IOSR Journal of Applied Physics (IOSR-JAP)
e-ISSN: 2278-4861.Volume 10, Issue 5 Ver. I (Sep. – Oct. 2018), 80-84
www.iosrjournals.org

Mass, Time, Length, Vision of Object and Principle of Correspondence Based on Yangton and Yington Theory

Edward T. H. Wu
Corresponding Author: Edward T. H. Wu

Abstract: *The meanings of mass, time and length are discussed. They all have their own absolute values which don't change with the measurements. But the "unit" and "amount" of the units can be different subject to each measurement method. The same "unit" of the same measurement can also change its value subject to the gravitational force and aging of the universe. In addition, because the vision of object can change with the relative speeds and directions between the object and the observer, the distance of a moving object can also be different subject to each observation. However, the relative length and relative time are always constants when the corresponding identical objects and corresponding identical events are measured by the corresponding identical unit length and corresponding identical unit time. Principle of Correspondence is proposed which implies that all physical laws should maintain the same in the inertial systems measured by the corresponding identical units.*

Keywords: *Mass, Time, Length, Wu's Pairs, Relativity, Velocity Time Dilation, Yangton and Yington, Vision of Object. Theory of Vision, Corresponding Identical Object, Corresponding Identical Event, Principle of Correspondence.*

Date of Submission: 03-09-2018 Date of acceptance: 18-09-2018

I. Introduction

Nobody really understands the exact meanings of mass, time and length, never the less, Einstein's relativity [1] makes it even more complicated. Einstein's first postulation in special relativity that light speed is constant and thus velocity can cause time dilation has been misleading the scientists for more than a century [2]. In fact, mass, time and length are absolute values. They don't change with the measurements. However, subject to the measurement method, both the "unit" and "amount" in each measurement can be different. Also due to the relative speeds and directions between the object and the observer, the vision of object [3] (moving distance of an object) can varies.

II. Definitions

Mass is the quantity of a matter. According to Yangton and Yington Theory [4], Wu's Pairs are the building blocks of all matter in the universe, therefore mass is the amount of Wu's Pairs contained in a matter [5]. However, in reality, because Wu's Pairs are too small to measure, inertia, the resistance of motion that is proportional to the mass of a matter ($m = F/a$), is used for direct comparison and calculation of mass.

Length is the quantity of a linear space. Since Wu's Pairs are the building blocks of all matter in the universe, therefore length is the amount of the diameters of Wu's Pairs contained in a linear space. However, in reality, because the diameter of Wu's Pairs is too small to measure, a normal standard unit such as "meter", which contains a fixed amount of the diameters of Wu's Pairs, is used for direct comparison and measurement of length.

Time is the quantity of the duration of an event. Since Wu's Pairs are the building blocks of all matter in the universe, therefore time is the amount of the periods of Wu's Pairs contained in an event. However, in reality, because the period of Wu's Pairs are too small to measure, a normal standard unit such as "second", which contains a fixed amount of the periods of Wu's Pairs, is used for direct comparison and measurement of time.

III. Wu's Units

The measurement of a physical quantity of an object or event such as mass, time and length must contain two components: unit and amount of units.

Since Wu's Pairs are the building blocks of all matter in the universe, a Wu's Pair can be used as the basic unit mass (Wu's Unit Mass). Also, the circulation period of Wu's Pair (Wu's Unit Time) and the diameter of Wu's Pair (Wu's Unit Length) can be used as the basic unit time and basic unit length for the measurements of the objects and events at the same location.

Because of the Conservation of Mass, Wu's Unit Mass (a single Wu's Pair) stays unchanged no matter the location and environment. However, according to Wu's Spacetime Theory that Wu's Unit Time increases with Wu's Unit Length ($t_{yy} = l_{yy}^{3/2}$), also Wu's Unit Length increases with the gravitational field and decreases with the aging of the universe, Wu's Unit Time and Wu's Unit Length could be different from one location to the other location subject to the gravitational field and the aging of the universe.

IV. Measurement of time

Time doesn't change but the measurement of the duration of an event can vary subject to the unit time and the amount of unit time (relative time) of the measurement method at a location.

- Unit time is the period of a specific cycling process at a location such as the swinging pendulum, atomic clock and circulation of Wu's Pair on Earth. (Same cycling processes can have different periods at different locations subject to the gravitational field and aging of the universe)
- Relative time is the amount of the unit times of an event measured at the same location.

For example, for time duration of 25 seconds on Earth, Earth Second is the unit time and 25 is the relative time (the amount of unit times).

4.1. Wu's Time

Wu's Time is the measurement of time based on Wu' Unit Time (the circulation period of Wu's Pair) and Wu's Relative Time (the amount of Wu's Unit Times) measured at a location.

4.2. Normal Time

Normal Time is a measurement of time based on Normal Unit Time (e.g. second) and Normal Relative Time (e.g. the amount of second) measured at a location.

V. Measurement of length

Length doesn't change but the measurement of the length of an object can vary subject to the unit length and amount of unit lengths (relative length) of the measurement method at a location.

- Unit Length is the length of a specific object at a location such as human's foot and the diameter of Wu's Pair on Earth. (Same objects can have different lengths at different locations subject to the gravitational field and aging of the universe)
- Relative length is the amount of the unit lengths of the object at the same location.

For example, for a distance of 25 feet on Earth, Earth foot is the unit length and 25 is the relative length (the amount of unit lengths).

5.1. Wu's Length

Wu's Length is the measurement of length based on Wu' Unit Length (the diameter of Wu's Pair) and Wu's Relative Length (the amount of Wu's Unit Lengths) at a location.

5.2. Normal Length

Normal Length is a measurement of length based on Normal Unit Length (e.g. meter) and Normal Relative Length (e.g. the amount of meters) at a location.

VI. Measurement of Mass

Mass doesn't change but the measurement of the mass of an object can vary subject to the unit mass and amount of unit masses (relative mass) of the measurement method at a location.

- Unit mass is the mass of a specific object at any location (Conservation of Mass) such as Atomic Mass (1 AM = the fixed amount of Wu's Pairs in a single proton or neutron).
- Relative mass is the amount of the unit masses of an object at any location.

For example, Carbon atom has 12 AM, AM is unit mass and 12 is the relative mass (the amount of unit mass).

6.1. Wu's Mass

Wu's Mass is the measurement of the mass of an object based on a single Wu' Pair and Wu's Relative Mass (the amount of Wu's Pairs) at a location.

6.2. Normal Mass

Normal Mass is a measurement of the mass of an object based on Normal Unit Mass (e.g. Kg) and Normal Relative Mass (e.g. the amount of Kg) at a location.

VII. Corresponding Identical Objects and Events

When an object or event takes place or moves to a different location, the appearance of the object and the duration of the event will change with the gravitational force and the aging of the universe, but not the structure of the object and the time sequence of the event. These groups of objects and events are called "Corresponding Identical Objects" and "Corresponding Identical Events".

Corresponding identical objects like a stretched rope of rubber bands, where each rubber band has a unit mass with a corresponding identical unit length, the amount of rubber bands (relative mass and relative length) is the same, but the length of each rubber band (corresponding identical unit length) and the total length of the rope are different subject to the gravitational force and the aging of the universe. Corresponding identical objects also like the giant in "Jack and the Beanstalk", or the dwarf in "Snow White", they have the same components and structures as that of a normal man except in different sizes.

Corresponding identical events on the other hand like a video, where each picture runs at a corresponding identical unit time, the amount of picture frames (relative time) is the same, but the duration of each picture frame (corresponding identical unit time) and the total playing time are different subject to the gravitational force and the aging of the universe. Corresponding identical events also like the Mickey Mouse cartoon pictures, the whole story can be run at a different time rates subject to the rolling speeds.

As a result, when an object or event takes place or moves to a different location, they become a corresponding identical object and event. Even that their relative lengths and times maintain unchanged, but their absolute lengths and times are different because of the changes of the corresponding identical unit length and unit time subject to the gravitational force and the aging of the universe.

VIII. Principle of Time and Length

Similar to that of a rope of rubber bands and a running motion picture, for corresponding identical objects and corresponding identical events measured by the corresponding identical Wu's Unit Length and the corresponding identical Wu's Unit Time, the relative Wu's length and relative Wu's time are always constants no matter the gravitational field and the aging of the universe. For the same reasons, the relative normal length and relative normal time are also constants no matter the gravitational field and the aging of the universe. These phenomena are called "Principle of Length" and "Principle of Time".

For example, a 3000 cycles pendulum swing event on Saturn takes the same amount of cycles but more slowly than that on Earth because the pendulum swing on Saturn is slower with longer period (Saturn second) than that on Earth (Earth second) due to Saturn's large gravity. Another example is that a six foot tall man on Saturn can have the same six foot height but is actually taller than his twin on Earth, because one foot on Saturn (Saturn foot) is longer than that on Earth (Earth foot) also due to Saturn's large gravity.

IX. Principle of Correspondence

Similar to the measurement of the duration of a time period and the length of an object, in the measurement of the physical properties of corresponding identical objects and corresponding identical events by the corresponding identical unit mass (single Wu's Pair), corresponding identical unit time and corresponding identical unit length, each property should have a constant relative amount, no matter the gravitational field and the aging of the universe. This phenomenon is named "Principle of Correspondence".

"Principle of Correspondence" is applied only based on the following theories:

1. Wu's Pair is the building block of all the matter in the universe (a single Wu's Pair is a unit mass).
2. Wu's Pair always exists and can't be separated and destroyed by any means (conservation of mass).

Because of the Principle of Correspondence, all physical laws maintain unchanged in an inertia system (constant speed) measured by the corresponding identical units.

X. Vision of Object

The "Vision of Object" [3] is the images of an object observed by an observer at a reference point during a period of time. The images of the object can be presented by the distances and directions measured by a fixed coordination system at the reference point (reference system).

The relative position and direction of an object with respect to an observer at anytime, the image of object, is always maintained no matter the reference systems. This phenomenon is named "Principle of Vision" [3].

According to the Principle of Vision, the relative positions and directions of an object with respect to an observer during a period of time, the "Vision of Object", are also always maintained no matter the reference systems.

A vision of object, in spite of observed directly by the observer, can be constructed from the images of the object observed at a reference point during a period of time. Each image is placed into the same picture by over lapping the position of the observer upon the final position of the observer, maintaining the same relative positions and directions of the object to the observer in the image of each time frame as that observed at the reference point. This rule is named "Theory of Vision" [3].

More specifically, according to the Principle of Vision, the vision of an object can be constructed into a picture, by superimposing the image of the object and the observer in each time frame during a period of time observed at a reference point. In which the corresponding position of the observer and his coordination system in each time frame are placed together completely matched and overlapped on top of the final position of the observer, while the relative position and direction between the object and the observer in the image of each time frame during the time period are maintained.

Two schematic diagrams are illustrated here to explain the construction process of vision of object from a reference point to an observer:

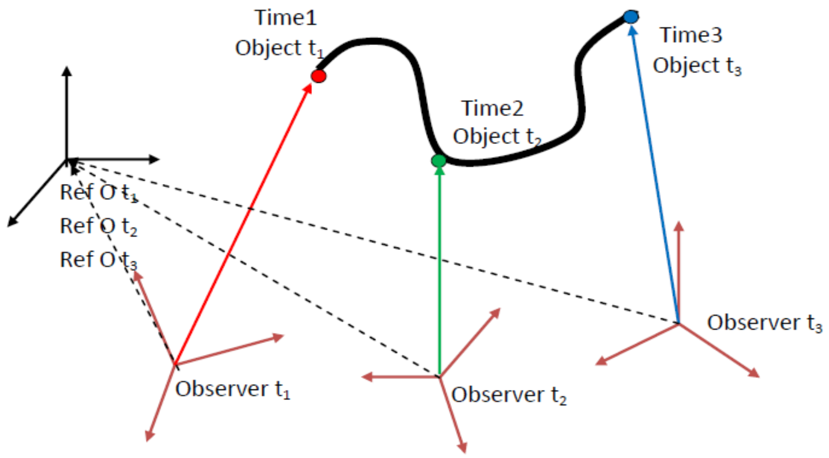

Fig. A Vision of an object observed at a reference point.

Fig. A shows the vision of an object observed at reference point O. Object t_1, Object t_2 and Object t_3 represent the positions and directions of the object; and Observer t_1, Observer t_2 and Observer t_3 represent the positions and directions of the observer, observed at the reference point O in the time frame t_1, t_2 and t_3 respectively. The curve from Object t_1 to Object t_2 and Object t_3 represents the vision of the object observed at reference point O during the time period from t_1 to t_3.

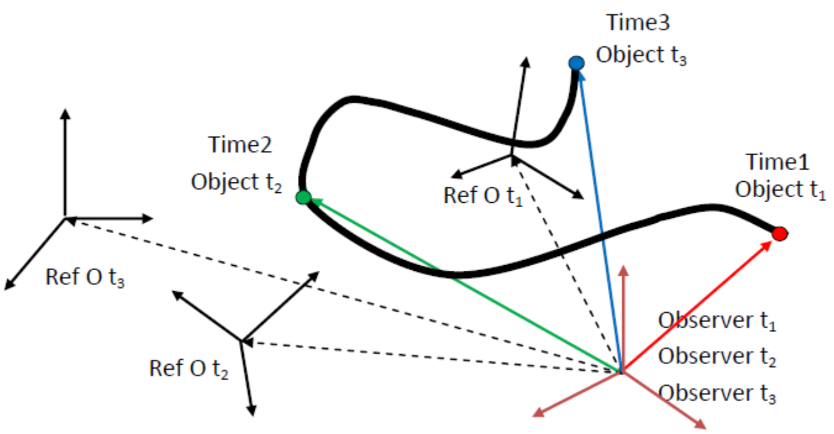

Fig. B Vision of an object observed at an observation point constructed from a reference point.

Fig. B shows the vision of the object constructed at the final position of the observer from the vision of the object observed at the reference point O. In which, Observer t_1, Observer t_2 and Observer t_3 and their coordination systems are completely matched and overlapped on top of Observer t_3. The same relative positions and directions of the corresponding Object t_1, Object t_2 and Object t_3 to Observer t_1, Observer t_2 and Observer t_3 are maintained as that in Fig. A observed at reference point O. A corresponding curve from Object t_1 to Object t_2 and Object t_3 representing the vision of object observed by the observer during the time period from t_1 to t_3 can thus be constructed.

Since the vision of an object changes with the relative speeds and directions between the object and the observers, the moving distance of an object can be different measured by different observers.

XI. Conclusion

Mass, time and length have absolute values. They don't change with the measurement methods. But the "unit" and "amount" of the units can be different subject to each measurement. The same "unit" of the same measurement can also change its value subject to the gravitational force and aging of the universe. In addition, because the vision of object can change with the relative speeds and directions between the object and the observer, the distance of a moving object can also be different subject to each observation. However, the relative length and relative time are always constants when the corresponding identical objects and corresponding identical events are measured by the corresponding identical unit length and corresponding identical unit time. Principle of Correspondence is proposed which implies that all physical laws should maintain the same in the inertial systems measured by the corresponding identical units.

Reference

[1]. Einstein A. (1916), Relativity: The Special and General Theory (Translation 1920), New York: H. Holt and Company.

[2]. Edward T. H. Wu. "Light Speed in Vacuum is not a Constant and Time Doesn't Change with Velocity–Discrepancies Between Relativities and Yangton & Yington Theory". American Journal of Modern Physics. Vol. 4, No. 6, 2015, pp. 367-373. doi: 10.11648/j.ajmp.20150406.12.

[3]. Edward T. H. Wu. "Vision of Object, Vision of Light, Photon Inertia Transformation and Their Effects on Light Speed and Special Relativity." IOSR Journal of Applied Physics (IOSR-JAP), vol. 9, no. 5, 2017, pp. 49–54.

[4]. Edward T. H. Wu, "Yangton and Yington–A Hypothetical Theory of Everything", Science Journal of Physics, Volume 2015, Article ID sjp-242, 6 Pages, 2015, doi: 10.7237/sjp/242.

[5]. Edward T. H. Wu. "Mass, Momentum, Force and Energy of Photon and Subatomic Particles, and Mechanism of Constant Light Speed Based on Yangton & Yington Theory". American Journal of Modern Physics. Vol. 5, No. 4, 2016, pp. 45-50. doi: 10.11648/j.ajmp.20160504.11.

IOSR Journal of Applied Physics (IOSR-JAP) is UGC approved Journal with Sl. No. 5010, Journal no. 49054.

Edward T. H. Wu. " Mass, Time, Length, Vision of Object and Principle of Correspondence Based on Yangton and Yington Theory" IOSR Journal of Applied Physics (IOSR-JAP) , vol. 10, no. 5, 2018, pp. 80-84.