

# Dual and dynamic nature of space - space is both absolute and relative- absolute motion without absolute space- a hint on consciousness!

October 01, 2013

Henok Tadesse, Electrical Engineer, BSc.

Address: Ethiopia, Debrezeit, Mobile phone: +251 910 751339

email: entkidmt@yahoo.com or wchmar@gmail.com

## Abstract

Space has dual properties: absolute and relative. The change from absolute nature to relative nature (or vice versa) is governed by dynamic nature of space. Absolute motion is absolute and has no connection with relative motion. Absolute motion is evident only from the changes in the laws and phenomena of nature (physics). Absolute motion is relative to a dynamic absolute reference frame but this reference frame itself depends on absolute motion itself!

The laws and phenomena of nature (physics) exist in their simplest forms in physical systems that are at absolute rest and become distorted / transformed in physical systems that are in absolute motion. The behavior of physical systems (such as Michelson - Morley's apparatus) can be predicted correctly only in their associated dynamic absolute reference frames. Galilean invariance principle (and Einstein's two postulates) governs the behavior of physical systems that are at absolute rest, where as absolute space governs the behavior of physical systems that are in absolute motion.

The speed of light is always equal to  $C$  for an observer who is in a source - observer system that is at absolute rest and is equal to  $C \pm V$  for an observer who is in an absolutely moving source-observer system.

This theory has the potential to explain and reconcile the results of many of the experiments and phenomena associated with the nature of the speed of light including the Michelson Morley experiment, Sagnac effect, Stellar aberration, 'GPS corrections' : slow down or speed up of clocks may be associated with absolute motion, experiments confirming the source speed independence of the speed of light. This theory may also be applied to better understand planetary systems, such phenomena as 'elliptic' orbits and Mercury perihelion advance. Mercury perihelion advance and elliptic orbits may be connected with absolute motion of the solar system. This theory reconciles the ever existing notion of absolute motion with Galilean invariance principle and Einstein's two postulates.

This theory gives a hint on consciousness! A paradox in this theory can be resolved if parts of a physical system 'know' that they are parts of the system!!! Physical systems may have consciousness!!! Connection between absolute motion and consciousness! This may solve the paradox of quantum entanglement.

## Introduction

The notion of absolute motion existed for centuries since the time of Newton. Despite Galileo's and Einstein's relativity, the notion of absolute motion always had intuitive base and experimental evidences, such as the Sagnac effect. However, its true meaning has been hidden for centuries although its existence has always been perceived intuitively.

Whenever one starts to think about absolute motion, a question arises automatically : 'relative to what?'

This (wrong) question has been the source of confusion for centuries. Newton at best thought of

absolute motion as relative to distant stars and obviously he would always be in doubt with this. The ether theory, which prevailed during the nineteenth century, was developed in an attempt to better understand absolute motion. However, there has always been no theory that explained the meaning of absolute motion which truly satisfied anyone who thinks about it. The discovery of Maxwell's equations revealed a constant (C) speed of light and this brought the ever existing problem of absolute motion to the fore front of physics. The response of the scientific community was again 'relative to what?' Then, in the second half of the nineteenth century, one of the most brilliant experiments was performed: the Michelson-Morley experiment. The unexpected null fringe shift of the MM experiment brought the problem of absolute motion to its climax. Thus, the inability to understand absolute motion together with the unexpected result of MM experiment created a sufficient condition for the revolution in physics that took place at the beginning of the twentieth century: the special theory of relativity. Einstein then had sufficient reason to deny the notion of absolute motion altogether. Although Einstein revolutionized our understanding of one aspect of the universe (relativity), his rejection of absolute motion and absolute (preferred) reference frame resulted in a wrong theory: length contraction and time dilation.

In the next section the dual and dynamic nature of space and the universe will be discussed.

## **Discussion**

We learn about motion from our everyday lives and we have always experienced that an object that is moving is in motion relative to other objects. Thus when we started thinking about (absolute) motion as a scientific problem, we instinctively tried to understand it in the framework of our knowledge about relative motion: 'relative to what?'. The ether theory was a result of this. The word 'absolute' has a special meaning in philosophy and religion. 'Absolute' means absolute. Absolute motion is not defined relative to any physical object or hypothetical matter (the ether). However, we can think of absolute motion as motion relative to some dynamic, imaginary absolute reference frame.

Space has dual properties: absolute and relative. The change from absolute nature to relative nature (or vice versa) is governed by dynamic nature of space. The co-existence of absolute and relative natures of space may be understood as: space is relative (or nothing / empty) but in some cases it acts as if it is absolute. In other words this means: 'absolute motion without absolute space'. This is a mysterious nature of space and is to be accepted just as we have accepted the dual nature of the electron.

Absolute motion is relative to a dynamic absolute reference frame but this reference frame itself depends on absolute motion itself!

Absolute motion is absolute and has no connection with relative motion. This may be restated as: Two objects may be at rest relative to each other but may have different absolute velocities or may be in motion relative to each other and yet may have the same absolute velocities. Absolute motion is relative to an imaginary (dynamic) absolute reference frame associated with every physical object or physical system in the universe. There is no universal static absolute reference frame. Absolute motion arises from acceleration or rotation of physical objects or systems. Rotational motion is always absolute and hence static. Absolute translational motion is dynamic.

Absolute motion is evident only from the changes in the laws and phenomena of nature (physics). The laws and phenomena of nature (physics) exist in their simplest forms in physical systems that are at absolute rest and become distorted / transformed in physical systems that are in absolute motion.

Absolute motion exists in non steady state (non-inertial) conditions and the (Galilean) principle of invariance applies in steady state (inertial) condition. A physical system is in inertial (steady state) condition if it has been in uniform rectilinear motion for a long enough time [1].

The behavior of physical systems (such as Michelson - Morley's apparatus) will be predicted correctly only in their associated dynamic absolute reference frames. Galilean invariance principle (and Einstein's two postulates) governs the behavior of physical systems that are at absolute rest, where as absolute space / absolute motion governs the behavior of physical systems that are in absolute motion.

The fallacy in the development of the special theory of relativity was the attempt to predict the behavior of a system (the fringe shift in Michelson-Morley apparatus) in an arbitrary reference frame. Einstein then speculated the unnecessary length contraction and time dilation hypotheses to make the speed of light invariant for all observers. The absolute motion of Michelson-Morley device (and hence its behavior, i.e fringe shift) has no connection with any relative motion of the device (relative to the sun or relative to an observer's reference frame). Absolute motion of the Michelson-Morley (MM) device is evident from a fringe shift. This means that the unexpected null fringe shift shows that the absolute velocity of the MM device is zero; and not invalidity of absolute motion.

The speed of light is invariant and equal to  $C$  for an observer who is in a source - observer system that is at absolute rest and is equal to  $C \pm V$  for an observer who is in an absolutely moving source-observer system.

Absolute motion arises from acceleration or rotation. The MM device has to be accelerated in order to develop an (dynamic) absolute velocity (and hence a fringe shift). The absolute velocity of the MM device is connected only with its history of accelerations. This has been explained in the theory of 'Dynamic Absolute Space' proposed earlier by the present author [1].

The dual nature of space can be illustrated as follows:

Imagine an MM device that has just stopped accelerating. Thus, according to the theory of 'Dynamic Absolute Space' [1], the MM device has developed an absolute velocity and hence a fringe shift. Imagine the same light source of the device is emitting light backwards towards an observer who is in motion relative to the MM device. The observer will measure the speed of light to be equal to  $C$ , irrespective of his/her own relative (or absolute) velocity. This is consistent with Einstein's light postulate (and with Galilean relativity). Thus, the behavior of MM device itself (fringe shift) is governed by its own absolute velocity, where as the behavior of the source - observer system is governed by Galilean principle of invariance because the source - observer system is at absolute rest .

The absolute velocities of the observer and the MM device determine their own behaviors. Perhaps the biological processes of the observer may be affected by his/her absolute velocity and this has no relevance with the behavior of the systems: constant speed of light measured by the observer.

If a light source and an observer exist as a system (say both the observer and the source are on

a space shuttle), thus the velocity of light relative to the observer depends on the absolute velocity of the source-observer system (the space shuttle). Here the velocity of light as measured by the observer is the property of the whole source-observer system and hence depends on the absolute velocity of the system.

If a light source and an observer exist as different systems, thus the velocity of light relative to the observer is always equal to  $C$ , irrespective of the relative (or absolute) velocity of the observer or the source, in accordance with Einstein's light postulate.

Thus Galilean principle of invariance (and Einstein's two postulates) is applicable in physical systems (say a source-observer system) that are at absolute rest. Note that we are talking about the source-observer system and not about the individual parts of the system (the source or the observer in isolation). A source or an observer that is in a source-observer system that is at absolute rest may itself have its own absolute motion / velocity. The observer, as part of a source-observer system that is at absolute rest, measures the speed of light to be  $C$ , irrespective of his/her motion relative to the source, which is in accordance with Galilean invariance principle. However, the observer, as a separate system may have his/ her own absolute motion and this will have effect on the behavior of the observer himself/herself, say a change in the biological processes, and this will have nothing to do with the speed of light measured by the observer. This shows absolute motion is absolute and has no connection with any relative motion. Absolute motion has an absolute (real) effect.

The solar system can have an absolute velocity, as a system. And this may affect the shape of the planetary orbits as the shape of the orbits is a property of the (solar) system. And we know that the earth has the moon orbiting around it, thus creating an earth-moon system. As part of the solar system, the earth and the moon act as an earth-moon system and this system will have its own absolute velocity which may affect the orbit of the moon around the earth. Thus the earth-moon system will have its own absolute velocity and does not share the absolute velocity of the solar system. Likewise, the moon will have its own absolute velocity and does not share the absolute velocity of the earth-moon system. If the absolute velocity of the earth-moon system affects the orbital shape and orbital size of the moon, what will be the effect of the absolute velocity of the moon itself on the behavior of the moon? Perhaps the absolute velocity of the moon affects the moon's properties in some way.

We may also restate this in another way: Galilean invariance principle governs the interaction between different systems ?, whereas absolute motion governs the behavior of the individual systems themselves.

Thus the MM and Sagnac's experiments are concerned with the behavior of a system itself (MM device and Sagnac device respectively), and hence should be analyzed in their own (dynamic) absolute reference frames, whereas the phenomena of stellar aberration is concerned with the interaction between two systems (the star and the observer) and is governed by Galilean principle of invariance (and Einstein's postulates).

The appropriate (preferred) reference frame to correctly predict the fringe shift in Sagnac's effect is the non rotating reference frame centered on the rotational center of the device (for simplicity). (Of course, the fringe shift can be predicted correctly in any inertial frame). The fringe shift is only due to the difference in path length of the two beams, which resulted from rotation of the device. Therefore, it should also be possible to observe a linear (translational) Sagnac effect with a linear Sagnac device that is in absolute translational motion since what matters is only the difference in path length, with a source and two detectors, one in the forward and the other in the back ward directions. A difference in the time delay of detecting the light

pulse by the two detectors will confirm absolute motion of the linear Sagnac effect.

Imagine a Sagnac device encompassing the orbit of the earth around the sun with the source and detector parts on the earth and the mirrors located at appropriate points in the orbit and suppose that the gigantic device is rotating. Assume that the detector is also part of an MM device that is meant to detect the absolute motion of the earth. Thus a paradox arises: the same detector, as part of the Sagnac device is in absolute motion but is (nearly) at absolute rest as part of the MM device. This is one of the series of reasonings that led to the discovery of the current theory.

The appropriate reference frame to predict the fringe shift in the Michelson-Morley experiment is the imaginary dynamic absolute reference frame associated with the device.

This theory has the potential to explain and reconcile the results of many of the experiments and phenomena associated with the nature of the speed of light:

- Michelson Morley experiment
- Sagnac effect
- Stellar aberration
- 'GPS corrections' : slow down or speed up of clocks may be connected with absolute motion
- Experiments confirming the source speed independence of the speed of light

This theory may also be applied to better understand planetary systems, such phenomena as 'elliptic' orbits and Mercury perihelion advance. Mercury perihelion advance and elliptic orbits may be connected with absolute motion of the solar system.

This theory may reconcile the ever existing notion of absolute motion with Galilean invariance principle and Einstein's two postulates.

## **Conclusion**

Einstein is (rightly) considered to be one of the most genius person's of all time. However, he is a genius who made some mistake. But his mistake should not be called 'mistake' because he didn't make a silly mistake. His 'mistake' was that he didn't discover the mysterious dual nature of space.

The dual nature of space is just what we have to accept if it is the nature of the universe, just as we have accepted the dual nature of the electron. Absolute motion exists without absolute space and absolute motion does not exist with absolute space.

This theory gives a hint on consciousness! A paradox in this theory can be resolved if parts of a physical system 'know' that they are parts of the system!!! Physical systems may have consciousness!!! Connection between absolute motion and consciousness! This will be further studied and presented in the next versions of this paper. This may also solve the paradox of quantum entanglement.

Always thanks to God and His Mother, Our Lady Saint Virgin Mary.

## **References**

1.