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Principle of Correspondence, Principle of Parallelism and Redshift Based on Yangton and Yington Theory

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[Abstract]
According to Yangton and Yington Theory, a single beam Redshift can be explained nicely by Principle of Correspondence in which the amount of unit quantity of a corresponding identical object or event remains constant in all equilibrium states. However, a wide spectrum Redshift can only be interpreted by combining both Principle of Correspondence and Principle of Parallelism in which the correlation between the unit quantities of two different corresponding identical objects or events maintains constant in all equilibrium states. In this paper, a step by step derivation and a thorough study of the Redshift phenomena based on these two principles are discussed.

[Keywords]
Yangton and Yington Theory, Wu's Pairs, Wu's Spacetime Theory, Wu's Spacetime Shrinkage Theory, Redshift, Principle of Correspondence, Principle of Parallelism.

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I. Wu's Pairs and Photons

According to Yangton and Yington Theory [1], Wu's Pairs, a circulating Yangton and Yington Antimatter particles [1], are the building blocks of the universe. Wu's Unit Length l_{yy}, the size of Wu's Pairs, and Wu's Unit Time t_{yy}, the period of Wu's Pairs [2] are the foundations of space and time [3]. They are correlated to each other by Wu's Spacetime Theory $t_{yy} = \gamma l_{yy}^{3/2}$ [3].

Photon is a free Wu's Particle [1]. It carries the DNA of the ancient star (light source). A photon emitted from an ancient star is embedded with Wu's Unit Length l_{yy} of the star in its wavelength ($\lambda \propto l_{yy}$). Since it is a free particle, no energy can be passed to photon through contact collisions. In other words, a photon emitted from an ancient star is not in equilibrium with the observer on earth. All embedded information in the photon from the ancient star such as Wu's Unit Length (l_{yy}) and wavelength ($\lambda \propto l_{yy}$) are preserved and can be revealed in the Redshift spectrum [4] observed on earth.

II. Principle of Correspondence

Under equilibrium conditions (constant gravitational field and aging of the universe), when an object or event (the same object or event) moves from one location (one equilibrium state) to another location (another equilibrium state), or two identical objects or events appeared at two different locations (two different equilibrium states), then a property is measured by a unit quantity, the "amount of unit quantity" are always the same no matter of the gravitational field nor aging of the universe. This phenomenon is known as "Principle of Correspondence" [5]. These objects are called "Corresponding Identical Object" and these events are called "Corresponding Identical Event". Also, the unit length is called "Corresponding Identical Unit Length" and the unit time is called "Corresponding Identical Unit Time". For any corresponding identical object or event, the Corresponding Identical Unit Length is a function of the gravitational field and aging of the universe.

A corresponding Identical Object or Event can be the electron in the covalent bond of a compound or the electron in the conduction band of a semiconductor. A typical example is the H2 absorption spectrum where each line in the spectrum represents a photon of specific wavelength either emitted from or absorbed by an electron of specific chemical bonds which is known as a corresponding identical object or event.

III. Principle of Parallelism

Under equilibrium conditions (constant gravitational field and aging of the universe), two different corresponding identical objects or events move from one location (one equilibrium state) to another location (another equilibrium state), or appeared at two different locations (two different equilibrium states), the correlation between the unit quantities (such as Wu's Unit Length or Wu's Unit Time) of the two different corresponding identical objects or events maintains unchanged no matter of the position, neither the gravitational field nor aging of the universe. This phenomenon is named "Principle of Parallelism".

For example, the method using Wu's Unit Length of the emission line of Krypton – 86 [6] and Wu's Unit Time of Cesium atomic clock [7] to measure the velocity of a corresponding identical object based on Principle of Parallelism can be interpreted as follows:
Because
$V = v\, l_s/t_s$
$l_s = m'l_{yyR}$
$l_{yyR} = \alpha\, l_{yy}$
$t_s = n't_{yyA}$
$t_{yyA} = \beta\, t_{yy}$
Therefore,

$$V = v\,(m'\alpha/n'\beta)(l_{yy}/t_{yy})$$

Where l_s is the normal unit length (meter), t_s is the normal unit time (second), l_{yyR} is the Wu's Unit Length of the emission line of Krypton – 86, t_{yyA} is the Wu's Unit Time of the Cesium atomic clock, l_{yy} is the Wu's Unit Length and t_{yy} is the Wu's Unit Time of the object or event.
Because of Wu's Spacetime Theory
$t_{yy} = \gamma l_{yy}^{3/2}$
Given
$m = m'\alpha$ and $n = n'\beta$
Therefore,

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

Where V is the velocity of the object or event, v is the amount of normal unit velocity. m', n', α, β are constants according to Principle of Parallelism, m is the constant of normal unit length, n is the constant of normal unit time, γ is Wu's Spacetime Constant and l_{yy} is the Wu's Unit Length of the object or event.
For a corresponding identical object or event, v is a constant, therefore,

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

IV. Photon Emission and Redshift

According to Yangton and Yington Theory, a single beam Redshift can be explained nicely by Principle of Correspondence in which the amount of unit quantity of a corresponding identical object or event remains constant in all equilibrium states. However, a wide spectrum Redshift can only be interpreted by combining both Principle of Correspondence and Principle of Parallelism in which the correlation between the unit quantities of two different corresponding identical objects or events maintains constant in all equilibrium states.
A mathematical interpretation of the Redshift Spectrum can be derived as follows:
Two equilibrium environments: Ancient Star and Present Earth.
Two different corresponding identical objects: H^+ and H^{++} are two different corresponding identical objects in H_2 absorption spectrum.
Photons: H^+ emits photon λ_{1i} and H^{++} emits photon λ_{2i} in the ancient star; and H^+ emits photon λ_{1f} and H^{++} emits photon λ_{2f} on the present earth respectively (characteristic lines in the spectrums).
Wu's Unit Lengths: l_{yy1i} is the Wu's Unit Length of H^+ and l_{yy2i} is the Wu's Unit Length of H^{++} in the ancient star; and l_{yy1f} is the Wu's Unit Length of H^+ and l_{yy2f} is the Wu's Unit Length of H^{++} on the present earth. According to Wu's Spacetime Shrinkage Theory [8], Wu's Unit Length in ancient star is larger than that of the present earth.
Because of Principle of Parallelism,

$$l_{yy1i} = \alpha\, l_{yy2i}$$
$$l_{yy1f} = \alpha\, l_{yy2f}$$

Where α is a constant.
Therefore,

$$(l_{yy1i} - l_{yy1f})/l_{yy1f} = (l_{yy2i} - l_{yy2f})/l_{yy2f}$$

Furthermore,
Because
$\nu = 1/t_{yy}$
Also Wu's Spacetime Theory
$t_{yy} = \gamma l_{yy}^{3/2}$
Therefore,

$$\nu = \gamma^{-1}\, l_{yy}^{-3/2}$$

Because photon separation process is an Inertia Transformation, also the separation force is a fixed string force, therefore the Amount of Normal Unit Velocity of the Absolute Light Speed observed at light source is always a constant $3x10^8$.

$$C = c\, m\, n^{-1}\, \gamma^{-1}\, l_{yy}^{-1/2}$$

Where C is the Absolute Light Speed $3x10^8$ m/s, c is the amount of normal unit light speed $3x10^8$, m is the constant of normal unit length, n is the constant of normal unit time, γ is Wu's Spacetime Constant and l_{yy} is Wu's Unit Length of the photon (light source).

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

And

$\lambda = C/\nu$

Therefore,

$$\lambda \propto l_{yy}$$

Also,

$$(\lambda_{1i} - \lambda_{1f})/\lambda_{1f} = (\lambda_{2i} - \lambda_{2f})/\lambda_{2f}$$

Although the Principle of Parallelism $l_{yy1} \propto l_{yy2}$ is a fundamental rule according to Yangton and Yington Theory, it can be proved by two important facts in photon emissions: (1) $C_1 = C_2$, Absolute Light Speeds are the same for all corresponding identical objects or events in the same equilibrium environment (Fig. 1). For example, light speed is C = $3x10^8$ m/s on earth no matter of light source. (2) $c_1 = c_2$, according to Principle of Correspondence, the amounts of normal unit velocity of a corresponding identical object or event in two different equilibrium environments are equal. For example, the amount of normal light speed is $3x10^8$ on both earth and Mars.

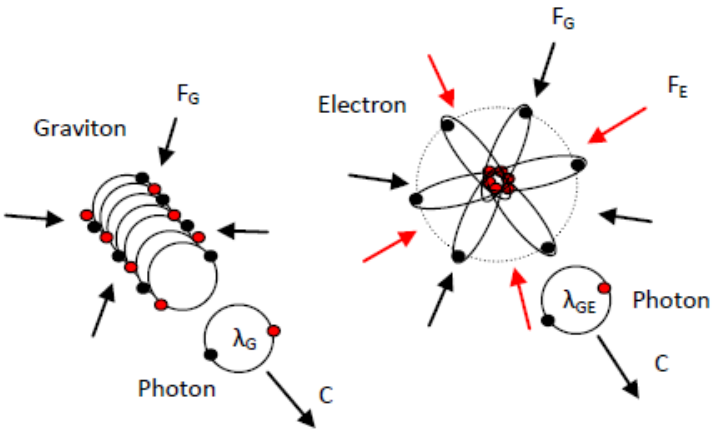

Fig. 1 Photon (a free Yangton and Yington Pair) Emissions from Graviton (a string structure of Yangton and Yington Pairs) and Electron (a sphere structure of Yangton and Yington Pairs) under the influences of Gravitational Force and Electromagnetic Force.

1. First light source (a corresponding identical object or event) associated with gravitational field in two different equilibrium environments:

$F_{g1} \rightarrow l_{yyg1} \rightarrow \lambda_{yyg1}$

$F_{g2} \rightarrow l_{yyg2} \rightarrow \lambda_{yyg2}$

2. Second light source (another corresponding identical object or event) associated with gravitational field and electromagnetic force (chemical bonds) in two different equilibrium environments:

$F_{gc1} \rightarrow l_{yygc1} \rightarrow \lambda_{yygc1}$

$F_{gc2} \rightarrow l_{yygc2} \rightarrow \lambda_{yygc2}$

A. Constant Light Speed

Under the same equilibrium environment, the Absolute Light is constant (such as $3x10^8$ m/s on earth) no matter of light source.

Because

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

Where V is the velocity, v is the amount of normal unit velocity, m is the constant of normal unit length, n is the constant of normal unit time, γ is Wu's Spacetime Constant and l_{yy} is Wu's Unit Length.

Therefore,

$C_g = c_g\, m_g\, n_g^{-1}\, \gamma^{-1} l_{yyg}^{-1/2}$

$C_{gc} = c_{gc}\, m_{gc}\, n_{gc}^{-1}\, \gamma^{-1} l_{yygc}^{-1/2}$

Because

$$C_g = C_{gc}$$

Therefore, for the two light sources in the same environments,

$$c_{g1}\, m_{g1}\, n_{g1}^{-1}\, l_{yyg1}^{-1/2} = c_{gc1}\, m_{gc1}\, n_{gc1}^{-1}\, l_{yygc1}^{-1/2}$$
$$c_{g2}\, m_{g2}\, n_{g2}^{-1}\, l_{yyg2}^{-1/2} = c_{gc2}\, m_{gc2}\, n_{gc2}^{-1}\, l_{yygc2}^{-1/2}$$

B. Corresponding Identical Object and Event

For a corresponding identical object or event, the amount of normal unit velocity v maintains the same no matter of the normal unit velocity. Also, m is the constant of normal unit length and n is the constant of normal unit time.

Because

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

Therefore,

$C_g = c_g\, m_g\, n_g^{-1}\, \gamma^{-1} l_{yyg}^{-1/2}$

$C_{gc} = c_{gc}\, m_{gc}\, n_{gc}^{-1}\, \gamma^{-1} l_{yygc}^{-1/2}$

Because

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

$c_{g1} = c_{g2}$

$m_{g1} = m_{g2}$

$n_{g1} = n_{g2}$

Therefore,

$$c_{g1}\, m_{g1}\, n_{g1}^{-1} = c_{g2}\, m_{g2}\, n_{g2}^{-1}$$
$$c_{gc1}\, m_{gc1}\, n_{gc1}^{-1} = c_{gc2}\, m_{gc2}\, n_{gc2}^{-1}$$

Furthermore, for two corresponding objects or events in different environments, one associated with gravitational field and the other associated with gravitational field and chemical bonds,

Because

$$c_{g1}\, m_{g1}\, n_{g1}^{-1}\, l_{yyg1}^{-1/2} = c_{gc1}\, m_{gc1}\, n_{gc1}^{-1}\, l_{yygc1}^{-1/2}$$
$$(c_{g1}\, m_{g1}\, n_{g1}^{-1})\, l_{yyg1}^{-1/2} = (c_{gc2}\, m_{gc2}\, n_{gc2}^{-1})\, l_{yygc1}^{-1/2} \quad (1)$$
$$(c_{g2}\, m_{g2}\, n_{g2}^{-1})\, l_{yyg1}^{-1/2} = (c_{gc1}\, m_{gc1}\, n_{gc1}^{-1})\, l_{yygc1}^{-1/2} \quad (2)$$

Also,

$$(c_{g2}\, m_{g2}\, n_{g2}^{-1})\, l_{yyg2}^{-1/2} = (c_{gc2}\, m_{gc2}\, n_{gc2}^{-1})\, l_{yygc2}^{-1/2}$$
$$(c_{g1}\, m_{g1}\, n_{g1}^{-1})\, l_{yyg2}^{-1/2} = (c_{gc2}\, m_{gc2}\, n_{gc2}^{-1})\, l_{yygc2}^{-1/2} \quad (3)$$
$$(c_{g2}\, m_{g2}\, n_{g2}^{-1})\, l_{yyg2}^{-1/2} = (c_{gc1}\, m_{gc1}\, n_{gc1}^{-1})\, l_{yygc2}^{-1/2} \quad (4)$$

According to (1) & (3), also (2) & (4)

$$l_{yyg1}^{-1/2}/l_{yygc1}^{-1/2} = (c_{gc2}\, m_{gc2}\, n_{gc2}^{-1})/(c_{g1}\, m_{g1}\, n_{g1}^{-1})$$
$$l_{yyg2}^{-1/2}/l_{yygc2}^{-1/2} = [(c_{gc2}\, m_{gc2}\, n_{gc2}^{-1})/(c_{g1}\, m_{g1}\, n_{g1}^{-1})$$

Therefore,

$$l_{yyg1}^{-1/2}/l_{yygc1}^{-1/2} = l_{yyg2}^{-1/2}/l_{yygc2}^{-1/2}$$

And

$$l_{yyg1}/l_{yygc1} = l_{yyg2}/l_{yygc2}$$
$$l_{yyg} \propto l_{yygc}$$

This result agrees to Principle of Parallelism.

Also,

$$l_{yy} \propto \lambda$$

Therefore,

$$\lambda_{g1}/\lambda_{gc1} = \lambda_{g2}/\lambda_{gc2}$$

As a result, all characteristic lines in the spectrum of redshift moves proportionally towards longer wavelengths (red side), therefore the redshift maintains the same value no matter of the wavelength.

$$(\lambda_{f1} - \lambda_{i1})/\lambda_{f1} = (\lambda_{f2} - \lambda_{i2})/\lambda_{f2}$$

I. Conclusion

According to Yangton and Yington Theory, a single beam Redshift can be explained nicely by Principle of Correspondence in which the amount of unit quantity of a corresponding identical object or event remains constant in all equilibrium states. However, a wide spectrum Redshift can only be interpreted by combining both Principle of Correspondence and Principle of Parallelism in which the correlation between the unit quantities of two different corresponding identical objects or events maintains constant in all equilibrium states. In this paper, a step by step derivation and a thorough study of the Redshift phenomena based on these two principles are discussed.

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