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General Relativity and Yangton and Yington Theory – Corresponding Identical Object and Event in Large Gravitational Field Observed on Earth

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Abstract: *According to Yangton and Yington Theory, for an observation on earth, in addition to have larger length and time, an object and event happen on a massive star (black hole) with large gravitational field has smaller velocity and acceleration comparing to that of the corresponding identical object and event happen on earth with less gravitational field. This result agrees very well with general relativity.*

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

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I. General Relativity

Einstein's General Relativity [1] [2] claimed that acceleration is the principle factor in the universe. Because time can be influenced by acceleration and acceleration can be changed by gravitational force, therefore, clocks that is far from massive bodies, or at higher gravitational potential, run more quickly and clocks close to massive bodies or at lower gravitational potential run more slowly. This phenomenon is known as "Gravitational Time Dilation" [3].

II. Yangton and Yington Theory

Yangton and Yington Theory [4] is a hypothetical theory based on Yangton and Yington circulating particle pairs (Wu's Pairs) [4] with a build-in inter-attractive force (Force of Creation) [4] that is proposed as the fundamental building blocks of the universe. The theory explains the formation of all subatomic particles and the correlations between space, time, energy and matter.

III. Wu's Unit Time and Wu's Unit Length

The measurement of a physical quantity such as mass, time and length contain two components: Unit and the Amount of Unit. Since Wu's Pairs are the building blocks of all matter in the universe, a Wu's Pair (Wu's Unit Mass) can be used as the basic unit mass. Also, the circulation period of Wu's Pair (Wu's Unit Time t_{yy}) and the diameter of Wu's Pair (Wu's Unit Length l_{yy}) can be used as the basic unit time and basic unit length for the measurements of the objects and events at the same location with the same gravitational field and aging of the universe [5].

Because of the Conservation of Mass, Wu's Unit Mass as a single Wu's Pair stays unchanged at all time. However, according to Wu's Spacetime Theory ($t_{yy} = \gamma\, l_{yy}^{3/2}$) [5] that Wu's Unit Time increases with Wu's Unit Length, also Wu's Spacetime Shrinkage Theory [6] that 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 aging of the universe.

IV. Principle of Correspondence

When the same object and event takes place or moves to a different location under an equilibrium condition, it maintains the same mass, structure and time sequence, despite the dimensions of the object and the duration of the event that are related to Wu's Unit Time and Wu's Unit Length depending on the gravitational field and aging of the universe. This object is called "Corresponding Identical Object", the event is called "Corresponding Identical Event" and the phenomenon is named "Principle of Correspondence" [7].

V. General Relativity & Yangton and Yington Theory

Nevertheless the changes of the dimensions and duration of the corresponding identical object and event related to the gravitational field can be interpreted by Yangton and Yington Theory as follows:

1. Same object and event observed at different reference points.

A. Length

The length L of the object and event can be measured by the Normal Unit Length (such as meter).

$L = l\ l_s$

Where l is the Amount of Normal Unit Length and l_s is the Normal Unit Length.

And

$I_s = m\ l_{yy}$

Where m is a constant, I_s is Normal Unit Length and l_{yy} is Wu's Unit Length.

Therefore,

$L = l\ m\ l_{yy}$

For the same object and event, L is a constant. Therefore,

$l \propto l_{yy}^{-1}$

For an object and event happens on a massive star, because of the smaller F_{g0} and l_{yy0} on earth, bigger Amount of Normal Unit Length l_0 can be observed on earth.

B. Time

The time T of the object and event can be measured by the Normal Unit Time (such as second).

$T = t\ t_s$

Where t is the Amount of Normal Unit Time and t_s is the Normal Unit Time.

And

$t_s = n\ t_{yy}$

Where n is a constant, t_s is Normal Unit Time and t_{yy} is Wu's Unit Time.

Also because of Wu's Spacetime Theory,

$t_{yy} = \gamma\ l_{yy}^{3/2}$

Where γ is Wu's Spacetime Constant.

Therefore,

$T = t\ n\ \gamma\ l_{yy}^{3/2}$

For the same object and event, T is a constant. Therefore,

$t \propto l_{yy}^{-3/2}$

For an object and event happens on a massive star, because of the smaller F_{g0} and l_{yy0} on earth, bigger Amount of Normal Unit Time t_0 can be observed on earth.

C. Velocity

The velocity V of the object and event can be measured by the Normal Unit Velocity (such as meter/second).

$V = v\ (l_s/t_s)$

Where v is the Amount of Normal Unit Velocity and l_s/t_s is the Normal Unit Velocity.

Therefore,

$V = v\ m\ n^{-1}\ \gamma^{-1}\ l_{yy}^{-1/2}$

For the same object and event, V is a constant. Therefore,

$v \propto l_{yy}^{1/2}$

For an object and event happens on a massive star, because of the smaller F_{g0} and l_{yy0} on earth, smaller Amount of Normal Unit Velocity v_0 can be observed on earth.

D. Acceleration

The acceleration A of the object and event can be measured by the Normal Unit Acceleration (such as meter/second^2).

$A = a\ (l_s/t_s^2)$

Where a is the Amount of Normal Unit Acceleration and l_s/t_s^2 is the Normal Unit Acceleration.

Therefore,

$A = a\ m\ n^{-2}\ \gamma^{-2}\ l_{yy}^{-2}$

For the same object and event, A is a constant. Therefore,

$a \propto l_{yy}^{2}$

For an object and event happens on a massive star, because of the smaller F_{g0} and l_{yy0} on earth, smaller Amount of Normal Unit Acceleration a_0 can be observed on earth.

2. Corresponding Identical Object and Event observed on Earth.

A. Length

Because

$L = l\ m\ l_{yy}$

For the corresponding identical object and event, l is a constant. Therefore,

$L \propto l_{yy}$

For an object and event happens on a massive star, it has larger F_g and l_{yy} and hence larger L comparing to that of a corresponding identical object and event happens on earth. Even more, for the same object and event happens on the star, because of the smaller F_{g0} and l_{yy0} on earth, bigger l_0 can be observed on earth. In other words, for an observation on earth, the Amount of Normal Unit Length (l_0) of an object and event happens on a massive star is longer comparing to that of the corresponding identical object and event happens on earth.

B. Time

Because

$T = t\ n\ \gamma\ l_{yy}^{3/2}$

For the corresponding identical object and event, t is a constant. Therefore,

$T \propto l_{yy}^{3/2}$

For an object and event happens on a massive star, it has larger F_g and l_{yy} and hence larger T comparing to that of a corresponding identical object and event happens on earth. Even more, for the same object and event happens on the star, because of the smaller F_{g0} and l_{yy0}, bigger t_0 can be observed on earth. In other words, for an observation on earth, the Amount of Normal Unit Time (t_0) of an object and event happens on a massive star is longer comparing to that of the corresponding identical object and event happens on earth.

C. Velocity

Because

$V = v\ m\ n^{-1}\ \gamma^{-1}\ l_{yy}^{-1/2}$

For the corresponding identical object and event, v is a constant. Therefore,

$V \propto l_{yy}^{-1/2}$

For an object and event happens on a massive star, it has larger F_g and l_{yy} and hence smaller V comparing to that of a corresponding identical object and event happens on earth. Even more, for the same object and event happens on the star, because of the smaller F_{g0} and l_{yy0} on earth, smaller v_0 can be observed on earth. In other words, for an observation on earth, the Amount of Normal Unit Velocity (v_0) of an object and event happens on a massive star is smaller comparing to that of the corresponding identical object and event happens on earth.

D. Acceleration

Because

$A = a\ m\ n^{-2}\ \gamma^{-2}\ l_{yy}^{-2}$

For the corresponding identical object and event, a is a constant. Therefore,

$A \propto l_{yy}^{-2}$

For an object and event happens on a massive star, it has larger F_g and l_{yy} and hence smaller A comparing to that of a corresponding identical object and event happens on earth. Even more, for the same object and event happens on the star, because of the smaller F_{g0} and l_{yy0} on earth, smaller a_0 can be observed on earth. In other words, for an observation on earth, the Amount of Normal Unit Acceleration (a_0) of an object and event happens on a massive star is smaller comparing to that of the corresponding identical object and event happens on earth.

VI. Conclusion

According to Yangton and Yington Theory, for an observation on earth, in addition to have larger length (Amount of Normal Unit Length) and time (Amount of Norma Unit Time), an object and event happen on a massive star (black hole) with large gravitational field has smaller velocity (Amount of Normal Unit Velocity) and acceleration (Amount of Normal Unit Acceleration) comparing to that of the corresponding identical object and event happen on earth with less gravitational field. This result agrees very well with general relativity.

References

[1]. Einstein A. (1916), Relativity: The Special and General Theory (Translation 1920), New York: H. Holt and Company.
[2]. https://en.wikipedia.org/wiki/General_relativity.
[3]. A. Einstein, "Uber das Relativitatsprinzip und die aus demselben gezogenen Folgerungen", Jahrbuch der Radioaktivitat und Elektronik 4, 411–462 (1907); also in H M Schwartz, "Einstein's comprehensive 1907 essay on relativity, part I", American Journal of Physics, vol.45,no.6 (1977) pp.512–517; Part II, vol.45 no.9 (1977), pp.811–817; Part III, vol.45 no.10 (1977), pp.899–902.
[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. “Time, Space, Gravity and Spacetime Based on Yangton & Yington Theory, and Spacetime Shrinkage Versus Universe Expansion”. American Journal of Modern Physics. Vol. 5, No. 4, 2016, pp. 58-64. doi: 10.11648/j.ajmp.20160504.13.
[6]. Edward T. H. Wu “Hubble’s Law Derived from Wu’s Spacetime Shrinkage Theory and Wu’s Spacetime Reverse Expansion Theory versus Universe Expansion Theory.” IOSR Journal of Applied Physics (IOSR-JAP), vol. 11, no. 1, 2019, pp. 03-07.
[7]. 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.

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