

## OF DOPPLER EFFECT, A THIRD BEAM OR CAVE OF ALI BABA EINSTEIN'S PRINCIPLE OF RELATIVITY CONTRADICTS DOPPLER EFFECT

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### ABSTRACT

In Doppler Effect, we deal with the normal light where the front beam retracts, the rear dilates and the vertical inclines, contrary to the light Einstein used in his principle of relativity. Hence the light in the first is the normal one, thus, the light in the principle of relativity is not. This fact makes us able to read Einstein's thought experiments without the need for time dilation or space retraction, and we proved that the constancy of the speed of light isn't absolute but relative to its point of emission, (The place where it was emitted), but due to the absolute motion of the Earth it is impossible for us to know the real place of it.

**KEYWORDS:** Vertical Beam, Front Beam, Rear Beam, Light Duality, Triangle, Thought Experiments, Photons, Stratified, Absolute Motion, Inclination, LISA, Transmission, Reception, Jupiter, Einstein, Principle, Converse Day, Spontaneity, Geodesic, Inertial, Mirror

### INTRODUCTION

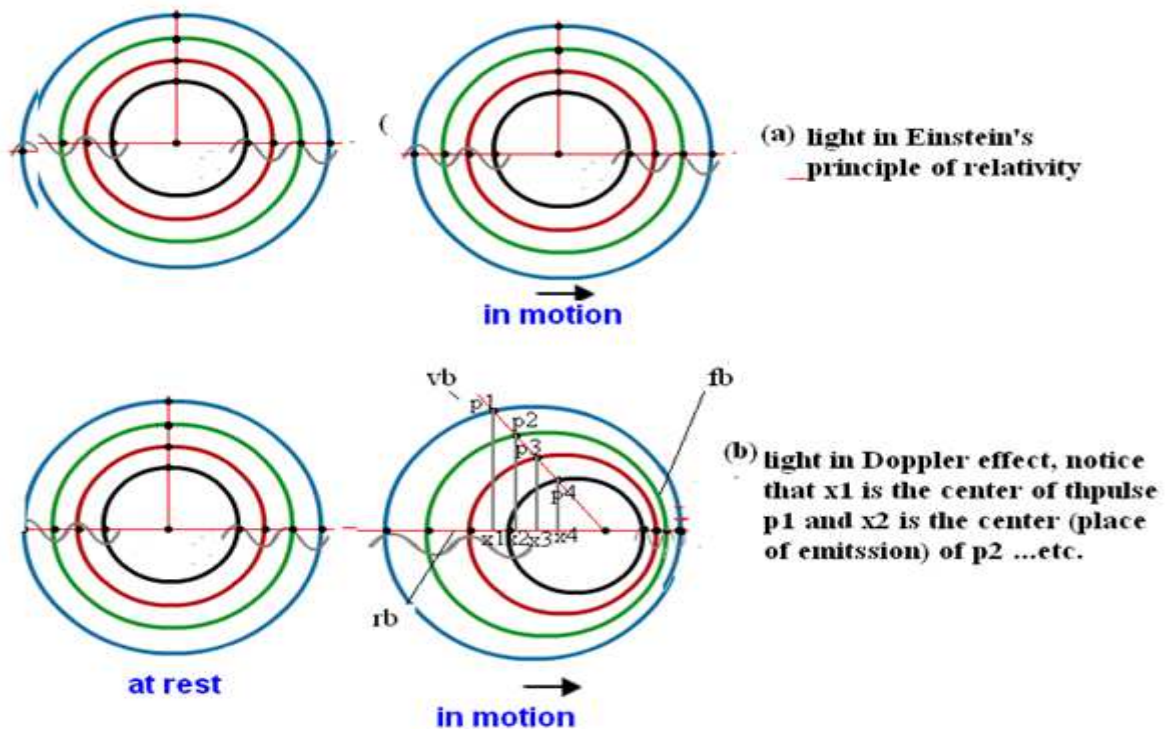
Due to Earth's absolute motion, the vertical beam (VB) became inclined, to axis  $y$  with an angle  $i$ , so its length is longer than light can cross, thus,  $d = C.t$  is insufficient, and all light beams received from celestial bodies may be much longer than we believe.

The adoption of the point of light emission as a reference enabled us to explain and predict all probable errors in light transmission and reception between planets or telecommunication during motion.

This study finds by an imaginary space ship that can travel faster than  $C$  in order to know what we can see behind and front of us.

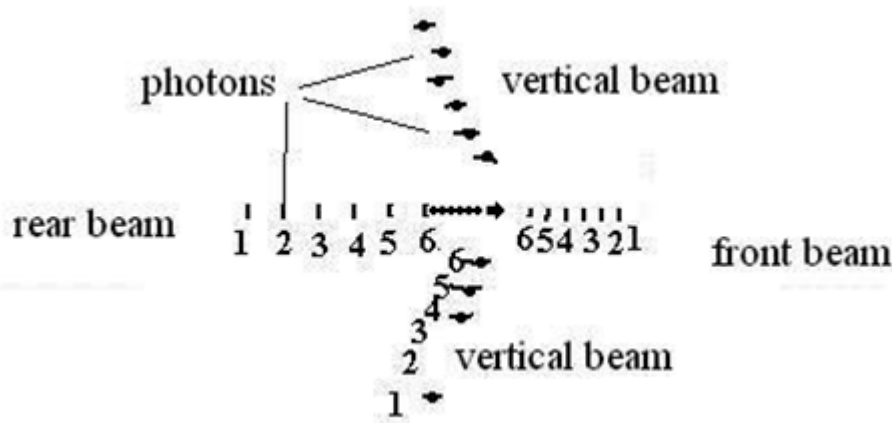
### THREE BEAMS OF DOPPLER EFFECT

In figure 1, in addition to the Fb and RB, notice the VB composed of the upper photons of all waves propagating in lines perpendicular to the direction of movement in this stratification tilted backward, opposite to the direction of movement.



**Figure 1: Distinction of the Three Beams of Doppler Effect, Vertical, Front and Rear. Notice that in Einstein's Principle of Relativity at (a) the Three Beams at Rest and in Motion Stay Unchanged Contrary to Doppler Effect at (b) where the Front Beam Retracts, the Rear Dilates and the Vertical Inclines**

In figure 2, we erased all the photons except those forming the FB, RB and VB to have a croquet image of DE, where photons are closer to each other in the FB, frankly spaced in the RB and in the VB it is inclined backward with the angle (i) with axis y



**Figure 2: After Erasing All Photons except Those of Vertical, Front and Rear Beams**

In figure 3, we replaced the precedent circular light pulses with a source emitting three thin laser beams, front, back and vertical. We obtained the same retracted FB, expanded RB and the same inclination of the VB.

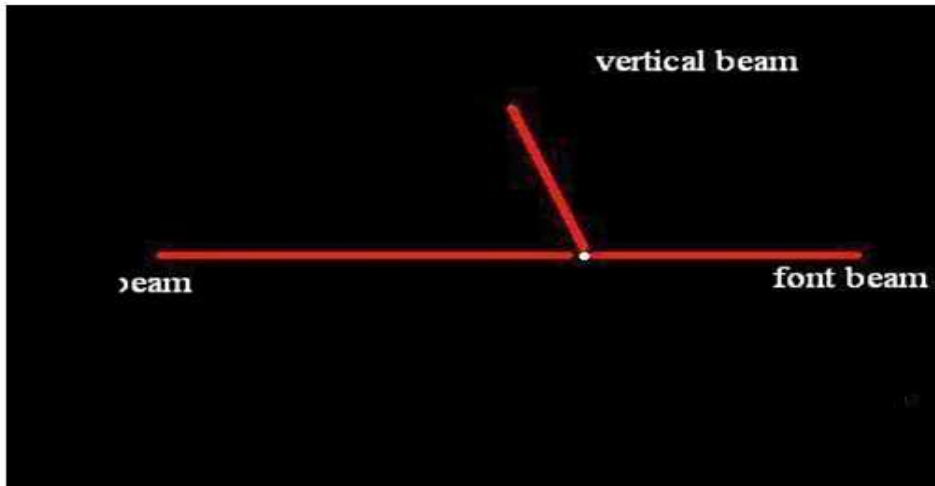


Figure 3: Thin Laser Beams, Vertical, Front and Rear

In figure 4: the same laser source S in the previous figure while traveling at a speed  $v = 1/3C$  (100000 km), in direction x from  $t_0 (x_0, y_0)$  to  $t_1 (x_{300.000}, y_0)$ , has emitted during the time  $t = 1$ sec, three thin beams, VB in axis y represented by R. the FB on axis +x, the laser source S moves with the speed v and the RB as shown in the figure.

Each beam is composed of 10 pulses, from 0 to 9 separated at rest, by equal intervals of time = 1/10 sec, means, at rest, the space between two pulses = 30000 km, knowing that the speed of light "C" = 300000 km/sec, knowing that the distance crossed by S from  $t_0$  to  $t_1 = V$ , distance crossed by  $p_0$  from  $t_0$  on y during  $t=1$  sec =  $R_0$  and the diameter B contains all the pulses from  $p_0$  to  $p_9$ .

The experiment is conducted in a stationary universe where  $t_0$  represent the reference for the coordinates of motion of light and of the laser source S, what could we predict happens to these three beams after  $t= 1$  sec.?

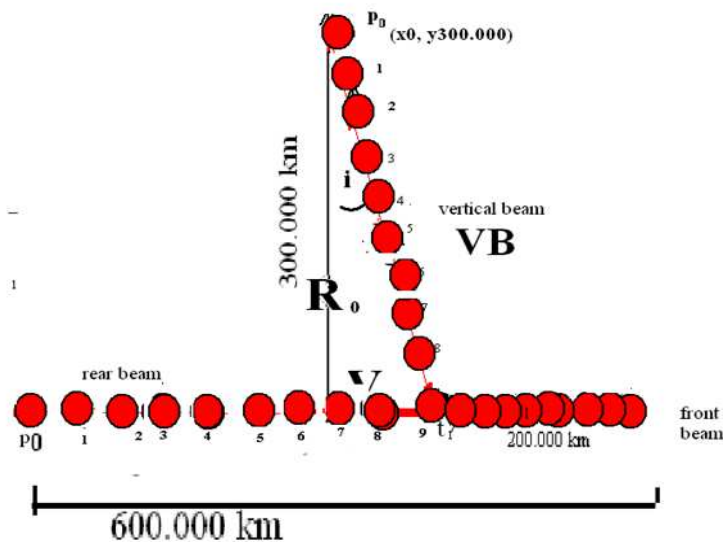


Figure 4: Inclined Vertical Beam, Retracted Front Beam and Dilated Beam

- Vertical beam VB

As in the figure,  $p_0$  will be at  $(x_0, y_{300.000})$ , and  $P_9$  in  $t_1$  at  $(x_{100.000}, y_0)$  about to be released from S, and the diameter

B is formed by all the pulses stratified from  $p_0$  to  $p_9$ , all traveling parallel to y.

We are in front of the triangle  $p_0$ - $t_0$ - $p_9$  right-angled in  $t_0$  where the height  $t_0$ - $p_0$  represents the light ray (LR)  $R_0$  (trajectory of  $p_0$ ) and the base

$V$  ( $t_0$ - $p_9$ ), (distance made by the source S), and the diameter B ( $p_0$ - $p_9$ ) (vertical beam) made of the inclined stratification of all the pulses (photons) emitted from S in 1 sec.

### This Triangle Poses Two Puzzling Questions

- What should mostly represent the light, the  $R(t_0$ - $p_0)$  or the diameter B( $p_0$ - $p_9$ )?

The answer is that,  $R_0$ (  $t_0$ - $p_0$  ) is called light because it contains one solitary photon, thus dim in all its length and it responds to : distance  $d = C \cdot (t_1 - t_0)$ , and it is a perfect straight line as we know about light, and this is true for all LR ( $R_1$ ,  $R_2$  ... $R_10$ ) correspondent to other pulses.

but if  $R_0$  is called light because it contains one solitary photon, the VB contains all the pulses (photons) from  $p_0$  to  $p_9$ , but in return it, its length don't respect the equation:  $d = c \cdot t$ , where  $VB > d$  (loger than light can travel in t). VB is not dim but it shines in all its length, mean it must be called light also, thus,  $R_0$  and VB are two special forms of light which means that we are about a new duality of light ray LR /light beam LB or like the duality: waves/particles.

- From which point we should measure the distances crossed by light from  $t_0$  (point of emission) or from S (light source) at  $t_1$ ?

- The answer is that, since  $t_0$  starts the motion of  $p_0$  in its trajectory  $R_0$  and in same instant the displacement  $V$  of S, this imposes that  $t_0$  as the legal point from which  $R_0$  and  $V$  must be measured, and as VB is a diameter it can be found as follows:

$$VB^2 = R_0^2 + v^2 = 9 + 1 = 10$$

$$VB = \sqrt{10} = 31622776 \text{ km}, > 1C (300000\text{km})$$

So the light emitted from S must be measured from  $t_0$  not  $t_1$ .

To find found Vertical beam maximal inclination, we must have  $v = C$ , thus, after 1 sec the first photon  $p_0$  ( $x_0$ ,  $y_{300000}$ ) and the last photon  $p_9$  at

$t_1(x_{300.000}, y_0)$ . We are about the equilateral triangle  $t_0$ - $p_0$ -  $p_9$  right angled in  $t_0$ , thus the angle of VB maximal inclination  $i = 45^\circ$  with axis y, so when  $v=1/C$  (100000 km) the angle of inclination "i" =  $45/3 = 15^\circ$ ,

Now it is easy to conclude "I" or absolute inclination per km/sec as follows:

$$i / C = I \text{ (counted in degrees /km/sec)}$$

$$I = 45^\circ/C = 0,00015^\circ /\text{km/sec}, \text{ so}$$

We have two new constants:

- The maximal angle of inclination i
- The absolute inclination per km/sec or I

We can use I to find the correspondent tangent as follows

When  $v = 1/3C$  km/sec the tangent was  $1/3 C$  (100000 km),

Notice that  $v$  represents the tangent, so

When  $v = 1/3C$  km/sec the tangent after 1sec =  $1/3C$  or 100000 km, and when  $v = C$  the tangent after 1sec =  $C$  or 300000 km

- **Front Light Beam FB:**

At the end of 1 second:

$p_0$  will be  $1C$  km far from  $t_0$  on  $y$  the source  $S$  at  $t_1$ ,  $1/3C$  km from  $t_0$  on  $x$ , where  $p_0$  is about to be released.

The distance  $p_0 - p_9 =$  length of the FB = 200.000 km = the distance  $t_0 - p_0 -$  distance  $t_0 - p_9 = 200.000$  km

The inter pulses (photons) space became 20000 km instead of 30000 km.

Because in every  $1/10$  Sec, the pulse crosses 30000 km and the source  $S$  crosses, 10000 km, so  $S$  emits a new pulse 10000 km closer to the precedent every  $1/10$  sec. so the distance between 2 pulses is 20000 km so the length of the FB is  $1/3C$ km, shorter in, than  $1C$ . This makes one think that light has crossed 300000km in  $2/3$  sec, means traveling faster than  $C$ , which is impossible.

As a result, the retracted FB, will be received in just  $2/3$  sec only, so if the video clip is 30 min we'll receive it in 20 min only, and this explain the virtual acceleration of moons of Jupiter while it approach to Earth.

- **Rear Beam RB**

At the end of one second, the first pulse  $p_0$  (photon), will be at  $1C$  km on  $-x$  from  $t_0$ . the last pulse  $p_9$  is about to be released from  $S$  in  $t_1$  at  $1/3C$  km on  $+x$ . so the length of the RB is the distance  $p_0 - p_9 = 1/3C$  or 400000 km, which lets those who measures from  $S$  think that light has traveled with  $1/3C$  or 100000 km/sec slower than  $C$ , which is impossible also. What happened is that in every  $1/10^{\text{th}}$  sec  $p_0$  travels 30000 km while in the opposite direction,  $S$  is getting far away 10000 km to make the space between the pulse and that next to it = 40000 km instead of 30000 km at rest. That was why the length of the RB became

$1/3C$  or 400000 km, and to be received in  $1/3$  second in stead of  $1C$ , so, if the duration of the video 30 min it will need 40 minutes to be received, and this explain why moons of Jupiter slows down when getting far from Earth.

### Important Note

whatever was the light beam vertical, front or rear, after 1 sec the first pulse  $p_0$  of each is  $1C$  (300000km) from  $t_0$

- **Special Case**

Suppose the light source travels with the speed of light  $c$ , what can we see after one second?

- vertical beam VB

We saw above that it reaches its maximal inclination angle  $45^\circ$ .

- - front beam FB

Whenever  $p_0$  get 30.000 km farther from  $t_0$  every  $1/10^{\text{th}}$  sec, the source S did the same thing by getting farther from  $t_0$ , 30000 km on axis x, and at the end of one second, both,  $p_0$  and S will be 300.000 km from  $t_0$ , thus, the distance S ( $t_1$ )- $p_0$  = zero, and this is the final length of the FB in this, and  $p_0$  will never be released, means that we'll never receive this beam.

This mean that inside a ship moving at the speed C, one never see his face in the mirror, but if he looks outside in front of the ship he will see the planets and the stars turning with double their speed, from outside, this ship can't be seen from beyond, but from behind we will receive the 1 sec in 2sec (twice the original time). From inside the ship if we look behind we'll see everything freezing or motionless.

### Rear Beam

$p_0$  is 1C (300000km) from  $t_0$  on direction  $-x$ , the source s do the same in the opposite direction  $+x$ , so as the space between two pulses became 60000 km instead of 30000 km at rest, and at the end of one second  $p_0$  will be 1C (300000km) on  $-x$  from  $t_0$  as will as done the source S in the opposite direction on  $+x$ , thus the final length of RB is 2C or 600000 km, double the distance crossed by light in one second, to be received in 2 sec, so if the original clip is 30 minutes we'll need one hour to receive it.

Hence in one second, the FB shrinks the distance traveled by S, so with speed  $v = 300000 - v$ , thus the final length of the retracted FB =  $(C.t) - (v.t)$ .

For the dilation of the RB, hence the dilation in one second is the distance traveled by the light source in one second, thus the total dilation of RB =  $v.t$ , and the final length of the RB =  $(C.t) + (v.t)$ .

**Notice:** In all cases above, A, B and C, we didn't count the time the beam needs to cross the distance between the place of emission  $t_0$  and the place of reception.

## APPLICATIONS

### Transmission Reception

Suppose a space ship moves with s speed of  $1/3C$  transmits the same numerical clip above, how would the motion of the transmitter and receiver affect the duration of reception?

#### First Case

The transmitter and the receiver are located at a fixed distance from each other or moving in a same direction with a same speed: the time of transmission and the time of reception are identical.

**Second Case:** The transmitter moves away from a stationary receiver: the time of reception of one second will be 1  $1/3$  sec, so if the video is 30 sec we'll need duration of 40 sec in receiving it. Both, the transmitter and the receiver will see each other slower  $1/3$  sec/sec

**Third Case:** The transmitter is approaching a stationery receiver, so the 30 sec video will be received during 20 sec only, and both of the transmitter and the receiver will see each other  $1/3$  sec/sec faster than normal.

**Fourth Case:** The transmitter and the receiver are approaching from each other with a same speed  $1/3C$ : the 30 sec will be received in 10 sec only, the receiver and the transmitter will see each other  $2/3$  sec/sec faster than normal.

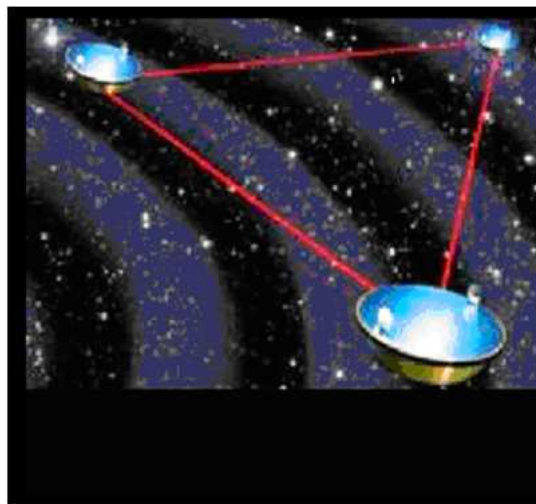
**Fifth Case:** the transmitter and the receiver are getting far from each other with same speed : the 30 sec emitted clip will need 50 sec, and both of transmitter and receiver will see each other  $2/3$  sec/ sec slower than normal.

**Note:** in all cases above, we didn't count the time the electromagnetic signal need to cross the distance between the transmitter and the receiver.

and this could explain on the phenomenon of acceleration and deceleration of moons of Jupiter, for when Jupiter and Earth are approaching to each other, the observer watch them accelerating and when they are getting far from each other they decelerates, and this could solve the mystery of the moons of Jupiter that has puzzled scientists for long time.

### The Problem Waiting "LISA" Project

"LISA" or Laser Interferometer Space antenna is the ambitious future project prepared to research the waves of gravity. The LISA will use the longest laser beam ever used by scientists in history, of 1500000 one million five hundred thousands km, equivalent to five light seconds, figure 5, it is composed of three split units, each one of them will emit two laser beams to be received by the two other units, means we have six laser beams to be adjusted.



**Figure 5: LISA, caser interferometer sapace Antema**

As we saw above,  $I = 0,00015^\circ$  /km/sec, and LISA is moving with the Sun with  $v = 250$  km/sec, so for laser beams vertical to the orbit of the Sun, the inclination in 1sec is  $i = I \cdot v = 0,00015 \cdot 250 = 0,0375^\circ$  which correspond to a tangent of 250 km at 1 sec, to be 500 km at 2sec and 1000km at 3sec and 2000 km at 4sec and finally 4000 km at 5 sec, means the end of the vertical laser beam will be 4000 km far from its target in the other unit. The deviation shown by the other beams of the other units depends on their angle of each with the orbit of the Sun. But before we leave this point we should say that the speed of LISA is not 250 km/sec only because it still uncounted, the speed of the Milky Way and its local group and others which augment the speed beyond 1000 km/sec, so 250 km/sec is the lowest speed predicted to the project. Another fact is that the adjustment of laser beams is a continuous process which makes it very difficult to achieve.

### Past, Present and Future

According to what Einstein says, if we are able to travel with the speed of light the time will freeze and stop, and if could continue with a speed greater than the speed of light we will find ourselves in the past or in the future.

## DISCUSSIONS

If we agree that all light waves spectrum emitted or reflected from anything on Earth or from planets and stars are moving away from their sources toward the deep space with the speed of light, thus, an event of ten minutes will have its light information waves moved away to the space with the speed of light in a way that it start will be farther from the Earth than its end, so if we moves away from this event wit half the speed of light  $1/2 C$ , we will see it  $1\ 1/2$  time slower, for 15 min and we will see the Earth turns slower around the Sun so that the one day will be 36 hours, but we must notice that this site is behind the spaceship, but in the site in front of the ship, things are moving  $1/2$  sec/sec faster than normal.

If we are moving with the speed  $c$ , we will see behind us all events on Earth freeze, but in the same instant if we look beyond to Jupiter for example, we will see its moon turns twice faster their speed seen from Earth.

### Example

If we are in special spaceship that is able to travel up to  $2 c$ , we expect that during our acceleration to reach the speed  $1c$ , we will see everything behind us slowing down to stop completely at the speed  $c$  then if we continue our accelerate to  $2 c$ , we will see every thing, Earth, planets, stares and galaxies start turning in opposite direction, they accelerates little a little with our acceleration till we reach the speed  $2 c$ , there, we'll see the Earth turns a complete round in 24 hours (one conversed day), but in return, when we look in front of us we will see everything turns with twice their speed observed from Earth.

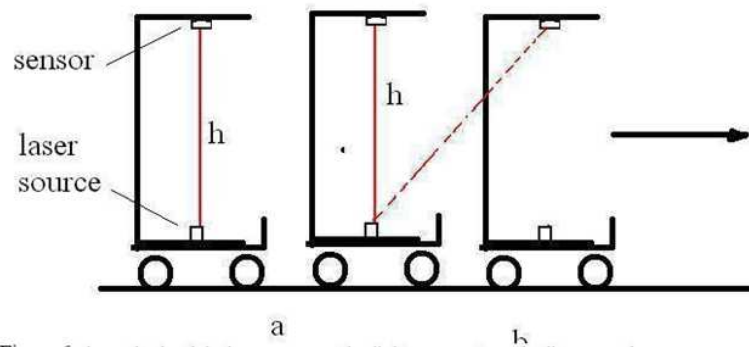
This means that traveling faster than light will lead us to see behind us our past. This past is only the registered tape of images of already lived events that we may see it but never able to change it or share again like in superman story, that is to say that what we see turning with twice their speed in front of our spaceship is not their future, because we are moving toward their local present time, Thus, it is impossible to live the future before it happens.

### Einstein's Thought Experiment of Principle of Relativity

Einstein was talking of a "scientific void" that, since we haven't any observation or way or experiment that could enable us to feel or detect the absolute motion of the Earth, nothing should prevent us s from dding laws of light to Galileo invariant. The deep problem hear is that Einstein didn't pose his PR as a hypothesis which can be true as could be wrong, but as an undisputable law or unbeatable postulate, without a proof or an experiment that confirm what he was saying. He was encouraged by a strong belief, that, if nobody have any way to evaluate or detect the absolute motion of the Earth, then no one of them will be able to evaluate or detect any difference or error, if existed, after adding laws of light to this principle, and that what actually happened.

In chapter 6, the theory of special relativity, of his book "The realm of the universe", George O. Abel has given this thought experiment of Einstein:





**Figure 6: In the Initial Observer Sees the Light Vertically From the Source to the Sensor, but in b the Observer Outside sees it traveling diagonally (Dotted Line) the Wagon Moves to the Right, the Observer Outside See the Light Moving in a Geodesic Path (Dotted Line)**

In figure 6, an inertial observer inside a wagon measures the speed of the light emitted from a light source on its floor to a sensor in its ceiling. The distance between the light source and the sensor is  $h$ . At rest, he sees the light propagate in a straight line to cross  $h$  with its speed  $C$ . Afterward the train moved to the right. This observer will feel no difference and still see the light propagate vertically in the same straight line as was doing at rest to cross  $h$  with exactly the same speed  $C$ , but Einstein imagined a second observer outside the train witnessing what is happening inside the wagon, he wouldn't see the light move through the distance  $h$  as seen by the first observer, but diagonally in a geodesic path (the dotted line in the figure),

Which is longer than  $h$  where from this point starts the greatest problem ever faced in physics of light in all its history. At such stage of experiment, Einstein was aware that he is face to face with two real impossible alternatives, in the first, or the light travels with two speeds in the same instant (relative to each observer's point of view, or second, the time dilates and the space shrinks.

Einstein ought to continue walking steadily through one of these two blocked ways, otherwise he will turn back to the scientific void above. Finally he preferred to choose the dilation of time and contraction of space, justifying this by saying: hence it is impossible that light travels one same distance with two speeds, thus, time dilation and space contraction must be possible, to declare his idea, that, not only the speed or motion is relative, but even time and space also, and that was the essence of his theory of relativity.

This theory was refused by the scientific society and treated as out of since, but little a little Einstein worked very hard in giving many other thought experiments to convince scientists majority that they have no other alternative.

## DISCUSSIONS

After Einstein declared that laws of light, like all laws of motion are all similar in all inertial frames at motion and at rest, this experiment has proved the opposite, because only the addition of light to be one of the contents of PR from all other massive contents of inertial frame has generated the puzzling different behavior of light ever faced by any of the usual material contents of the inertial system, briefly, we haven't ever faced such problem by any massive contents that we are facing since the laws of light have been added by Einstein to PR, and this says that these laws are not similar in all inertial systems at rest and in motion. We should note here that the addition of laws of light to inertial system wasn't right from the beginning, because this means that the light could be transportable by being one of the contents of inertial system which contradicts with the fact of independence of light of its source and of all material things in the whole of our

universe.

We wonder if the observer inside the wagon was able to distinguish between a gleam moving in a perfect vertical path at rest from a gleam moving in a path tilted with less than  $0,01^\circ$  for example in movement by his naked eyes to believe that both are vertical? If he was telling the truth, the observer outside will say: if the gleam moves in a vertical path during motion, therefore it must have a geodesic path.

The truth is that while the time  $t = h/C$  sec needed by the first photon of the light beam to cross  $h$ , the sensor was moving with the wagon to the right with its speed  $v$ , and the last photon will be in the verge of release of the light source at the distance

$d = v.t = v. (h/C)$  so the light beam after  $t = h/C$ sec is linking the first photon at  $d = v.(h/C)$  behind the sensor and the last photon at the light source which mean that this beam is inclined backward with an angle with the vertical axis  $y$  and this angle is directly proportional with the speed of the light source. This mean that the trajectory of the light during motion wasn't vertical like it was at rest, the thing that solve the puzzle, and this abolish the hall story of the geodesic path and our need to the alternative of time dilation and space contraction.

The geodesic line proposed in the experiment to describe the behavior of the gleam of light imagined by Einstein, is identical to inertial path traveled by a bullet. The analogy between the proposed geodesic path of the gleam and the inertial path of the bullet can be seen in that the bullet moves with two speed, the first, its own gravitational speed toward the ceiling, the second is the total speed of the wagon and for the gleam, the first speed is speed  $c$  toward the ceiling, and the second, is the wagon total speed, but Einstein preferred using "geodesic" instead of "inertial" to give the feeling that they are not the same thing, which is not true.

### Let us have This Numerical Example

For a more precise treatment of this experiment, we suggest repeating it as follow:

The light source is replaced by a laser source which emits extremely thin pulses with a cross section of less than  $1/10^{\text{th}}$  mm, thus, at rest nothing can prevent the pulse of arriving to the probe in a vertical line  $h$  with the speed  $C$  in time  $t = h/C$  sec. but in movement, the first pulse (photon) moves from  $t_0$  vertically toward the sensor with the speed  $C$ , while the vehicle (the source and the sensor) moves to the right with the speed  $v$ , so while the first pulse crosses  $h$ , the sensor was moving away from its primary place at  $t_0$ . Now suppose  $v = 100000$  km. then when the pulse crosses  $h$  in  $t = h/C$ , the sensor must have crossed  $d = v.t = v. (h/C)$ , so if  $h = 2$  m = 200 cm = 2000 mm so  $t = 2000/300000 = 0,006667$  mm so  $d = v.t = 100000 \times 0,006667 = 666,7$  mm or 66,67cm

So it is impossible for the pulse to hit the sensor as it is 66,67 cm from its new place, and this goes with the basis of light independence in Doppler Effect, that it is impossible for the light pulse to move with the light source because it is independent of it.

### Experiment in Simultaneity

Experiment that Einstein gave to prove that light in inertial system behaves like other contents of this system. he supposed a lamp fixed to the ceiling of a wagon of high speed train moving with a speed  $v$ , as that the distance from it to the front wall equals the rear wall =  $h$ . Einstein says that, contrary to common sense which predicts that the light will hit the rear wall before the front wall because the rear wall is approaching toward the lamp, the light, according to Einstein's

principle of relativity, the light will hit both walls in same instant.

## DISCUSSIONS

Well, at rest the light will hit both walls spontaneously but at a speed  $v$  what could we see?

**Front Beam:** in order the first photon cross the distance  $h$  it needs the time

$t = h/c$ , in return, the last photon is about to be released from the lamp which was moving during  $t$  to be at a distance  $d = v.t$  from  $t_0$ , as well as the front wall, thus the time  $t$  will not be sufficient for the first photon to hit the front wall which is farther  $d + h$  from  $t_0$ . So the light at the end of  $t$  will not hit the front wall.

**Rear Beam:** the first photon at the end of  $t$  will be at  $h$  on  $-x$  from  $t_0$ , while in the opposite direction, the last photon is at the lamp at a distance  $d$  from  $t_0$  on  $+x$ , so as the rear wall is closer the distance  $d$  to  $t_0$ , means less than the distance  $h$ .

Finally, at the end of  $t$  the light must have actually hit the rear wall at a distance  $h - d$ , in a time  $t$  shorter than  $t$ .

The truth is that the two equal beams at rest can never stay equal in motion.

If we accept that light will do the same thing during motion, we'll be in an embarrassing situation, because we have to decide who's view is right and who's view is wrong, the view of Einstein, that says that at motion, neither front beam contracts, nor the rear beam dilates, and both are equal, or the view of Christian Doppler that confirms the opposite, that the front beam contracts and the rear dilates?

We have to decide definitively who was right and who was wrong between Einstein and Doppler.

Frankly, Einstein didn't tell us why the front and the rear beam should be equal, but Doppler was able to demonstrate on the ground, and with mathematical way that can't accept appeal, how the front beam shrinks and how the rear dilates, thus, the view of Einstein which relied on imagination, to surpass what Doppler has given in his presentation. However, Einstein still has all the time he needs to respond to Doppler.

According to Einstein, the speed of light is constant with respect to every thing in the universe even light, the two beams shouldn't move away from each other with twice the speed of light  $2C$ , but with only  $1C$ , because the distance between the front wall and the rear wall must shrink its half length with all seated and standing passengers between them, but Einstein avoided talking of it without giving a reason.

## Second Experiment in Simultaneity

The link, <https://www.youtube.com/watch?v=wteixyqtoM>

Is a video of an experiment saying?

Imagine two observers, **one seated in the center** of a speeding train car, and another standing on the platform as the train races by. **As the center of the car passes the observer on the platform**, he sees two bolts of lightning strike the car - one on the front, and one on the rear. **The flashes of light from each strike reach him at the same time, so he concludes that the bolts were simultaneous**, since he knows **that the light from both strikes traveled the same distance at the same speed, the speed of light**. He also **predicts that his friend on the train will notice the front strike before the rear strike, because from her perspective on the platform the train is moving to meet the flash**

**from the front, and moving away from the flash from the rear.** But what does the passenger see? As her friend on the platform predicted, **6/ the passenger does notice the flash from the front before the flash from the rear.** But her conclusion is very different. As Einstein showed, the speed of the flashes as measured in the reference frame of the train must also be the speed of light. So, because each light pulse travels the same distance from each end of the train to the passenger, and because both pulses must move at the same speed, he can only conclude one thing: if he sees the front strike first, **it actually happened first.** Whose interpretation is correct - the observer on the platform, who claims that the **strikes happened simultaneously, or the observer on the train, who claims that the front strike happened before the rear strike? Einstein tells us that both are correct, within their own frame of reference. This is a fundamental result of special relativity:** from different reference frames, there can never be agreement on the simultaneity of events.

## DISCUSSIONS

Suppose the light flashes travels with the speed of light  $c$ , the train travels with the speed  $v$ , the distances from either front or rear light sources are to the observer on the platform are equal  $h$ . At rest nothing prevents the observer on the platform from receiving the two flashes simultaneously, as will as the observer inside the car, but it is good to remember that traveling the distance  $h$  by each flash was done after passing the lap of time  $t = h/c$ , means that the picture seen by the observer is of the train and the flashes emitted before the  $t = h/c$ .

### a2- During Uniform Speed

we must remember that in order to see a body, the light must travel the distance between it and our eyes, and to cross this distance the light takes time  $t = \text{distance}/c$ , or the light will not get into our eyes and we would see nothing, as will we won't notice any change on the body but after the passage of  $t = \text{distance}/c$ , so the car moving toward you is always closer than you see, and that moving away from you is farther from you than you see, and the sparrow, who quickly descend from the sky to pick up a worm or a grain of wheat, is always closer to the Earth than your eyes meets, and the plane that you watch taking off to the sky is always higher than you see. so if one is saying that the observer outside the train sees that he was facing the observer seated in the center of the car, this will need to be dismantled as so, hence he saw the center of the car, this can't happen but after light has crossed the distance from the car center to his eyes during a lap of time  $t = \text{distance}/c$  through which the car and its center are no more in their place but distant  $v \cdot t$  from the previous place at  $t_0$ .

It has become clear now that, any moving object can not be seen in its true place. notice that the distance from the train center and the observer on the platform is shorter than the distance between him and both light sources in front and in rear at rest, so not only when he was sure that he is facing his friend in the center of the car the center has displaced, but in during this instant he wasn't able to receive the two flashes also. Please remember that we should always measure  $h$  and all other distances traveled by light from  $t_0$  not from the light source, so that each flash will take a time  $t = h/c$  to meet the eyes of the observer, during which the car center moved the distance  $d = v \cdot t$ .

In return, the observer seated in the center of the car can receive both flashes in the same instant when the train is at rest. To see what happens in movement we must pay attention to that we are about Doppler Effect happening in both, front and rear light sources where the front beams in both are equally contracted as will as the rear beams are equally expanded. Now it is evident that this observer will receive the dilated rear beam coming from the front light source, and he couldn't receive the front contracted beam of the rear source because it is shorter than the rear beam of the front source.

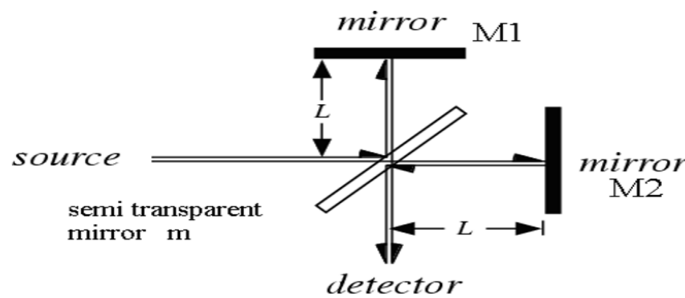
Finally, we have to conclude that the observer in the center of the car will receive the flash from the front source without any need to refer to what Einstein call "own frame of reference" which had nothing to decide who, how and when receive the light.

### Michelson Morley Experiment

The link below resumes all about this experiment, so we will go directly to the discussion.

<http://hyperphysics.phy-astr.gsu.edu/hbase/relativ/mmhist.html>

### DISCUSSIONS



**Figure 7: Michelson Morley Interferometer**

In figure 7 above, the vertical arm, the light will undoubtedly, travel the distance  $L$  from the semitransparent mirror  $m$  to the mirror  $m1$  at the end of this arm in a time  $t$  which is the same time it will need to travel the same length  $L$  after been reflected by  $m1$ , so the laser needs  $2t$  to cross  $2L$ , and this will not change during the experiment.

For the horizontal arm, it is different and need to pay attention to this example before dealing with it:

Suppose two observers, one in the west at the position  $A$ , and the other in the east at the position  $B$  and the distance from  $A$  to  $B = D$ , the one at  $A$  in the west sent to his friend at  $A'$  in the east a light pulse, who reposted at once by a similar pulse.

If the light pulse crosses  $D$  with the speed  $c$  in a time  $T = D/c$

How do we predict the behavior of both pulses?

Due the rotation of the Earth around the Sun the observer at  $B$  in the East won't receive the pulse at his primary position  $A'$  but at a recent position  $B'$ , so this pulse must travel an extra space  $d$  plus to  $D$ , with extra time  $t$  plus to  $T$  to be received.

The primary distance  $D$  between  $A$  at west and  $A'$  at east, still as it is between the recent positions  $A'$  at west and  $B'$  at east.

Now the pulse sent by the observer in the east at  $B'$  to his friend at  $A'$ , but his friend won't be there but at a third place  $A''$ , distant the space  $d$  from  $A'$ , so this pulse will travel a shorter distance  $= D - d$  in a shorter time  $= T - t$  to be received by the observer in the west. Notice that the extra space  $d$  and time  $t$  that the first pulse took from  $A$  at west to  $B'$  at east, are the same missed space  $d$  and the time  $t$  while the second pulse was traveling from  $B'$  in the east to  $A''$  in the west, and this means: the total distance traveled by both pulses =

$(D + d) + (D - d) = 2D$ , although the distance A-B' was greater than the distance B'-A'', and the total time passed for both pulses  $= (T + t) + (T - t) = 2T$  although the time took by the first pulse from A to B' was longer than from B' to A''.

Now, for the behavior of the laser beam reflected from the semi transparent mirror m in the western end of this arm toward the mirror M2 at its eastern end at a distance L between each other, due the motion of the Earth from west to east, M2 as well as m will be at a distance d from their primary places, and during the time  $T = L/c$  that laser takes in its travel to m, after has been reflected back by M2, this mirror m will be found leaving its new place due the motion of the Earth, so that it will continue moving to meet the laser in position closer from its new place a distance d, means, when the laser reach it will be closer 2 d from its primary position, so the distance crossed by the laser from m to M2 then back to m is  $(L + d) + (L - d) = 2L$  which is the same result obtained in the vertical arm, and this is true at rest (impossible) and in movement.

The above solves the problem that still puzzling the scientists. The light didn't behave as if the Earth is at rest. The result wills still the same even if the speed of the Earth was doubled thousand times. The time wasn't dilated, M2 was only moving to a position farther d from its primary place, and the length L didn't shrink but m was displace the distance 2 d from its primary place.

The error in Michelson counts began when he consider that the distance crossed by the laser from m to M2 = L = the distance it has crossed from M2 to m = L which is not correct.

My thought experiments: If a light source emitted a flash, according to our common sense we'll predict its photons will propagate with circular (spherical) form in all directions in a way that every one of them will move with the speed of light with respect to the place where the flash was emitted in the center of its circular form, and not at all with respect to the source which is moving with the absolute motion of the Earth. Consequently, it is necessary for each pair of photons opposite to each other, should keep moving away from each other with twice the speed of light. But according to the equation:  $c_{\pm} + v = c$ , Einstein decides that the speed of light is constant with respect to all mobiles even light itself, means that the precedent equation can be:  $c_{\pm} + c = c_{\pm}$ , so these photons opposite to each other shouldn't move far from each other with twice the speed of light., but only with the speed of light, the Lorentz comes with his transformation to confirm that all photons in opposite ends of the flash circle diameters must move away from each other with only the speed of light because of space contraction and time dilation. Thus, we should accept that the distance between opposite photons must shrink 300.000 km in one second to be only 300.000 km after one second.

**First Experiment:** If two observers A and B in a space ship stopping between two planets distant 600.000 km from each other, and two other observers A' and B' on these planets, so that A in the ship is facing A' on the facing planet, and B facing B' on the second planet. All of them measure the speed of light. The observer A in the ship sent a laser pulse to A' on one planet, then A' sent his pulse to A, after while B and B' did the same. Observations: as predicted, all the pulses each of pulses reached their objectives exactly one second after its emission. Second experiment: The observer A' on a planet sent a pulse to B' on the other planet. Observations: B' had received the pulse in exactly 2seconds Comments: to this moment, everything is going normally. No news about space contraction or time dilation. Third experiment: In the same instant A and B in the ship lanced two pulses to A' and B' on their planets, they reposted by sending their pulses to A and B in the ship, meanwhile, A' sent from his planet a similar pulse to B'. What difference should we expect? 1- according to common sense: all pulses must travel with the speed of light, so the distance from A to A' or from B to B' and inversely, must be crossed in one second, where the two pulses emitted from the ship moves far from each other with twice the speed

of light  $2c$ , as well as the two pulses lanced from both planets toward each other will cross the distance to the ship with  $2c$ . For the pulse that A' sent to B', it must arrive B' in 2 seconds. 2- according Einstein's principle of relativity: the equation  $c + c = c$  imposes the following: a- the two pulses emitted from the ship mustn't move far from each other with  $2c$  but with  $c$  only because the distance between A' and B' on the two planets will shrink 300.000 km in one second, so that the distance two planets becomes the half than it was 300.000 km in just one second. Notice that the time rest as it is untouched. b- the two pulses from the two planets toward the ship mustn't move toward each other with  $2c$  but with  $c$  only, because the time will dilate, so that the one second that was previously sufficient to the pulse to cross the distance from the planet to the ship alone will rest one second but this second is charged with a quantity of time twice the quantity of time that the normal (non dilated) second) was charged, so the pulse appears moving with  $1/2 c$ . notice that the distance rest as it is, untouched. c- Concerning the pulse emitted from A' on his planet to B' on the other planet, what distance with which seconds it will cross the distance from A' to B'? Hence, this pulse wasn't opposing another one coming from the other side; thus, it must behave as normal and travel 600.000 km with normal seconds to reach its target in just 2 seconds. Comments: remembering that a, b, and c happened in a same instant, we are in a real miss. How light could make distance shrinks and time dilates? How photons was able to perceive that they are alone or moving far or toward another ones? Why should we believe that planets can move with such ease and speed of their orbits to obey two pulses of light moving in opposite to each other? Would Einstein explain to us what is going on? And would he chose the right alternative between a, b and c?

End

## ABBREVIATIONS

- **DE:** Doppler effect
- **PR:** Principle of relativity

Dears, team members of neutrino experiment, C E R N, Gran Sasso..

## Good Day

According to your publications, you were able to accelerate the proton up to 99.9% of light velocity, means 297270 km/s which is 3 km/s, so you were about only 3 km\*s to reach the speed of light.

If this is true, this really deserves congratulations

Dears, I would like to draw your attention that this experiment you where dealing with a physical particle which movement is not independent of its source of emission, in addition to being influenced with the movement of Earth, which means that we can take advantage of adding speeds principle and apply it on the movement of the proton and Earth as follow:

You know that the speed of Earth around the Sun is 30 km/s and the speed of the sun around the galactic center is 250 km/s and the speed of our galaxy around the local group is between 600-800 km/s

Notice that we don't know the absolute motion of the Earth, so we have at least the minimal speed going with the proton which is the speed of Earth, and the other alternatives are represented by either the speed of the Sun 250 k/s or the speed of the galaxy 600-800 km/s, and in order to avoid falling in any exaggeration we'll adopte the speed of the Earth 30 km/s.

By adding 30 km/s to 297270 km/s that you obtained in your experiment we'll have the speed of 300027 km/s, with 27 km/s more than the speed of light, but because the proton was accelerating in a circular path, some of you may find it difficult to imagine how could such proton precede light which moves in straight line. They may be right, so I will not try to convince in what I believe is right, and I will go directly to your experiment on neutrino of last year where Me Antonio Editato have shocked all supporters of Einstein's theory of relativity all over the world by declaring that the speed of neutrino exceeded the speed of light with 1.00005 km/s, the thing that urged them to all what they can to prove as wrong, and they did. They still talking of an error of more than 60 nano second., means, less than 2 km/s.. however, this must never matter, because when we add 30 km/s to the speed of neutrino, whatever it was, we'll frankly exceeding the speed of light without any suspicion of error especially, the neutrino during this experiment was accelerating through a straight path which make this experiment ideal to apply the principle of adding subtracting velocities..

### **Dears**

The distance between CERN and gran sasso was turning with the Earth around the Sun during the experiment, so when the neutrino was emitted at CERN, first it will be supplied with additional 30 km/s (the speed of Earth around the Sun) to be faster second., during the time needed to reach Gran Sasso, it will never find it on its original place but little farther, means, the distance that have been covered by the neutrino between the two centers was longer than the true distance between them.

The best example to clarify the question is the distance crossed by the Concord aircraft from Paris to New York and vice versa, where, due the Earth revolves anticlockwise around its axis the distance the airplane crosses from Paris to New York is shorter than it is in reality, because the Concord and is moving from east to west and New York moves with Earth from west to east, so they are getting closer to each other during the time of the trip.

but during the return trip, Paris moves with the Earth in anticlockwise, from west to east, as if Paris is escaping from the aircraft which appears as if it is following it, which make the distance to be crossed by the Concord longer than it is in reality because Paris is getting away from its primary place at the beginning of the flight in New York.

The importance of this example is that in your neutrino experiment, the neutrino was moving from west to east which confirm the extra length of its trip, while if it was traveling from Gran Sasso in the east to CERN in the west, the experiment becomes tricky because the result indicating that the neutrino is faster than light might be wrong (it might be true because it rest the speed of the Sun around the galactic center which compensate the lost speed).

I hope this would be sufficient to reconsider all opinions and calculations to discover the truth that says : you were right, the neutrino was moving faster or at least with the speed of light which abolish the basis of the theory of relativity.

Finally congratulation from all of my heart. You were able to displace the thick wall of darkness which was preventing us from approaching the truth, the truth that we can summarize in this simple question: since we've actually been able to accelerate a material particle to a speed very close to the speed of light, so that it no longer separates us is only less than a kilometer / sec, and nothing was happened, does the remained 2 km/s can make the miracle that can turn the mass of the neutrino into infinite mass?

That was my conviction.. Thank you very much



Friendly yours

Mohamed Y. Barzaq

GAZA

24 Feb. 2016

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## GENERAL CONCLUSIONS

Opposite to what stated by Einstein in his special and general relativity that  $C \pm v = C$ , the study of vertical beam and other front and rear shown that  $v$  (speed of the light source) is major to explain the shape of the vertical beam and the distance retracted of the front beam and the distance of the dilated rear beam, which prove that the equation  $C \pm v = C$  is no more available because the length of the front beam =  $C.t - v.t$ , and the length of the rear =  $C.t + v.t$

This study lets no doubt that the behavior of light at rest and in motion is not at all the same which questions the ideal basis of the principle of relativity of Einstein.

## ABBREVIATIONS

- Light beam = LB

Light ray = LR

Front beam = FB

Rear beam = RB

Vertical beam = VB

Velocity of light =  $C$

Speed of the light source =  $V$

Light source =  $S$

Time =  $t$

## RESULTS

- All the problems treated by Einstein in all his thought experiments have been successfully explained and treated without the need to dilate the time or shrink the space.
- As the photon has no mass, it can never have a geodesic (inertial) path, so the whole idea of Einstein's principle of relativity is no more correct.

## CONCLUSIONS

The time is undilatable, the space is unretractable and the mass don't change, so all the theory of relativity is in question

**REFERENCES**

1. "Realm Of The Universe Fourth Edition Paperback – 1988 by **George and David Morrison and Sidney Wolf Abell** (Author) **Chapter 6 –Principle of relativity, page 90**
2. Spontaneity: <https://www.youtube.com/watch?v=wteiuxyqtoM>
3. Michelson Morley experiment: <http://hyperphysics.phy-astr.gsu.edu/hbase/relativ/mmhist.html>
4. Real of the universe By George O. Able
5. Simultaneity video:, <https://www.youtube.com/watch?v=wteiuxyqtoM>
6. Michelson Morley experiment: <http://hyperphysics.phy-astr.gsu.edu/hbase/relativ/mmhist.html>
7. Attachment: my letter to CERN direction: