# Introduction to the Absolute Zero Velocity Machine

Claude Ziad Bayeh

***Abstract---*** The "Absolute zero velocity machine" is a new instrument invented by the author; it is introduced to detect the velocity of celestial objects that contain this instrument for example: rockets, satellites, planets… this instrument measure objects that contain it running at very high velocity for example 20,000km/h. At very high velocity the existing instruments cannot detect the exact velocity of objects because the speed is comparable to the speed of the light for example *0.1c*, this cannot be detectable with existing systems and circuits because the velocity will be relative with respect to the observer, which means the internal measured velocity will not be the same as the external measured velocity. So the best solution for this problem is to fabricate an instrument that measures the speed of objects by using the light as a device. So every velocity will be compared to the speed of the light, in this manner we can measure the exact velocity of the objects. The concept of this instrument is to send a beam of light from the head of laser that will be reflected by a mirror and will return and hit sensors placed behind the head of laser. The displacement of the light from the head of laser will give the exact velocity of the object with respect to the internal and external observers by using some formulae developed in this paper.
The internal velocity of the object with respect to the internal observer is not equal to zero when the object is running in the space. If the object is at rest then the indicated velocity is equal to zero with respect to the internal observer. In this paper the author proposed advanced postulates rather than Einstein's postulates. The new postulates can resolve big problems that exists, for example the existence of some particles that travel faster than the speed of light.

***Key-words---*** Relativity, Einstein, Instrument, Zero velocity machine, New postulates, Faster than the speed of Light.

## I. INTRODUCTION

IN physics, the absolute zero velocity doesn't exist till now, because every object in the space has a relative velocity with respect to other observers (external observers). That is means; the internal observer situated in the object measures the velocity of the object that is equal to zero for him. But for external observers that are located outside the object they can measure the velocity of the object and the velocity is different from zero [1-14].

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For objects that are running at very low velocity such as cars, aircrafts, airplane and many others, we can determine their internal velocity according to the external measurement, for example we can determine the velocity of aircraft or airplane by using radars or satellites, the same thing for cars in which we can use the rotation of the wheel or tire or engine in order to measure the internal velocity. But when we talk about very high speed or velocity; we can't measure exactly the internal velocity because there is no instrument till now can measure the exact internal velocity of objects that are running at very high speed compared to the speed of the light. Even if we measure the speed of this object, we measure only the external velocity and not the internal one. At very high speed compared to the velocity of the light, the difference between the internal and external measurement will be very big and also the results will be different. When the object go faster and faster and it is approaching to the speed of the light, the measurement of the internal velocity will be impossible to detect because of the relativity with respect to the internal and external observers.

In this paper, the case will be different by using the principle of the "Absolute zero velocity machine" which is an instrument invented by the author. This is developed and demonstrated by formulae introduced and developed also by the author.

The concept and principle of the "Absolute zero velocity machine" is different from the concept of the traditional instruments and machines. The new concept is based on the speed of the light that is considered the same for the internal and external observers (this is mentioned in the postulates given by Einstein [1-9]). The new instrument is based on a head of laser that produce a beam of laser very accurate and this beam will traverse a distance vertically or horizontally according to the position of the head of laser and then it will hit a mirror then reflected to the old position with certain deviation detected by sensors placed near the head of laser. This deviation will give us the exact speed of the object that contains this machine. Some formulae are developed in the following sections in order to understand how we can measure the speed of an object that is running at a speed compared to the speed of the light.

Briefly, we have two apparent velocities, the first one is measured by the internal observer and the second one is measured by the external observer. For low speed such as aircraft, airplane, cars… the difference between the internal and external velocity is not remarkable, but when the speed of the object is compared to the speed of the light, therefore we can detect easily the difference between the two velocities.

So, the velocity of the object can be measured by the internal observer and by the external observer in which we conclude that an object has two velocities with respect to the internal and external observers.

By using this instrument we can know the internal velocity of an object in the space and moreover we can obtain a velocity equal to zero for an object in the space with respect to other external observers. When we say absolute zero velocity of an object, we say that the velocity of this object is equal to zero for all internal and external observers whatever are their movements. This makes the Absolute zero velocity as a universal reference for all kind of observers whatever are their movements.

In the second section, new postulates are presented (including two postulates of Einstein). In the section 3, a definition of the Absolute zero velocity machine is presented. And finally in the section 4, a conclusion is presented.

## II. POSTULATES

The postulates proposed by the author are not all the same as of Einstein postulates of relativity; the proposed postulates are more advanced.

The following postulates are sufficient to resolve big problems that try to contradict the relativity by saying "an object can overpass the speed of light".

These are the proposed postulates by the author:

•Valid laws of physics are the same for all inertial observers (people, who move at constant velocity, maybe zero, relative to the "fixed stars"). (This is the same as the first postulate of Einstein)

• The speed of light, c = 299,792.458 km/s, is the same for all observers, independent of their motion relative to the source of light. (This is the same as the second postulate of Einstein)

• The light moves independently of its source and the speed of the light is independent of the speed of the matter. (This is not mentioned in the relativity of Einstein).

• In the instant when the light is separating from the matter, the speed of light will be independent of the velocity of the matter. (This is not mentioned in the relativity of Einstein).

• The zero velocity exists for whole observers. (This is not mentioned in the relativity of Einstein).

• The internal velocity (according to the object) is not the same as the external velocity (according to the external observers) of this object. (This is not mentioned in the relativity of Einstein).

• The external Velocity of an object can overpass the speed of the light but the internal velocity can never overpass the speed of the light. (This is not mentioned in the relativity of Einstein). For this reason we can see objects as particles with small mass can overpass the speed of the light in certain conditions.

## III. ABSOLUTE ZERO VELOCITY MACHINE

The "*absolute zero velocity machine*" is an instrument invented by the author that measures the velocity whatever is the direction of the machine in the space. The principle of this machine is to be placed on a celestial object such as a planet, satellite, rocket or any other object and it can measure its speed in the space. We can obtain the velocity of "Absolute zero" using this machine; this is not the case of any other machine till now.

The concept and principle of the "Absolute zero velocity machine" is different from the concept of the traditional instruments and machines. The new concept is based on the speed of the light that is considered the same for the internal and external observers (this is mentioned in the postulates given by Einstein [1-14]). The new instrument is based on a head of laser that produce a beam of laser very accurate and this beam will traverse a distance vertically or horizontally according to the position of the head of laser and then it will hit a mirror then reflected to the old position with certain deviation detected by sensors placed near the head of laser. This deviation will give us the exact speed of the object that contains this machine. Some formulae are developed in the following sections in order to understand how we can measure the speed of an object that is running at a speed compared to the speed of the light.

In fact, many researchers and scientists search to contradict the relativity and saying that a particle can exceed the speed of light. But in reality, they are measuring the external speed of the particle and not the internal speed. The internal speed can never overpass the speed of the light; the external speed measured by instruments proposed by the scientists can detect some particles running at a speed that exceed the speed of the light. In order to explain this phenomenon, the author will demonstrate the new principle of this instrument, the proposed postulates and how a particle can overpass the speed of the light.

In figure 1, represents a sample of the "Absolute zero velocity machine", breifly this instrument is placed on a celectial object such as planet, rock, satellite, aircraft… and when this object is moving the beams of laser that exit from the heads of lasers that are put horizontally and vertically will moved according to the movement of the object.

For example, if the object is moving horizontally with the direction of the "x" axis, then the beam of laser that exit from the horizontal head of laser will move to the opposite direction as shown in figure 2. If the object is not moving, then the beam of laser will return to the center of the same head of laser as shown in figure 3.

If the object is moving with the direction of "y" axis, then the beam of laser that exit from the vertical head of laser will move in the opposite direction as shown in figure 4.

The same principle can be applied if the object is moving in the "z" direction or a combination of the three direction "x, y, z".

On the axes "x", "y" and"z" there exists sensors that detect the deviation of the beam of laser from the center which is the head of laser. These sensors will be connected to a machine or a computer that calculate the exact position of the beam of laser and will give us the exact internal speed according to the internal observer and also it can give us the external velocity measured by external observers.

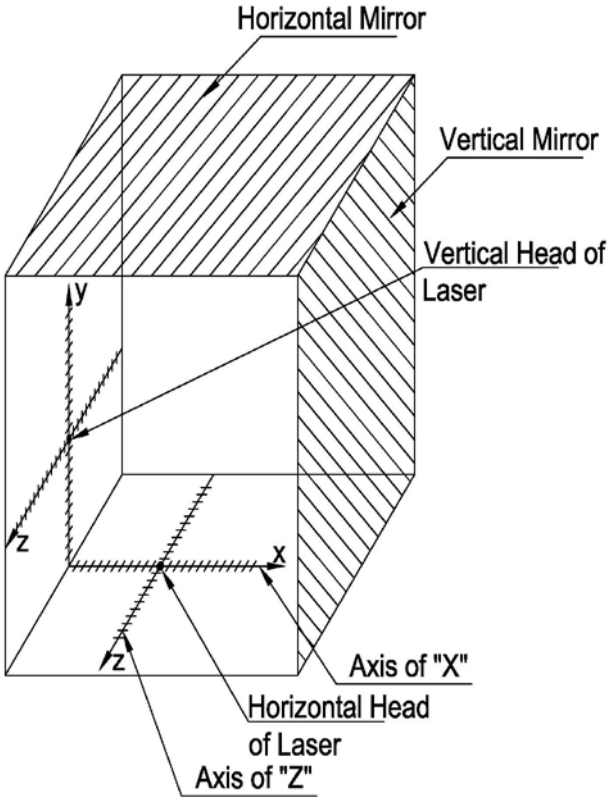


Fig. 1: represents a simple figure of the "Absolute zero velocity machine" in which it contains axes (x, y, z) in three dimension in order to measure the velocity of an object that contains this instrument.

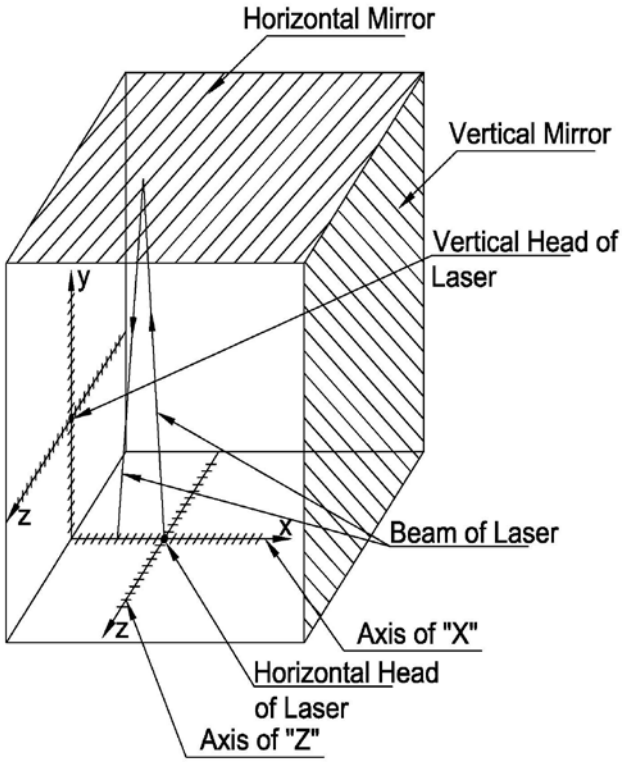


Fig. 2: represents a simple figure of the "Absolute zero velocity machine" when the object is moving at the same direction of the"x" axis.

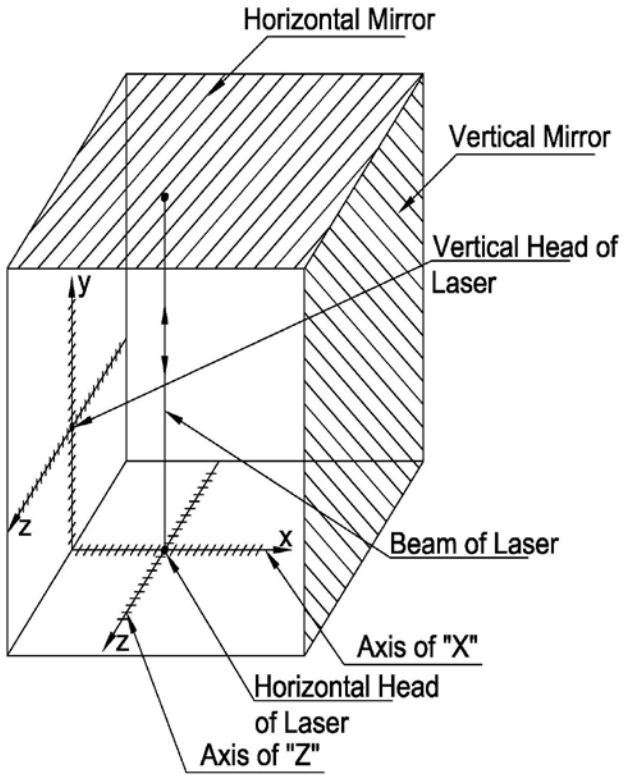


Fig. 3: represents a simple figure of the "Absolute zero velocity machine" when the object is in rest with respect to the"x" axis.

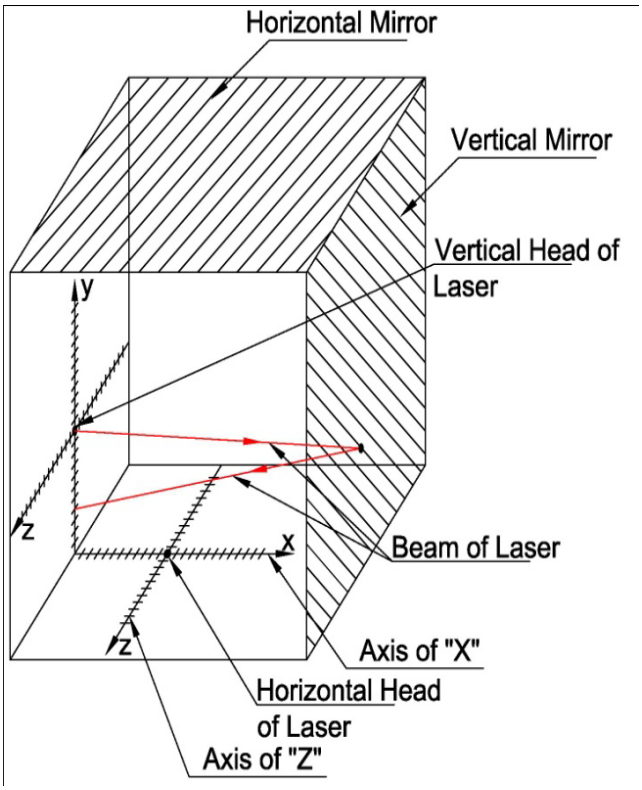


Fig. 4: represents a simple figure of the "Absolute zero velocity machine" when the object is moving at the same direction of the"y" axis.

*A. Horizontal movement in "x" axis*

If we take the case of the horizontal movement of the instrument we have three cases:
-The instrument is in rest or it is not moving.
-The instrument is moving with constant velocity.
-The instrument is moving with acceleration.

*A.1. The instrument is not moving*

In this case the instrument is not moving and the beam that exit from the horizontal head of laser will return to it, that is means the distance of the beam of laser on the "x" axis is equal to zero as shown in figure 3.
We say that we obtain the "Absolute zero velocity" when we have the two head of lasers indicate the velocity equal to zero in other meaning there is not any movement in any direction.

*A.2. the instrument is moving with constant velocity*

In this case the instrument is moving with constant velocity and the beam that exit from the horizontal head of laser will return to "x" axis with a distance equal to $x_m$. This distance will indicate the velocity of the movement of the instrument as shown in figure 5.

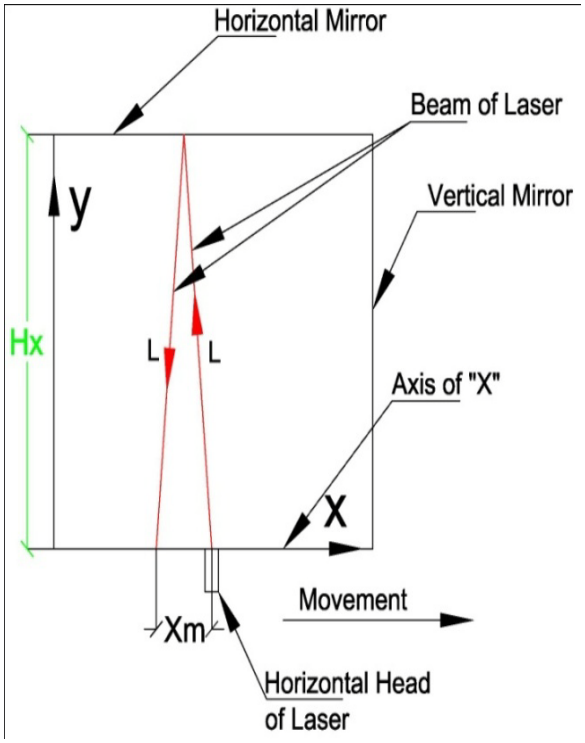


Fig. 5: represents a simple figure of the "Absolute zero velocity machine" when the object is moving at the same direction of the"x" axis.

• Calculating the fictive velocity of the instrument:

$$c = \frac{2L}{\Delta t} \quad (1)$$

The equation (1) determine the speed of the light with respect to the internal observer. (this is the fictive speed).

$$L^2 = \left(\frac{x_m}{2}\right)^2 + (H_x)^2 \quad (2)$$

$$v_{in} = \frac{x_m}{\Delta t} \quad (3)$$

The equation (3) determine the internal velocity of the instrument with respect to the internal observer.

$$\Delta t = \frac{x_m}{v_{in}} = \frac{2L}{c} \quad (4)$$

By replacing the equations (1), (2) and (3) in the equation (4) we obtain the following equation:

$$v_{in} = \frac{c}{\sqrt{4\frac{(H_x)^2}{(x_m)^2}+1}} \quad (5)$$

The equation (5) gives the internal velocity of the instrument, therefore it gives the velocity of the object that contains this intrument.

For example: considering a rocket contains the instrument "Absolute zero velocity machine" and it is running with a very high constant speed.
We have $H_x = 100m$ and $x_m = 0.005m$ therefore the fictive velocity of the rocket is equal to:

$$v_{in} = \frac{299792.458km/s}{\sqrt{4\frac{(100)^2}{(0.005)^2}+1}} = 7.494km/s = 26981.32km/h$$

So in order to obtain $x_m = 5mm$, the speed of the rocket must be equal to $v_{in} = 26981.32km/h$

• Calculating the real velocity of the instrument:

$$c = \frac{2H_x}{\Delta t} \quad (6)$$

The equation (6) determine the speed of the light with respect to the external observer. (it can be also calculated by the internal observer).

$$v_{ex} = \frac{x_m}{\Delta t_{ex}} \quad (7)$$

The equation (7) determine the external velocity of the instrument with respect to the external observer.

$$\Delta t_{ex} = \frac{x_m}{v_{in}} = \frac{2H_x}{c} \quad (8)$$

Therefore:

$$v_{ex} = \frac{c \cdot x_m}{2H_x} \quad (9)$$

The equation (9) gives the external velocity of the instrument, therefore it gives the velocity of the object that contain this instrument.

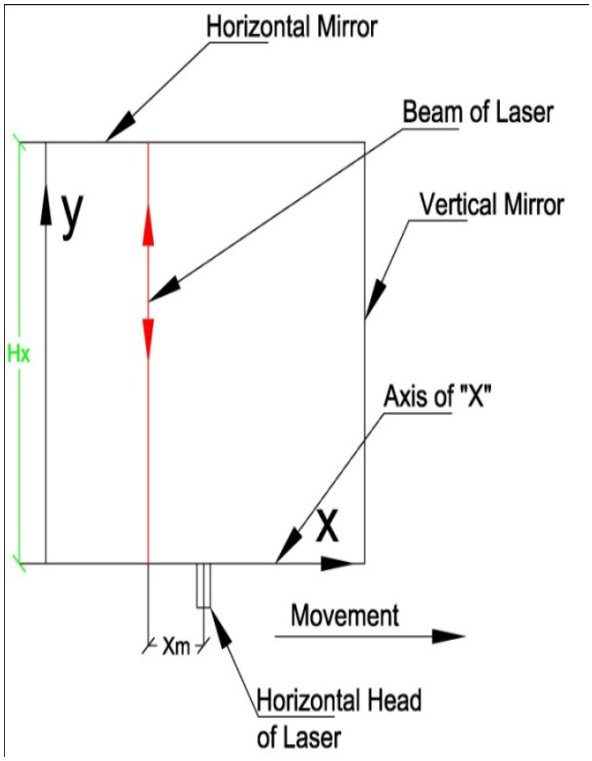


Fig. 6: represents a simple figure of the "Absolute zero velocity machine" when the object is moving at the same direction of the"x" axis.

In the figure 6, the trajectory of the beam of laser is not the same as the figure 5, because it is the real path of the beam of laser. At the time equal to zero, the head of laser emit a beam of laser that goes veritcally to the mirror and at the same time the instrument is moving horizontally. When the light return to the "x" axis, the instrument was traveled a distance equal to $x_m$.

For example 1: considering a rocket contains the instrument "Absolute zero velocity machine" and it is running with a high constant speed.
We have $H_x = 100m$ and $x_m = 0.005m$ therefore we can calculate the fictive velocity (internal velocity) and the real velocity (external velocity) of the rocket and they are equal to:

$$v_{in} = \frac{c}{\sqrt{4\frac{(H_x)^2}{(x_m)^2}+1}} = \frac{299792.458km/s}{\sqrt{4\frac{(100)^2}{(0.005)^2}+1}} = 7.4948km/s$$

$$v_{ex} = \frac{299792.458km/s \cdot 0.005}{2 \cdot 100} = 7.4948km/s = 26981.32km/h$$

So in order to obtain $x_m = 5mm$, the speed of the rocket must be equal to $v_{in} = 26981.32km/h$
In this example the velocity of the rocket is small comparing to the velocity of the light so the internal and external velocity is aproximately equal.

For example 2: considering a supper rocket contains the instrument "Absolute zero velocity machine" and it is running with a very high constant speed.
We have $H_x = 100m$ and $x_m = 0.5m$ therefore we can calculate the fictive velocity (internal velocity) and the real velocity (external velocity) of the rocket and they are equal to:

$$v_{in} = \frac{c}{\sqrt{4\frac{(H_x)^2}{(x_m)^2}+1}} = \frac{299792.458km/s}{\sqrt{4\frac{(100)^2}{(0.005)^2}+1}} = 749.4788km/s$$

$$v_{ex} = \frac{299792.458km/s \cdot 0.5}{2 \cdot 100} = 749.4811km/s$$

So in order to obtain $x_m = 500mm$, the speed of the rocket must be equal to $v_{in} = 749.4788km/s$
In this example the velocity of the rocket is not small comparing to the velocity of the light so the internal and external velocity can be compared.

As conclusion, The equation (9) and (5) give the same result for an object that is running with a low velocity comparing to the speed of light ($<< c$). But it will not be equal when the object has a speed that approach to the speed of light. The external speed $v_{ex}$ is equal to the internal speed $v_{in}$ when the object is running at a speed smaller than the speed of light ($<< c$), but the case will be different for an object that is running at a speed compared to the speed of the light when the internal velocity will have different value compared to the external velocity.

If the instrument is running at the speed equal to the speed of the light (we imagine) therefore the distance $x_m = 2H_x$. Thus we conclude that it is impossible for an object to overpass the speed of the light and $x_m \leq 2H_x$ which is always true. So the internal velocity of the object can never overpass the speed of the light. But the external velocity that can be detected with respect to the external observer can overpass the speed of the light because it is measured according to external detectors. For this reason, many experiment have demonstrated that some particles such as neutrinos were detected with a speed lightly higher than the speed of the light.

*A.3. The instrument is moving with accelerating velocity*

In this case the instrument is moving with accelerating velocity and the beam that exit from the horizontal head of laser will return to "x" axis with a distance equal to $x_m$ which is variable and not constant. This variance of distance will indicate the acceleration of the velocity of the instrument as shown in figure 7.

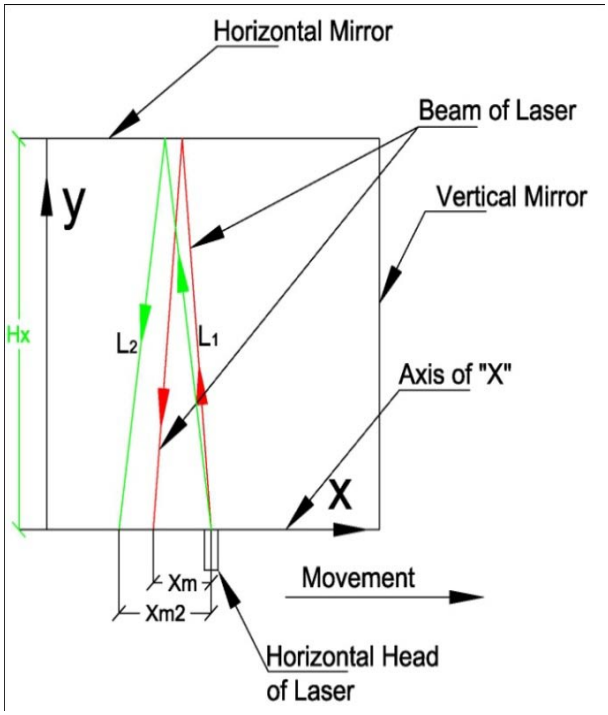


Fig. 7: represents a simple figure of the "Absolute zero velocity machine" when the object is moving with acceleration at the same direction of the"x" axis.

The acceleration equations is equal to:

$$a_{ex} = \frac{dv_{ex}}{dt} = \frac{c}{2H_x}\frac{dx_m(t)}{dt} \quad (10)$$

$$a_{in} = \frac{dv_{in}}{dt} = \frac{4c}{{x_m}^3\left(4\frac{(H_x)^2}{(x_m)^2}+1\right)^{\frac{3}{2}}}\frac{dx_m(t)}{dt} \quad (11)$$

*B. Relation between internal and external velocities*

In this section, one can find a relation between the internal and external velocities of the rocket (spacecraft).

If we take the equations (12) and (13)

$$v_{in} = \frac{x_m}{\Delta t_{\text{in}}} \quad (12)$$

$$c = \frac{2L}{\Delta t_{\text{in}}} \quad (13)$$

$$\Rightarrow \Delta t_{\text{in}} = \frac{x_m}{v_{in}} = \frac{2L}{\text{c}}$$

$$\Rightarrow \frac{{x_m}^2}{{v_{in}}^2} = \frac{4L^2}{\text{c}^2}$$

$$L^2 = {H_x}^2 + \left(\frac{x_m}{2}\right)^2 \quad (14)$$

By using the equation (14) we can obtain the following form:

$$\frac{{x_m}^2}{{v_{in}}^2} = \frac{4\left({H_x}^2+\left(\frac{x_m}{2}\right)^2\right)}{\text{c}^2} = \frac{4{H_x}^2+{x_m}^2}{\text{c}^2} \quad (15)$$

If we take the equations (16) and (17) we can obtain the following:

$$v_{ex} = \frac{x_m}{\Delta t_{\text{ex}}} \quad (16)$$

$$c = \frac{2H_x}{\Delta t_{\text{ex}}} \quad (17)$$

$$\Delta t_{\text{ex}} = \frac{x_m}{v_{ex}} = \frac{2H_x}{\text{c}}$$

$$\Rightarrow 2H_x = \frac{x_m c}{v_{ex}} \Rightarrow 4{H_x}^2 = \frac{{x_m}^2 c^2}{{v_{ex}}^2} \quad (18)$$

By replacing the equation (18) in the equation (15) we obtain:

$$\frac{{x_m}^2}{{v_{in}}^2} = \frac{\frac{{x_m}^2 c^2}{{v_{ex}}^2}+{x_m}^2}{\text{c}^2}$$

$$\Rightarrow \frac{1}{{v_{in}}^2} = \frac{\frac{c^2}{{v_{ex}}^2}+1}{\text{c}^2} \Rightarrow \frac{c^2}{{v_{in}}^2} = \frac{c^2}{{v_{ex}}^2}+1 \quad (19)$$

$$\Rightarrow \frac{c^2}{{v_{in}}^2} = \frac{c^2+{v_{ex}}^2}{{v_{ex}}^2} \Rightarrow \frac{{v_{in}}^2}{c^2} = \frac{{v_{ex}}^2}{c^2+{v_{ex}}^2}$$

$$\Rightarrow {v_{in}}^2 = \frac{{v_{ex}}^2}{1+\frac{{v_{ex}}^2}{c^2}}$$

$$\Rightarrow v_{in} = \frac{v_{ex}}{\sqrt{1+\frac{{v_{ex}}^2}{c^2}}} \quad (20)$$

The equation (20) is the relation between $v_{in}$ and $v_{ex}$ with $v_{in}(v_{ex})$ the internal velocity is function of the external velocity.

And

$$\frac{c^2}{{v_{in}}^2} = \frac{c^2}{{v_{ex}}^2}+1 \Rightarrow {v_{ex}}^2 = \frac{{v_{in}}^2}{1-\frac{{v_{in}}^2}{c^2}}$$

$$\Rightarrow v_{ex} = \frac{v_{in}}{\sqrt{1-\frac{{v_{in}}^2}{c^2}}} \quad (21)$$

The equation (21) is the relation between $v_{in}$ and $v_{ex}$ with $v_{ex}(v_{in})$ the external velocity is function of the internal velocity.

• Explication of the equation (20)

$$v_{in} = \frac{v_{ex}}{\sqrt{1+\frac{{v_{ex}}^2}{c^2}}} \quad (20)$$

We have $\sqrt{1+\frac{{v_{ex}}^2}{c^2}} \geq 1 \Rightarrow \frac{1}{\sqrt{1+\frac{{v_{ex}}^2}{c^2}}} \leq 1$

$$\Rightarrow v_{in} = \frac{v_{ex}}{\sqrt{1+\frac{{v_{ex}}^2}{c^2}}} \leq v_{ex}$$

We conclude that the internal velocity is less than or equal to the external velocity, which means that the external observer will see the rocket faster than its internal fictive velocity at high speed. This can explain why we can see particles running faster than light such as accelerated neutrinos. But in fact, the particle in itself (internal observer) cannot overpass the speed of the light because it has a mass. When a particle transform to energy such as light, then it can run at the speed of light. Therefore we conclude that at high speed compared to the speed of light, we detect the particles running at a speed can exceed the speed of light which is demonstrated by many scientists and researchers in big laboratories.

We conclude that the velocity is dilating for the external observer.

• Explication of the equation (21)

$$v_{ex} = \frac{v_{in}}{\sqrt{1-\frac{{v_{in}}^2}{c^2}}} \quad (21)$$

We have $\sqrt{1-\frac{{v_{in}}^2}{c^2}} \leq 1 \Rightarrow \frac{1}{\sqrt{1-\frac{{v_{in}}^2}{c^2}}} \geq 1$

$$\Rightarrow v_{ex} = \frac{v_{in}}{\sqrt{1-\frac{{v_{in}}^2}{c^2}}} \geq v_{in}$$

The same interpretation can conclude as the precedent one.

*B.1. Example*

Suppose that we detect a particle that is running in the space with a velocity equal to $1{,}1c$. Calculate the internal velocity.

We know the external velocity detected by our machines so we can calculate the internal velocity of the particle as following:

$$v_{in} = \frac{v_{ex}}{\sqrt{1+\frac{{v_{ex}}^2}{c^2}}} = \frac{1.1c}{\sqrt{1+\frac{(1.1c)^2}{c^2}}} = 0.73994c$$

We see that the internal velocity is less than the velocity of the light even if we see and detect it at a speed that exceeds the speed of the light.

Many experiences were done and demonstrate that a particle can exceed the speed of light, but till now, no one has understand it, because the relativity in itself demonstrate that a particle can never exceed the speed of the light which is contradicted by the experiences that shock the world with their results.

So the only explanation is that the detected speed of particles is the external speed but the internal speed (internal observer) can never overpass the speed of light which is demonstrated in this paper.

*C. Relation between internal and external times*

In this section, one can find a relation between the internal and external times of the rocket (spacecraft).

By taking the equation (20)

$$v_{in} = \frac{v_{ex}}{\sqrt{1+\frac{{v_{ex}}^2}{c^2}}} \quad (20)$$

And we have the equations (12) and (16)

$$v_{in} = \frac{x_m}{\Delta t_{\text{in}}} \quad (12)$$

$$v_{ex} = \frac{x_m}{\Delta t_{\text{ex}}} \quad (16)$$

So we can write the following equation:

$$x_m = v_{in} \cdot \Delta t_{\text{in}} = v_{ex} \cdot \Delta t_{\text{ex}} \quad (22)$$

By replacing the equation (22) in the equation (20) we obtain:

$$v_{in} = \frac{v_{ex} \cdot \Delta t_{\text{ex}}}{\Delta t_{\text{in}}} = \frac{v_{ex}}{\sqrt{1+\frac{{v_{ex}}^2}{c^2}}}$$

$$\Rightarrow \Delta t_{\text{ex}} = \frac{\Delta t_{\text{in}}}{\sqrt{1+\frac{{v_{ex}}^2}{c^2}}} \quad (23)$$

And

$$v_{ex} = \frac{v_{in} \cdot \Delta t_{\text{in}}}{\Delta t_{\text{ex}}} = \frac{v_{in}}{\sqrt{1-\frac{{v_{in}}^2}{c^2}}}$$

$$\Rightarrow \Delta t_{\text{in}} = \frac{\Delta t_{\text{ex}}}{\sqrt{1-\frac{{v_{in}}^2}{c^2}}} \quad (24)$$

The equation (23) and (24) give the same result.

• Explication of the equation (23)

$$\Delta t_{\text{ex}} = \frac{\Delta t_{\text{in}}}{\sqrt{1+\frac{{v_{ex}}^2}{c^2}}} \quad (23)$$

We have $\sqrt{1+\frac{{v_{ex}}^2}{c^2}} \geq 1 \Rightarrow \frac{1}{\sqrt{1+\frac{{v_{ex}}^2}{c^2}}} \leq 1$

$$\Rightarrow \Delta t_{\text{ex}} = \frac{\Delta t_{\text{in}}}{\sqrt{1+\frac{{v_{ex}}^2}{c^2}}} \leq \Delta t_{\text{in}}$$

We conclude that the external time needed for a particle to pass from a region to another is less than the internal time needed to pass. This is why we can detect the particles running at high speed because the time needed to pass from a region to another is less than the internal time.

Another interpretation, the particles that run in a speed compared to the speed of light have internal live greaten than what we expect.

*C.1. Example*

Suppose that an astronaut that travel in a spacecraft with a speed equal to $0.9c$ (external velocity) with respect to the earth. He departs from the earth at age 20 (external time) and return after 10 years (external time) with respect to the earth time. What is the exact age of this astronaut when he returns to the earth?

We have $v_{ex} = 0.9c$, $\Delta t_{\text{ex}} = 10$ years we have to calculate the internal time meaning the exact age of the astronaut with respect to him.

$$\Delta t_{\text{ex}} = \frac{\Delta t_{\text{in}}}{\sqrt{1+\frac{{v_{ex}}^2}{c^2}}} \Rightarrow \Delta t_{\text{in}} = \Delta t_{\text{ex}} \sqrt{1+\frac{{v_{ex}}^2}{c^2}}$$

$$\Rightarrow \Delta t_{\text{in}} = 10\sqrt{1+\frac{(0.9c)^2}{c^2}} = 13.45$$

Then we conclude that his exact age will not be equal to 30 years but to 33.45 years. This is true.

## IV. CONCLUSION

The "Absolute zero velocity machine" is a new instrument invented by the author; it is introduced to detect the velocity of celestial objects that contain this instrument for example: rockets, satellites, planets etc… The concept and principle of the "Absolute zero velocity machine" is different from the concept of the traditional instruments and machines. The new concept is based on the speed of the light that is considered the same for the internal and external observers (this is mentioned in the postulates given by Einstein [1-14]). The new instrument is based on a head of laser that produce a beam of laser very accurate and this beam will traverse a distance vertically or horizontally according to the position of the head of laser and then it will hit a mirror then reflected to the old position with certain deviation detected by sensors placed near

the head of laser. This deviation will give us the exact speed of the object that contains this machine. Some formulae are developed in the following sections in order to understand how we can measure the speed of an object that is running at a speed compared to the speed of the light.

The internal velocity of the object with respect to the internal observer is not equal to zero when the object is running in the space. In this paper the author proposed advanced postulates rather than Einstein's postulates. The new postulates can resolve big problems that exists, for example the existence of some particles that travel faster than the speed of light. Till now the technology can't arrive at a speed that helps us to verify the proposed theory, but practically the proposed theory can resolve big issues that are impossible to resolve with the existing instruments and machines.

## REFERENCES


[1] Bertrand Berche, "Relativite", *Laboratoire de physique des materiaux, universite Henri Poincarre, Nancy1*.

[2] J. D. Jackson, "Classical electrodynamics", *Wiley, New York,* (third edition), (1999).

[3] I. R. Kenyon, "General relativity", *Oxford University Press, New York,* (1990)

[4] M. V. Berry, "Principle of cosmology and gravitation", *institute of Physics publishing, Bristol*, (1989).

[5] P. M. Schwarz, J. H. Schwarz, "Special relativity, from Einstein to strings", *Cambridge University Press, Cambridge,* (2004).

[6] M. Longair, "Theoretical concept in physics", *Cambridge University Press, Cambridge,* (2003).

[7] W. Pauli, "Theory of relativity", *Dover, New York,* (1958).

[8] F. Rohrlich, "Classical charged particles", *Addison-Wesley, Redwood*, (1965).

[9] P. G. Bergmann, "Introduction to the Theory of relativity", *Dover, New York,* (1976).

[10] T. Adam, N. Agafonova,… A. Zghiche, "Measurement of the neutrino velocity with the OPERA detector in the CNGS beam".

[11] Mehran Rezaei, "Imaginary Relativity", *WSEAS TRANSACTIONS on COMMUNICATIONS*, ISSN: 1109-2742, Issue 2, Volume 9, (February 2010), pp. 127-142.

[12] Mircea Neagu, "A relativistic approach on 1-jet spaces of the rheonomic Berwald-Moor metric", *Balkan Society of Geometers, Geometry Balkan Press*, (2011).

[13] Chunxiao Zhang, Junjie Yue, "Application of an improved adaptive chaos prediction model in aero-engine performance parameters", *WSEAS TRANSACTIONS on MATHEMATICS*, E-ISSN: 2224-2880, Issue 2, Volume 11, (February 2012), pp. 114-124.

[14] FRANC ROZMAN, The EM properties of light, url: http://www.anti-energija.com/The_properties_of_light.pdf


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