it is rarely due to velocity law, and impossible in the universal motion. See figure 9.

Velocity law

When we return to figure 1, we can deduce that the velocity (in its value and vector) is seeming as a space is a function of time[vii]; $\boldsymbol{v} \equiv [\boldsymbol{r} = \boldsymbol{f}(\boldsymbol{t})]$. Indeed, we have a big problem with velocity law if we believe that is correct; where it seems that we have many types of this law, see figure 10:

a) $\boldsymbol{v_0} = \frac{1}{4}(\boldsymbol{r}/\boldsymbol{t}) \rightarrow \boldsymbol{r} = \mathbf{4}\boldsymbol{t}$.

b) $\boldsymbol{v_1} = \frac{1}{2}(\boldsymbol{r}/\boldsymbol{t}) \rightarrow \boldsymbol{r} = \mathbf{2}\boldsymbol{t}$.

c) $\boldsymbol{v_2} = \boldsymbol{r}/\boldsymbol{t} \rightarrow \boldsymbol{r} = \boldsymbol{t}$.

d) $\boldsymbol{v_3} = \mathbf{2}(\boldsymbol{r}/\boldsymbol{t}) \rightarrow \boldsymbol{r} = \frac{1}{2}\boldsymbol{t}$.

e) $\boldsymbol{v_n = 4(r/t) \to r = \frac{1}{4}t}$.

f) $\boldsymbol{v_0 = \infty \to t = 0 < r}$

g) $\boldsymbol{v_n = -\infty \to r = 0 < t}$.

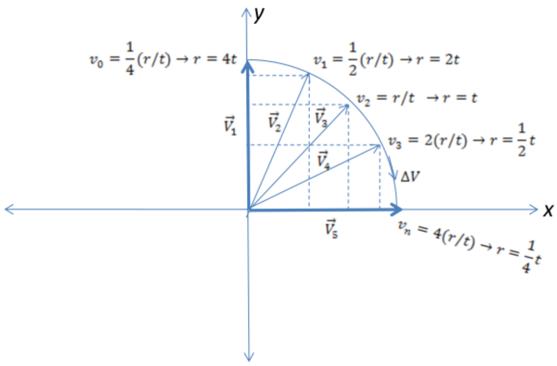

Figure 10: velocity as a function

Then, we can say that the velocity law seems as reflections of $\boldsymbol{r = t}$, when we believe that $|\vec{V}| \equiv |f(t) = r|$.

Of course, a big problem becomes common when we say that $\boldsymbol{v_0 = r \to r = 4t}$, where we ,in this case, note that $\boldsymbol{\theta_{v_0 v_n} = 90°}$, then we can deduce that:

$$\boldsymbol{v_0 = \frac{|\vec{V}_1|}{sine90°} = \frac{-r}{1}} \text{ ....} \qquad (18)$$

where we know that:

$$\boldsymbol{\vec{V}_1 = \frac{(r_0)-(r_{0-1})}{(t_{-1})-(t_0)} = r_i - r_j = 0 - r = -r} \text{ ......}(19)$$

and:

$$\boldsymbol{-r = -\sqrt{r^2} = |r|} \text{ ....} \qquad (20)$$

But, if we look closely at this position, we find that $\boldsymbol{v_0 = r \neq t = 0}$. If this noting is right, we can rewrite the last deduction as:

$$\boldsymbol{v_0 = \frac{r}{0}} \text{ ....} \qquad (21)$$

This is the first part of this big problem, but the second is defined when we say that $\boldsymbol{v_n = t \to t = 4r}$, where we find $\boldsymbol{\theta_{v_n v_n} = 0°}$, then we can deduce that:

$$\boldsymbol{v_n = \frac{|\vec{V}_5|}{sine0°} = \frac{-r}{0}} \text{ ....} \qquad (22)$$

where we know that:

$$\boldsymbol{\vec{V}_5 = \frac{r_5 - r_4}{t_5 - t_4} = r_i - r_j = 0 - r = -r} \text{ ....} \qquad (23)$$

because we know that:

$$\boldsymbol{|r| = -r} \text{ ....} \qquad (24)$$

But if we look closely at this position, we find that $\boldsymbol{v_n = t \neq r = 0}$, where we can say that

$$\boldsymbol{v_n = \frac{0}{t}} \text{ ....} \qquad (25)$$

Here, we can discover the core of this big problem, when we note that we have different results with same data:

h) $\boldsymbol{v_0 = \frac{-r}{sine90°} = \frac{-r}{1} = -r}$ due to the Pythagorean theory, and in the same time $\boldsymbol{v_0 = \frac{r}{0} = \infty}$ due to the velocity law, where we know that $\boldsymbol{(\frac{-r}{1} \neq \frac{r}{0})}$ due to the equivalence principle, because of $\boldsymbol{(r \times 1) \neq (-r \times 0)}$.

i) $\boldsymbol{v_n = -r/sine0° = \frac{-r}{0} = \infty}$, and $\boldsymbol{v_n = \frac{0}{t} = -\infty}$, where we know that $\boldsymbol{(\frac{-r}{0} \neq \frac{0}{t})}$ because of $\boldsymbol{(0 \times 0) \neq (-r \times t)}$.

To prove these deductions, we can calculate the angular momentum $(\boldsymbol{L})$ of particle on positions of figure 10, where we find $(\boldsymbol{L})$ at the position of $(\vec{V}_1)$ is given by: $L = m\,v\,r\;sine\;90° = mvr = \frac{mr^2}{t} = \frac{r}{0} = \frac{1}{0} = \infty$, where we note that; $\mathbf{r} = r\;cosine 90°\;i + r\;sine\;90° j = 0i + 1j$, and; $\mathbf{v} = -v\;sine 90°\;i + v\;cosine 90° j = \;-1i + 0j$, which means that $|\mathbf{v}| = \mathbf{1}$, and $|\mathbf{r}| = \mathbf{1}$. Of course, we supposed $(\boldsymbol{m})$ in this case is neglected because it is too close to the zero $(m \cong 0\;at\;second\;before\;bing\;bang)$. Also we find $(\boldsymbol{L})$ at the position of $(\vec{V}_n)$ is given by; $L = m\,v\,r\;sine\;0° = mvr = \frac{mr^2}{t} = \frac{m \times 0}{t} = \frac{0}{t} = -\infty$. Of course, at this position we decided that $|\mathbf{r}| = \mathbf{0}$, because of $sine\;0° = 0$. $(\mathbf{r} = r\;sine\;0° = 0)$.

A problem becomes more clear when we want to determine the coefficient (unit) of the moment of force $(\boldsymbol{\tau})$ in comparative with the coefficient of the angular momentum $(\boldsymbol{L})$, where we know that[viii]; $\tau = \frac{d\mathbf{L}}{dt} = \frac{d\mathbf{r}}{dt}\frac{d\mathbf{P}}{dt} = \mathbf{r} \times \mathbf{F} = \frac{L}{t} = \frac{mr^2}{t^2} = kg.m^2/s^2$, but the coefficient of $(\boldsymbol{\tau})$ is known as a Newton meter $(\boldsymbol{Nm})$[ix]. Note, the coefficient of the angular momentum is known as; $\boldsymbol{kg.m^2/s}$, and the coefficient of the constant viscosity is known as; $\boldsymbol{m^2/s}$. Therefore, I think it is an unconvincingly trouble shoot, when the derivative of $(\boldsymbol{L})$ leads to deduce that $(\boldsymbol{kg.m^2/s})$ is a coefficient of the viscosity of any constant mass such as the mass of the universe at that second before the seethe great (big bang).

So, we can deduce that we have something wrong in the velocity law.

Conclusion

We note that the velocity law had failed to achieve the purpose of this research, when it:

a) had failed to comply with the Pythagorean theorem.

b) had failed to comply with mathematical logic.

c) be unable to predict the future of the universe.

On the contrary, we found Pythagorean theorem is able to predict the future of universe and able to observe its past by deduction of the results of figure 10:

(1) Current universe may be the second generation of recurring universe series when the velocity of previous universe was trying to cross the stage of;

$v_{0-1} = \frac{r}{t} \rightarrow (-\frac{1}{r} = -\frac{1}{t})$ ·

(2) Future universe may be the third generation of recurring universe series when current universe will try to cross the stage of; $v_{n+1} = \frac{r}{t} \rightarrow (-\frac{1}{r} = 4t)$ ·

Of course, two reasons may appear to be behind this failure:

d) The velocity law says that the $\vec{v}$ is swimming out of the space in the case of v_0.

e) The velocity law says that the $\vec{v}$ is swimming out of the time in the case of v_n.

Notes: *According to the Pythagorean theorem and due to the results of figure 10, I can deduce that;*

f) $\frac{Real\;number}{0} = \infty$

g) $\frac{0}{Real\;number} = -\infty$

h) $\frac{r}{1} \neq \frac{r}{0}$

i) If $\frac{0}{1} \neq \frac{1}{0}$, then $\frac{0}{1} \neq \mathbf{0}$, and, $\frac{1}{0} \neq \mathbf{1}$

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