

## Mathematical Postulate: $1:2 \neq 2:4$

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In physical science, mathematics is used to prove physical events, but sometimes the exactitude of physical events is complicated by mathematics. There is even the exactitude of physical events, which is exact in mathematics, but is wrong in physics, and that exactitude of physical events has prevented the development of science.

Assume that we have the equation:  $1:2 \neq 2:4$  in the mathematics, if anyone says that it is correct, that man will be a stupid or madman. But I don't think so, because in fact the equation:  $1:2 \neq 2:4$  is true and it is connected with Einstein's special relativity theory. The equation is explained as follows:

Everyone knows that in physical science, space is denoted by the distance and the measurement of the distance is metric: m or kilometer km; and the measurement of time is h, hour; m, minute s, second. Light velocity is calculated by the division of distance by the time in which light has moved. And from the light velocity with its measurement:  $c = 300,000 \text{ km/s}$ , we find that a unit of light velocity is km/s. It means that the light velocity depends on a space with unit: km and time with unit: s.

In Einstein's special relative theory, he said that when the frame of reference moves with rapid speed, then the space and time of that frame of reference will be changed by the coefficient:  $\gamma$ , and  $\gamma = \frac{1}{\sqrt{1 - \frac{v^2}{c^2}}}$ . This is true and it has

been proven by experiment.

Suppose that there is an observer in a fixed frame of reference. His space and time and light velocity are measured by the units of the distance:  $\text{km}_0$  and time:  $s_0$  and  $c_0 = 300,000 \text{ km}_0/s_0$ . Suddenly, that frame of reference moves with rapid speed so that its space and time are changed from  $\text{km}_0$ ,  $s_0$  to  $\text{km}_r = \text{km}_0 \cdot \gamma$ ,  $s_r = s_0 \cdot \gamma$ . Then, a space and time of that frame of reference

when it moves are measured by the units of a distance:  $km_r = km_o \cdot \gamma$  and time:  $s_r = s_o \cdot \gamma$  ...but is the unit of the light velocity measured by  $km_o/s_o$  or  $km_o \cdot \gamma/s_o \cdot \gamma$  ? Of course, then the observer in the frame of reference when it moves must measure the light velocity by his space with unit of distance:  $km_r = km_o \cdot \gamma$  and time with unit:  $s_r = s_o \cdot \gamma$  . So, his light velocity is  $c_r = 300,000 km_o \cdot \gamma/s_o \cdot \gamma$  , but not  $c_o = 300,000 km_o/s_o$  .

Because the difference of the measurement:  $km_o/s_o$  and  $km_r/s_r = km_o \cdot \gamma/s_o \cdot \gamma$  , we find that  $c_o = 300,000 km_o/s_o$  is different from  $c_r = 300,000 km_o \cdot \gamma/s_o \cdot \gamma$  . But the light velocity is constant as per Einstein's second postulate. Thus, we must apply the equations of mathematics with our question,

$c_o = 300,000 km_o/s_o = c_r = 300,000 km_o \cdot \gamma/s_o \cdot \gamma$  , does it mean **1:2=2:4**? or  $c_o = 300,000 km_o/s_o \neq c_r = 300,000 km_o \cdot \gamma/s_o \cdot \gamma$  , does it mean **1:2≠2:4** ?

Which is correct in your opinion?

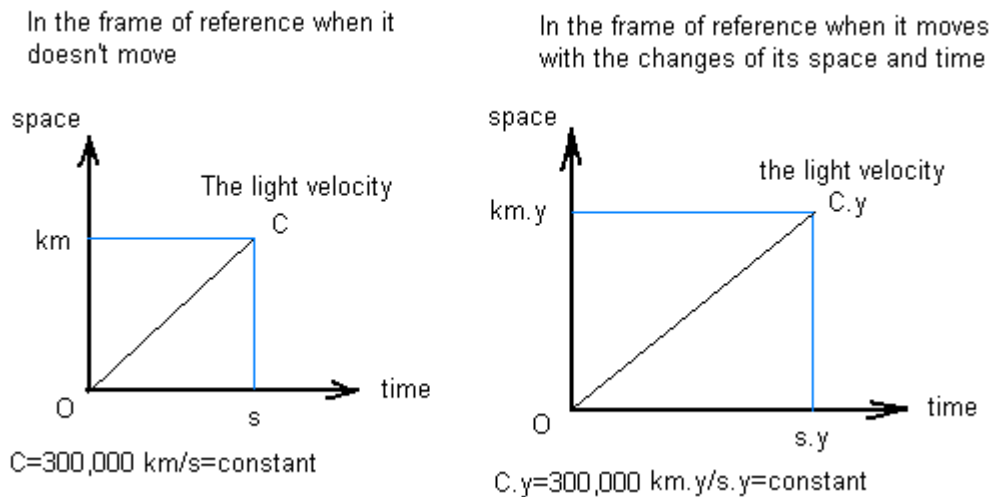
It is pity! If you accept equation: **1:2=2:4** in order to prove the light velocity which is constant and that equation is logical in mathematics, it means that Einstein is wrong. This is because  $c_o = 300,000 km_o/s_o = c_r = 300,000 km_o \cdot \gamma/s_o \cdot \gamma$  shows that a space and time are not changed. From this, Einstein's special relative theory will be not worth reading and the experiments of physical science which have shown the changes of a space and time will be false. But if you accept the equation: **1:2≠2:4**, it also means that you will have to accept an absurdity in the mathematics and that light velocity is not a universal constant as per Einstein's second postulate.

In fact, which equation is correct? We confirm that the equation: **1:2=2:4** is wrong and the equation: **1:2≠2:4** is correct. The equation: **1:2≠2:4** is correct because the light velocity:  $c_o = 300,000 km_o/s_o$  in the frame of reference when it doesn't move is only similar, but not equal to light velocity:  $c_r = 300,000 km_o \cdot \gamma/s_o \cdot \gamma$  in the frame of reference where it moves with rapid speed. We can't calculate the equation as **2:4=(2×1) : (2×2)= 1:2** . That is why the equation: **1:2=2:4** , is wrong. On foundation, Einstein's theory of relativity is exact and the changes of space and time which were proven by the experiments of physical science are true. Einstein only forgot to compare the light velocity between the frames when it doesn't move and it moves with the changes of space and time. So he was confused by the calculation of equation, **1:2=2:4** .

A space and time are considered as the “special energy field” in which the light velocity is constant and equal to  $c=300,000$  km/s. When a space and time are changed, i.e... the “special energy field” in which the light velocity is constant and equal to  $c=300,000$ km/s is changed. This means that the light velocity which is constant and equal to  $c=300,000$  km/s in this “special energy field” is different from the light velocity which is constant and equal to  $c= 300,000$ km/s in other “special energy field”. In other words, there is not the light velocity:  $c_o=300,000$  km<sub>o</sub>/s<sub>o</sub>=constant in the “special energy field” with unit of space:  $km_r=km_o.\gamma$  and unit of time:  $s_r= s_o.\gamma$ . But there is the light velocity:  $c_r=300,000$  km<sub>o</sub>. $\gamma$ /s<sub>o</sub>. $\gamma$ =constant in the “special energy field” with unit of space:  $km_r =km_o.\gamma$  and unit of time:  $s_r=s_o.\gamma$ .

The observer A, in the frame of reference with the measurements of space:  $km_o$  and time:  $s_o$  sees that the light velocity is  $c_o=300,000$ km<sub>o</sub>/s<sub>o</sub>=constant and the observer in the frame of reference with the measurements of space:  $km_r=km_o.\gamma$  and time:  $s_r=s_o.\gamma$  also sees that the light velocity is  $c_r=300,000$  km<sub>o</sub>. $\gamma$ /s<sub>o</sub>. $\gamma$ =constant. That is why all observers in their own measurements see that the light velocity is constant and equal to  $c=300,000$  km/s everywhere. But it doesn't means that light velocity is a universal constant because the measurements of a space and time are different. ( $km_o/s_o \neq km_r/s_r=km_o.\gamma/s_o.\gamma$ ). Thus, equation: **1:2 $\neq$ 2:4** is logical and it is illustrated as figure: 1

**Figure: 1**



$$c_o= 300,000 \text{ km}_o/s_o \neq c_r= 300,000 \text{ km}_o.\gamma/s_o.\gamma = \gamma.300,000\text{km}_o/s_o= \gamma.c_o .$$

(Please read my paper: “Einstein’s energy formula must be revised” in GSJ).

Since equation: **1:2≠2:4**, we find that Einstein’s relativistic energy formula:  $E_r = m_r \cdot c^2 = m_o \cdot \gamma \cdot c^2$ , (in which  $c = \text{constant}$ ) is illogical. This is because in the first postulate, Einstein said that all physical laws in the frame at rest are equivalent to all physical laws in the moving frame. It means that formula:  $E_o = m_o \cdot c_o^2$ , (in which  $c = c_o$ ) in the frame at rest is equivalent to formula:  $E_r = m_r \cdot c_r^2$  in the moving frame, but not formula:  $E_r = m_r \cdot c_o^2$ . Formula:  $E_r = m_r \cdot c_o^2$  with a component:  $c = c_o = 300,000 \text{ km}_o/\text{s}_o$  is considered as “taking the wrong sow by the ear”. Furthermore, that formula only shows a change of mass ( $m_r$ ) but does not change the space (km) and time (s) in the moving frame.

## Conclusion:

Mathematical postulate: **1:2≠2:4** is not only true in the mathematics, but also are true in the physics and in Einstein’s special relative theory. It shows that light velocity is not a universal constant, but it is constant in each frame of reference when space and time are not changed. Our concept about a light velocity as a universal constant must be changed.

As everyone knows the scientists on the large hadron collider project (LHC) are trying to create a “Big Bang” explosion by the acceleration of particles (protons) to an approximation of the speed of light. They will have to apply Einstein’s relativistic energy formula to calculate to their machine acceleration after it is repaired for operation in 2009. Since Einstein’s relativistic energy formula with  $c = \text{constant}$  (which is incorrect) and the comparison between proton’s mass: 1840 and electron’s mass: 1, it is easy to predict that the machine will break down again.

As Einstein apologized to Newton regarding the invariability of space and time, now because of this mathematical postulate: **1:2≠2:4** and for the development of physical science in the future, Einstein should also apologize to us for his invariability of light velocity.

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