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JUNICHI HASHIMOTO'S LAW

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Abstract

In the history of physics, various phenomena and experimental facts brought about by objects have been summarized and described by great scientists in the form of several important laws. I focused on how they could be universal laws. I then set out to verify the validity of my relational physics in solving this mystery by creating a new model. The results reveal that common laws govern the behavior of objects on a wide range of scales, from the earth to the planets of the solar system, to the atomic structure, and to the universe. I named it "Junichi Hashimoto's Law".

1. Introduction

This universe is a clockwork organism. If so, then all the parts that make it up must be precisely intertwined and affect each other, just as gears do. The idea of relational physics, which I founded, is that the relationship between objects as such parts is energy [1]. By taking this position (remote theory), I have succeeded in unifying the four forces of nature within a single framework. For force or energy to be a relationship

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that connects objects to each other, the following requirements must be satisfied. There is more than one party as an interacting entity, the speed of relating the parties is infinite, and each party is individual. With these points in mind, let us formulate a mathematical expression of "relationship" through a thought experiment of light. I would like to quote from my previous paper on the derivation process of it.

Since light is a form of energy, it follows that light is also a "relationship". Therefore, we can assume that its speed of travel is theoretically infinite. Please take a look at Figure 1.

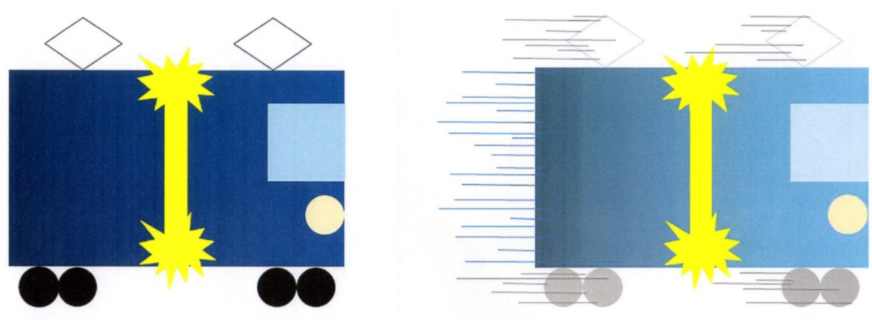

Figure 1.

If light is emitted from a light source installed in the ceiling of a train, it will reach the floor in zero seconds. And the vertical line will remain straight no matter how fast the car moves horizontally. I coined the term "light pillar formation" for this.

So, if the train in Figure 1 were to travel at $299792458\,[\mathrm{m.s}^{-1}]$, what would the light pillar look like? It would appear to look like Figure 2.

Figure 2.

I coined the term "optical band formation" for this. I would like to express that in a mathematical equation. The light pillar is the vertical length of the light band, so it can be expressed as l. This is because it is a straight line made of light that connects the ceiling to the floor at infinite speed. On the other hand, how should we describe the horizontal length? We can think of an optical band as horizontal line of N light pillars. Since it is the result of traveling at the speed of light for a certain period of time, it can be expressed as ct/N. If so, then the optical band can be described as the product of the vertical length (l) and the horizontal length (ct/N).

In this regard, a single light pillar is composed of two parties that sandwich it from both ends. So, the value of the number of parties (n) is always equal to twice the number of light pillars. Therefore, the relationship between the two can be expressed by the following equation.

$$2N = n. \tag{1}$$

With the above discussion, the left-hand side in the equation to describe the optical band could be determined. Now, how do we determine the right-hand side? At first glance, it may seem that it can be represented as a square with one side of equal length, i.e., l^2. But this is not the case. This is because optical band formation is a type of formation that is always in progress and the edges are never closed. I coined the term "attempted optical band" for it. Since one of the two ends of the optical band is missing, we cannot call the members of it "both parties". It can be said that it is in a "semi-ripe" state as an optical band. Hence, it can be expressed as $l^2/2$. Therefore, the equation describing the "attempted optical band (half optical band)" is given in the following form.

$$l \times \frac{ct}{N} = \frac{l^2}{2}[\mathrm{m}^2]. \tag{2}$$

Then, substituting equation (1) into equation (2) and continuing the transformation, the relational equation between c and n is determined by the following process.

$$\frac{l\,[\mathrm{m}]\,c\,[\mathrm{m.s}^{-1}]\,t\,[\mathrm{s}]}{\frac{n}{2}} = \frac{l^2[\mathrm{m}^2]}{2},$$

$$\frac{l\,[\mathrm{m}]\,c\,[\mathrm{m.s}^{-1}]\,t\,[\mathrm{s}]}{n} = l^2[\mathrm{m}^2],$$

$$c\,[\mathrm{m.s}^{-1}]\,t\,[\mathrm{s}] = nl\,[\mathrm{m}],$$

$$c\,[\mathrm{m.s}^{-1}]\,t\,[\mathrm{s}] = nv\,[\mathrm{m.s}^{-1}]\,t\,[\mathrm{s}],$$

$$c = nv\,[\mathrm{m.s}^{-1}]. \tag{3}$$

This explains why light passing through water is slower than that in a vacuum. This is because the number of n has increased with the addition of water as a party. The same is true for Fizeau's experiment. The speed of light c is essentially infinite. But it has been slowed down to about $3 \times 10^8\,[\mathrm{m.s}^{-1}]$. This is because the value of n increased due to the addition of extra interaction by intervening parties such as half-mirror, gear, and reflector. The concept of c is a result of the artificial finite nature of speed. At first glance, it may seem to represent photons in rapid motion, but this is not the case. Rather, it appears as a single "relationship" that originally connects the light source and its destination, as they connected at infinite speed. A particle of energy (photon) do not move from one end to the other. We should think of it as an energy (relationship) that originally connects both ends (between the two parties) in zero seconds. If we assume that photons travel through space with time at a finite speed, then the train experiment can be imagined in a completely different way (Figure 3).

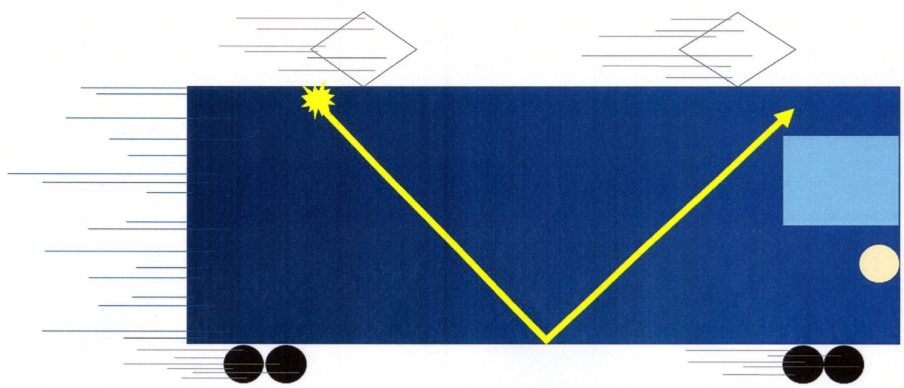

Figure 3.

Comparing Figure 1 and Figure 3, you can clearly see the difference between the proximity theory and the remote theory.

Now, if we take the remote theory, we will understand the following. The gravitational force between a star and a planet and the electromagnetic force between a proton and an electron are both "relationships" that connect the two parties. There is a difference in velocity, size, and mass between them. In other words, there is a difference in attributes, or individuality, that can be seen. Conversely, a space filled with "relationship" will always have objects of different individuality at both ends of the space. And these objects will influence each other to create a force.

In this way, we can see "force" as an "attraction between individuality". The degree of this is inversely proportional to the smaller the distance between the two individuality. This is because the closer the distance is, the more intense the "relationship" becomes. Therefore, if we set the distance between individuality as l, both individuality multiplied together as l^2, the force as F, and the proportionality coefficient as k_a, we have the following equation.

$$F = k_a \frac{i^2}{l} [\mathrm{N}]. \tag{4}$$

Here, we need to be clear about what "individuality" means. One thing that can be said is the following. As the number of members in a population increases, individuality decreases, and as the number of members in the population decreases, individuality increases. Also, both the planetary model and the atomic model are models in which both move in different ways. So, it is certain that the factor of speed has an effect on the amount of individuality. Therefore, intuitively, we can derive the following equation.

$$i = \frac{1}{nv} [\mathrm{s.m^{-1}}] \; (= [\mathrm{Gp}]). \tag{5}$$

As for units, following my introduction of a new quantity called i, I independently invented a unit called Gp (named "Galapagos"). Also, by substituting equation (3) into equation (5), we obtain the following form.

$$i = \frac{1}{c} [\mathrm{Gp}]. \tag{6}$$

Therefore, if we transform equation (4) using equation (6), we can complete the equation of electromagnetic force in the following form (the proportionality coefficient k_a has the assembly unit $[\mathrm{N.m^3.s^{-2}}]$ but the value is 1).

$$F = k_a \frac{1}{lc^2} \frac{[\text{N.m}^3.\text{s}^{-2}]}{[\text{m.m}^2.\text{s}^{-2}]} \ (= [\text{N}]). \tag{7}$$

This equation is a model of the electromagnetic force equation, but at the same time it corresponds to the strong force model. The reason is that the strong force is a "relationship" between objects that is established over a very small distance. In other words, the difference between electromagnetic force and strong force is determined only by the distance between objects. Therefore, the electromagnetic force and the strong force are the same force.

Now, let us move on to the discussion of gravity.

... I tried to derive my own theory of gravity through thought experiment (Figure 4).

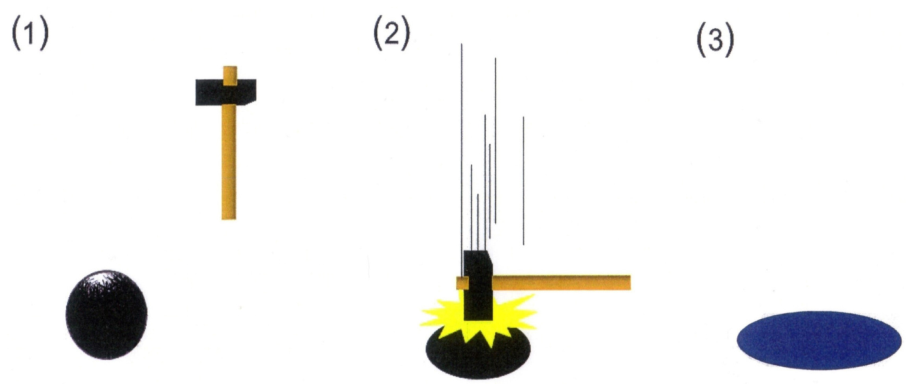

Figure 4.

First, consider the mass of the entire universe as m. Then, God applies a hammering force F to stretch it thinly into a plane consisting of a great number of parties (n). I coined the term "mass sheet formation" for this. If we set the radius of the whole universe as l, then the area of the universe can be expressed as πl^2. If we derive the model based on this point, the equation is given in the following form.

$$m \times F = \frac{\pi l^2}{n}.$$

If we introduce a proportionality coefficient with the assembly unit $[\mathrm{N.kg.m^{-2}}]$ (the quantity symbol is k_b and the value is 10^{-x}) and transform it, we obtain the following equation.

$$F = k_b \frac{\pi l^2}{nm} \frac{[\mathrm{N.kg.m^{-2}.m^2}]}{[\mathrm{kg}]} \ (= [\mathrm{N}]). \tag{8}$$

This is the new theory that correctly describes the relationship between gravity and mass (according to this equation, gravity is inversely proportional to mass). And in relational physics, gravity, electromagnetism and strong force are all the same in that they are all "relationship". Therefore, if we express this in terms of equations, the following form is completed.

$$k_a \frac{1}{lc^2} = k_b \frac{\pi l^2}{nm}. \tag{9}$$

This is the formula for the Theory of Everything, which can deal with all forces in a unified manner.

... Furthermore, by transforming the equation (9), the mass, volume, ... of an object can be calculated. Let us derive them in order.

$$\frac{k_a\,[\mathrm{N.m^3.s^{-2}}]}{l\,[\mathrm{m}]\,c^2[\mathrm{m^2.s^{-2}}]} = \frac{k_b\,[\mathrm{N.kg.m^{-2}}]\,\pi l^2[\mathrm{m^2}]}{nm\,[\mathrm{kg}]},$$

$$\frac{nm\,[\mathrm{kg}]\,k_a\,[\mathrm{N.m^3.s^{-2}}]}{l\,[\mathrm{m}]\,c^2[\mathrm{m^2.s^{-2}}]} = k_b\,[\mathrm{N.kg.m^{-2}}]\,\pi l^2[\mathrm{m^2}],$$

$$\frac{nm\,[\mathrm{kg}]\,k_a\,[\mathrm{N.m^3.s^{-2}}]}{\pi l^2[\mathrm{m^2}]\,k_b\,[\mathrm{N.kg.m^{-2}}]} = l\,[\mathrm{m}]\,c^2[\mathrm{m^2.s^{-2}}],$$

$$\frac{k_a\,[\mathrm{N.m^3.s^{-2}}]}{k_b\,[\mathrm{N.kg.m^{-2}}]} \times nm\,[\mathrm{kg}] = \pi l^3[\mathrm{m^3}]\,c^2[\mathrm{m^2.s^{-2}}].$$

Here, the relationship between k_a and k_b is expressed as a new proportionality coefficient J (called "Junichi Parameter" after me). Along with this, I will also introduce a new unit Skr (named "Sakura" after a flower that represents Japan). To summarize these relationships, the quantities are given in the following form.

$$k_a = 1[\mathrm{N.m^3.s^{-2}}],$$

$$k_b = 10^{-x}[\mathrm{N.kg.m^2}],$$

$$\frac{k_a}{k_b} = J = 10^x\,[\mathrm{Skr}]\;(= [\mathrm{m^5.kg^{-1}.s^{-2}}]).$$

Now, let us continue with the derivation. Since $k_a / k_b = J$, the equation is formed by the following process.

$$J\,[\mathrm{m^5.kg^{-1}.s^{-2}}]\,nm\,[\mathrm{kg}] = \pi l^3[\mathrm{m^3}]\,c^2[\mathrm{m^2.s^{-2}}],$$

$$m = \frac{\pi l^3 c^2}{Jn}\,\frac{[\mathrm{m^3.m^2.s^{-2}}]}{[\mathrm{m^5.kg^{-1}.s^{-2}}]}\,(= [\mathrm{kg}]). \tag{10}$$

This is the formula for mass. If we transform it, we can get an expression for volume. The form is as follows (spherical object).

$$\frac{4}{3}\pi l^3 = \frac{4Jnm}{3c^2}\,\frac{[\mathrm{m^5.kg^{-1}.s^{-2}.kg}]}{[\mathrm{m^2.s^{-2}}]}\,(= [\mathrm{m^3}]). \tag{11}$$

... I discovered the law expressed by the following equation.

$$Jn = N_{BR} \times 10^{x+y}[\mathrm{Skr}], \tag{12}$$

$$x + y = 13. \tag{13}$$

Jn is the product of the proportionality coefficient J and the number of parties n. N_{BR} is just a number without unit, x is the exponential part of the quantity in J expressed to the power of 10. And y is the exponential part of the quantity in n expressed to the power of 10. Skr is a unit that indicates the quantity of Jn. The important point here is that the sum of x and y is always 13.

(Reference: J. Hashimoto, Theory of Everything, Journal of Innovations in Energy Science, 2, 7-14, 2022)

As described above, I have succeeded in deriving various basic formulas describing "relationship". Since the basic element that supports "relationship" is "individuality", the application of this principle will reveal the mechanisms that constitute various physical and chemical laws. The purpose of my research this time is to clarify why such laws can be laws, using the concept of "individuality" as a starting point.

2. Methodology

In this section, I take subjects such as the law of falling bodies, redshifts, and planetary motion in the solar system as examples and establish universal norms that can be applied to all of them. Then I will use those three to make specific applications. Now, let us move on to practice.

All physical laws in the history of science allow for the decomposition of the constant part into two elements in an equation, as long as it is consistent with the truth. One of them is called "degree of stability", a term I coined, and is described as $1/i$. This is because if we set the reciprocal of "individuality" i, we could express the degree of "homogenization" by itself. In response, the constant portion can be expressed as the product of the "degree of stability" and its coefficient (parameter for adjustment). The following process gives the equation.

$$Const = \frac{1}{i} \times p_m, \tag{14}$$

$$Const = nvp_m,$$

$$\frac{Const}{vp_m} = n.$$

$Const$ represents the "constant portion". $1/i$ represents "degree of stability". p_m denotes "parameter". v represents "velocity". And n represents the "number of parties". The solution calculated from such a relational equation, which is the basic from here, is always $n = 1$. All stability in this world is always based on such an order where the number of parties is 1. I coined the term "Junichi Hashimoto's law" (law of invariance of the number of parties) for such a property. The reason why the constant part in an important law of physics can be constant is that it contains a "degree of stability". And the reason why the behavior of an object described by such a relational expression is stable is because it is an order with only 1 number of parties as a whole.

Let us examine it in detail, first through Galileo's accomplishments. The law of falling bodies states that the distance traveled and speed of a falling object is proportional to the acceleration of gravity [2]. It is expressed by the following equation.

$$v = gt\,[\mathrm{m.s^{-1}}],$$

$$d = \frac{1}{2}gt^2[\mathrm{m}].$$

The "constant part" common to the above two equations is g. Let us substitute it into equation (14) and adjust the coefficients so that both sides are balanced. The equation is given by the following process.

$$g\,[\mathrm{m.s^{-1}.y^{-1}}] = \frac{1}{i}\,[\mathrm{m.s^{-1}}] \times \frac{1}{t}\,[\mathrm{y^{-1}}], \tag{15}$$

$$g\,[\mathrm{m.s^{-1}.y^{-1}}] = \frac{1}{it\,[\mathrm{s.m^{-1}.y}]},$$

$$i\,[\mathrm{s.m^{-1}}] = \frac{1}{gt\,[\mathrm{m.s^{-1}}.y^{-1}.\mathrm{y}]},$$

$$\frac{1}{nv\,[\mathrm{m.s^{-1}}]} = \frac{1}{gt\,[\mathrm{m.s^{-1}}]},$$

$$nv\,[\mathrm{m.s^{-1}}] = gt\,[\mathrm{m.s^{-1}}],$$

$$n = \frac{gt}{v}. \tag{16}$$

This is the relational formula for the number of parties that make up the law of the falling body. To derive that value, I would like to determine my own value for g. In relational physics, $1/i$ can be converted to c (equation (6)). The following form is given by transforming equation (15) accordingly.

$$g\,[\mathrm{m.s^{-1}.y^{-1}}] = \frac{c\,[\mathrm{m.s^{-1}}]}{t[\mathrm{y}]}.$$

What this equation means is that if an object continues to fall, after one year its speed will reach the speed of light. Substituting each value into the right-hand side gives the value of gravitational acceleration in the following process.

$$g\,[\mathrm{m.s^{-1}}.y^{-1}] = \frac{299792458\,[\mathrm{m.s^{-1}}]}{1\,[\mathrm{y}]}$$

$$= \frac{299792458\,[\mathrm{m.s^{-1}}]}{31557600\,[\mathrm{s}]}$$

$$= 9.4998497\,[\mathrm{m.s^{-2}}].$$

Now, let us find the value of the number of parties. The “velocity change per year" is represented by $299792458\,[\mathrm{m.s^{-1}.y^{-1}}]$, and the "fall velocity after one year" is represented by $299792458\,[\mathrm{m.s^{-1}}]$. Let us substitute them into equation (16). The following process is used to obtain the value of the number of parties.

$$n = \frac{299792458\,[\mathrm{m.s^{-1}}.y^{-1}]\times 1\,[\mathrm{y}]}{299792458\,[\mathrm{m.s^{-1}}]}$$

$$= 1.$$

As described above, the number of parties required to form the law of the falling body was found to be 1. This implies that the falling body and the earth are one order body. The stability that the same gravitational acceleration applies to all falling bodies on the earth comes from this.

Let us now examine whether the law of invariance of the number of parties applies to the subject of light reaching the earth from distant galaxies. Typically, it is the Lyman alpha rays emitted from hydrogen atoms that are used for observation, connecting the distant universe to telescopes on Earth [3]. This is ultraviolet light with a wavelength of $1.216\times 10^{-7}[\mathrm{m}]$, but measuring it on Earth produces a phenomenon of wavelength stretching (redshift). According to Subaru Telescope experiment that examined the light brought by galaxy SXDF-NB1006-2, the wavelength was measured to be $9.99\times 10^{-7}[\mathrm{m}]$ [4].

So why does such wavelength elongation occur? Let us think about the mechanism. The dominant theory on this point is that the universe itself is accelerating and expanding, which in turn causes wavelengths to expand. However, no such phenomena are seen when light is examined in nearby galaxies [5]. This cannot be explained by the mechanism of cosmic expansion. Therefore, it is necessary to formulate a new theory that can explain both light from distant galaxies and light from nearby galaxies without contradiction.

In doing so, I will also make my own selection of astronomical objects to be used as a guide. One is the sun and the other is a quasar. Based on the radiant energy of the light between them and the earth, the distance to the celestial body is calculated, and then the wavelength of the light is investigated. Through such work, I would like to elucidate the cause of the redshift.

Now, let us move on to the discussion. When light is interpreted as a wave, the equation that deal with its energy has already been established by our predecessors [6]. It is described in the following form.

$$E = \frac{hc}{\lambda}[\mathrm{J}]. \tag{17}$$

E stands for "energy of light", h stands for "Planck's constant", c stands for "speed of light", and λ stands for "wavelength". Using this formula, an energy value can be calculated for light $(9.99 \times 10^{-7}[\mathrm{m}])$ derived from SXDF-NB1006-2. $1.9884132 \times 10^{-19}[\mathrm{J}]$.

At the same time, let us transform the basic equation (7) for the electromagnetic force mentioned above into an equation that can deal with the energy of light. The following calculation process is given.

$$F = k_a \frac{1}{lc^2}[\mathrm{N}],$$

$$E = k_a \frac{1}{c^2}[\mathrm{J}] \tag{18}$$

$$= \frac{1[\mathrm{N.m^3.s^{-2}}] \times 1}{c^2[\mathrm{m^2.s^{-2}}]}$$

$$= 1.11265 \times 10^{-17}[\mathrm{J}].$$

This is the original light energy value (corresponding to the calculated value at $n = 1$).

If so, we can find the value of the number of parties n needed to form the light energy from the distant galaxy by finding the ratio of the value obtained in equation (17) to that obtained in equation (18).

$$n = \frac{E_{18}}{E_{17}} = \frac{1.11265 \times 10^{-17}[\mathrm{J}]}{1.9884132 \times 10^{-19}[\mathrm{J}]} = 55.9567.$$

This is the number of parties for the light from SXDF-NB1006-2. This is an increase of about 56 times. The number of parties, which was originally sufficient at 1 has increased to 56. I will explain the meaning of this in detail later.

Now, let us express here the relational equations for light energy, wavelength, and number of parties. It is given in the following form.

$$n \times E_{17} = E_{18},$$

$$n \times \left(\frac{hc}{\lambda}\right) = E,$$

$$\lambda = \frac{nhc}{E}\,[\mathrm{m}]. \tag{19}$$

On that basis, let us formulate the equations that deal with the brightness, wavelength, and number of parties of a celestial body.

First, let us transform equation (8) into an equation that can handle energy, and then substitute it into equation (19). The process is as follows.

$$\lambda\,[\mathrm{m}] = \frac{nh\,[\mathrm{N.m.s}]\,c\,[\mathrm{m.s^{-1}}]}{\left(k_b\,[\mathrm{N.kg.m^{-2}}] \times \dfrac{\pi l^3 [\mathrm{m^3}]}{nm\,[\mathrm{kg}]}\right)},$$

$$\lambda\,[\mathrm{m}] = \frac{n^2 h\,[\mathrm{N.m.s}]\,c\,[\mathrm{m.s^{-1}}]m\,[\mathrm{kg}]}{k_b\,[\mathrm{N.kg.m^{-2}}]\pi l^3 [\mathrm{m^3}]},$$

$$l^3 = \frac{n^2hcm}{\lambda k_b \pi} \frac{[\mathrm{N.m.s.m.s^{-1}.kg}]}{[\mathrm{m.N.kg.m^{-2}}]} \ (= [\mathrm{m}^3]). \tag{20}$$

Next, let us transform equation (8) into an equation that deals with the luminous intensity (brightness) of light. The following form is given.

$$P = k_b \frac{\pi l^3}{nmt} [\mathrm{W}].$$

Let us further transform this into the following equation.

$$l^3 = \frac{Pnmt}{k_b \pi} \frac{[\mathrm{N.m.s^{-1}.kg.s}]}{[\mathrm{N.kg.m^{-2}}]} \ (= [\mathrm{m}^3]). \tag{21}$$

Finally, let us substitute equation (20) into equation (21). The following process completes the equation.

$$\frac{n^2h\,[\mathrm{N.m.s}]\,c\,[\mathrm{m.s^{-1}}]m\,[\mathrm{kg}]}{\lambda[\mathrm{m}]\,k_b[\mathrm{N.kg.m^{-2}}]\pi} = \frac{P[\mathrm{N.m.s^{-1}}]\,nm\,[\mathrm{kg}]\,t\,[\mathrm{s}]}{k_b[\mathrm{N.kg.m^{-2}}]\pi},$$

$$\frac{k_b[\mathrm{N.kg.m^{-2}}]\,\pi n^2h\,[\mathrm{N.m.s}]\,c\,[\mathrm{m.s^{-1}}]m\,[\mathrm{kg}]}{\lambda\,[\mathrm{m}]\,k_b[\mathrm{N.kg.m^{-2}}]} = P\,[\mathrm{N.m.s^{-1}}]\,nm\,[\mathrm{kg}]\,t\,[\mathrm{s}],$$

$$n^2h\,[\mathrm{N.m.s}]\,c\,[\mathrm{m.s^{-1}}]m\,[\mathrm{kg}] = P\,[\mathrm{N.m.s^{-1}}]\,nm\,[\mathrm{kg}]\,t\,[\mathrm{s}]\,\lambda\,[\mathrm{m}],$$

$$\lambda = \frac{n^2hcm}{Pnmt} \frac{[\mathrm{N.m.s.m.s^{-1}.kg}]}{[\mathrm{N.m.s^{-1}.kg.s}]},$$

$$\lambda = \frac{nhc}{Pt} [\mathrm{m}]. \tag{22}$$

This is the relational equation that can describe the wavelength, brightness (radiant energy), and number of parties of light. Using this equation, the original wavelength of light can be determined.

So, let us actually test that with some celestial data.

Before that, we must calculate the distance from the earth to a distant celestial body (in this case, the subject is the brightest quasar in the universe). The way it works is that the distance from the earth to the quasar is determined from the ratio of the brightness of the quasar to that of the sun, based on the distance from the earth to the sun. The brightness of the most luminous quasar in the universe has already been measured. $P = 3.827 \times 10^{26} \times 3.5 \times 10^{14}$[W] [7]. The brightness of the sun and the distance from the earth to the sun are also already known. $P = 3.827 \times 10^{26}$[W] [8]. $l = 149597828677$ [m] [9]. Now let us calculate the distance to the quasar. The following process is used to give the value.

$$(3.827 \times 10^{26} \times 3.5 \times 10^{14}) : (3.827 \times 10^{26}) = l : 149597828677,$$

$$(3.827 \times 10^{26})\, l = 149597828677 \times (3.827 \times 10^{26} \times 3.5 \times 10^{14}),$$

$$l = \frac{149597828677 \times (3.827 \times 10^{26} \times 3.5 \times 10^{14})}{(3.827 \times 10^{26})},$$

$$l = 5.235924 \times 10^{25} [\mathrm{m}]$$

$$= 5.534376 \times 10^{9} [\mathrm{ly}].$$

Let us continue and find out about the rest of the data needed for the calculations. To enumerate, the following data are the most likely to be used.

The mass of the ideal object with the radius of the distance between the sun and earth, the arrival time of light between the sun and earth, the mass of the ideal object with the radius of distance between the quasar and earth, and the arrival time of light between the quasar and earth. Let us calculate them in order.

First, let us calculate the mass of an ideal celestial body composed of the sun and the earth using equation (10). The value is given by the following process.

$$m_{\text{sun-earth}} = \frac{\pi l^3 c^2}{Jn}$$

$$= \frac{3.14 \times 149597828677^3 [\text{m}^3] \times 299792458^2 [\text{m}^2.\text{s}^{-2}]}{10^{13} [\text{m}^5.\text{kg}^{-1}\text{s}^{-2}]}$$

$$= 9.4481531 \times 10^{37} [\text{kg}].$$

Next, I would like to use a variant of equation (21) for the arrival time of light between the sun and earth. The equation is as follows.

$$t = \frac{l^3 k_b \pi}{Pnm} [\text{s}]. \tag{23}$$

Now, let us calculate the arrival time based on that. The value is given by the following process (for the value of k_b, it is always estimated as 10^{-13} if it is not unified with formula (7) and treated as formula (8) alone).

$$t_{\text{sun-earth}} = \frac{l^3 k_b \pi}{Pnm}$$

$$= \frac{149597828677^3 [\text{m}^3] \times 10^{-13} [\text{N.kg.m}^{-2}] \times 3.14}{(3.827 \times 10^{26}) [\text{N.m.s}^{-1}] \times 1 \times (9.4481531 \times 10^{37}) [\text{kg}]}$$

$$= 2.907369 \times 10^{-44} [\text{s}].$$

Then, let us calculate the mass of an ideal celestial body composed of a quasar and the earth using equation (10). The value is given by the following process.

$$m_{\text{quasar-earth}} = \frac{\pi l^3 c^2}{Jn}$$

$$= \frac{3.14 \times (5.235924 \times 10^{25})^3 [\text{m}^3] \times 299792458^2 [\text{m}^2.\text{s}^{-2}]}{10^{13} [\text{m}^5.\text{kg}^{-1}.\text{s}^{-2}]}$$

$$= 4.051 \times 10^{81} [\text{kg}].$$

Then, let us calculate the arrival time of light between the quasar and the earth using formula (21). The value is given by the following process.

$$t_{\text{quasar-earth}} = \frac{l^3 k_b \pi}{Pnm}$$

$$= \frac{(5.235924 \times 10^{25})^3 [\mathrm{m}^3] \times 10^{-13} [\mathrm{N.kg.m}^{-2}] \times 3.14}{(3.827 \times 10^{26} \times 3.5 \times 10^{14}) [\mathrm{N.m.s}^{-1}] \times 1 \times (4.051 \times 10^{81}) [\mathrm{kg}]}$$

$$= 8.3065542 \times 10^{-59} [\mathrm{s}].$$

Now, that we have the necessary data for our calculations. Substituting those values into equation (22) reveals the wavelength of light from the source. Let us calculate the wavelength of light between the sun and the earth, then the wavelength of light between the quasar and the earth, in that order. The following process is used to give each value (for the number of parties, set $n = 1$).

$$\lambda_{\text{sun-earth}} = \frac{nhc}{Pt}$$

$$= \frac{1 \times (6.626 \times 10^{-34}) [\mathrm{N.m.s}] \times 299792458 [\mathrm{m.s}^{-1}]}{(3.827 \times 10^{26}) [\mathrm{N.m.s}^{-1}] \times (2.907369 \times 10^{-44}) [\mathrm{s}]}$$

$$= 1.78531 \times 10^{-8} [\mathrm{m}],$$

$$\lambda_{\text{quasar-earth}} = \frac{nhc}{Pt}$$

$$= \frac{1 \times (6.626 \times 10^{-34}) [\mathrm{N.m.s}] \times 299792458 [\mathrm{m.s}^{-1}]}{(3.827 \times 10^{26} \times 3.5 \times 10^{14}) [\mathrm{N.m.s}^{-1}] \times (8.3065542 \times 10^{-59}) [\mathrm{s}]}$$

$$= 1.78531 \times 10^{-8} [\mathrm{m}].$$

As described above, the values for both were exactly the same. It was found that the wavelength of the light is always constant, even if the brightness and arrival time vary. This value appears in the following easily identifiable form when the energy value calculated in equation (18) is substituted into equation (19) and then rearranged into an equation bracketed by the number of parties (n).

$$\lambda = \left(\frac{6.626 \times 10^{-34} \times 299792458}{1.11265 \times 10^{-17}}\right) n$$

$$= (1.78531 \times 10^{-8}) n\,[\mathrm{m}]. \tag{24}$$

Since the number of parties is 1 in the case of the aforementioned object, it is obvious that the wavelength value is consistent with that of the original light by substituting it into equation (24).

In light of the above, let us see if Junichi Hashimoto's law applies to the light between galaxies and celestial bodies and the earth. This principle states that if the "constant part" of the equation consists of the product of the "degree of stability" and its "adjustment parameter" and the number of parties is $1,$ then the relationship is invariant (equation (14)). Here, in the discussion of light connecting space, the "constant part" corresponds to $\lambda.$ If we apply this to the equation (14) and adjust the parameter, the following calculation process is created.

$$Const = \frac{1}{i} \times p_m,$$

$$\lambda\,[\mathrm{m}] = \frac{1}{i}\,[\mathrm{m.s^{-1}}] \times \frac{nh\,[\mathrm{N.m.s}]}{P\,[\mathrm{N.m.s^{-1}}]\,t\,[\mathrm{s}]},$$

$$P\,[\mathrm{N.m.s^{-1}}]\,t\,[\mathrm{s}]\,\lambda\,[\mathrm{m}] = \frac{1}{i}\,[\mathrm{m.s^{-1}}]\,nh\,[\mathrm{N.m.s}],$$

$$n = \frac{P\,[\mathrm{N.m.s^{-1}}]\,t\,[\mathrm{s}]\,\lambda\,[\mathrm{m}]}{\left(\frac{1}{i}\right)[\mathrm{m.s^{-1}}]\,h\,[\mathrm{N.m.s}]},$$

$$n = \frac{Pt\lambda}{\left(\frac{1}{i}\right)h},$$

$$n_{\text{sun-earth}} = \frac{\begin{pmatrix}(3.827 \times 10^{26})\,[\text{N.m.s}^{-1}] \times (2.907369 \times 10^{-44})\,[\text{s}] \\ \times (1.78531 \times 10^{-8})\,[\text{m}]\end{pmatrix}}{299792458\,[\text{m.s}^{-1}] \times (6.626 \times 10^{-34})\,[\text{N.m.s}]}$$

$$= 1.0000003,$$

$$n_{\text{qusar-earth}} = \frac{\begin{pmatrix}(3.827 \times 10^{26} \times 3.5 \times 10^{14})\,[\text{N.m.s}^{-1}] \\ \times (8.3065542 \times 10^{-59})\,[\text{s}] \times (1.78531 \times 10^{-8})\,[\text{m}]\end{pmatrix}}{299792458\,[\text{m.s}^{-1}] \times (6.626 \times 10^{-34})\,[\text{N.m.s}]}$$

$$= 0.9997447.$$

As described above, Junichi Hashimoto's law holds for light between a galaxy or celestial body and the earth. Why is it that the light between a quasar and the earth and between the sun and the earth are of the same wavelength? It is because the sun and the earth are of one order, and the quasar and the earth are of one order. The constancy of the wavelength of light comes from that.

Incidentally, considering the extremely short wavelengths of the radioactivity emitted from radioactive materials, we know that it is produced from $n \leqq 1$ order. I will discuss this in detail in another paper.

Now, next, I would like to examine whether Junichi Hashimoto's law applies to the operation of the planets in the solar system. Are there any common regularities in the movements of all the planets orbiting the sun? If so, we can apply to it to equation (14).

In this regard, at first glance, Kepler's law would seem to fall into that category. However, I have tried to reconcile with Junichi Hashimoto's law in that direction and it did not work. Therefore, I formulated my own equation that can describe the orbits of each planet. The factor used for the standard is the speed of light (c). For the orbits of the planets, regular circles were set for convenience $(2\pi l)$. Then, assuming that each planet orbits its circular orbit at the speed of light for a certain time n_c times, the following equation is given.

$$ct = n_c 2\pi l. \tag{25}$$

Applying Junichi Hashimoto's law (equation (14)) to this, the following process gives an expression for the number of parties that make up the planet-sun relationship.

$$\frac{1}{i}\,[\mathrm{m.s^{-1}}]\,t\,[\mathrm{s}] = n_c 2\pi l\,[\mathrm{m}],$$

$$nv\,[\mathrm{m.s^{-1}}]\,t\,[\mathrm{s}] = n_c 2\pi l\,[\mathrm{m}],$$

$$n = \frac{n_c 2\pi l\,[\mathrm{m}]}{vt\,[\mathrm{m.s^{-1}.s}]},$$

$$n = n_c \frac{2\pi l}{vt}. \tag{26}$$

This is the relational equation that can describe the orbits of each planet in the solar system and the number of its parties. Now, let us move on to the process of fitting specific data. The data used are Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune [10].

Now, let us assume that each planet orbits only once, at each speed, with each period, in each orbit. Then, let us calculate the value of the number of parties for that case using equation (26). In order, the results are as follows.

$$n_{\text{mercury-sun}} = 1 \times \frac{2 \times 3.14 \times 57909319480\,[\mathrm{m}]}{47360\,[\mathrm{m.s^{-1}}] \times 7600648\,[\mathrm{s}]} = 1.0102894,$$

$$n_{\text{venus-sun}} = 1 \times \frac{2 \times 3.14 \times 108204109482\,[\text{m}]}{35020\,[\text{m.s}^{-1}] \times 19414236\,[\text{s}]} = 0.9946532,$$

$$n_{\text{earth-sun}} = 1 \times \frac{2 \times 3.14 \times 149597828677\,[\text{m}]}{29780\,[\text{m.s}^{-1}] \times 31558231\,[\text{s}]} = 0.9996491,$$

$$n_{\text{mars-sun}} = 1 \times \frac{2 \times 3.14 \times 227942211556\,[\text{m}]}{24080\,[\text{m.s}^{-1}] \times 59355112\,[\text{s}]} = 1.0015434,$$

$$n_{\text{jupiter-sun}} = 1 \times \frac{2 \times 3.14 \times 778297663476\,[\text{m}]}{13060\,[\text{m.s}^{-1}] \times 374336251\,[\text{s}]} = 0.9997698,$$

$$n_{\text{saturn-sun}} = 1 \times \frac{2 \times 3.14 \times 1429392293229\,[\text{m}]}{9650\,[\text{m.s}^{-1}] \times 929598535\,[\text{s}]} = 1.0006641,$$

$$n_{\text{uranus-sun}} = 1 \times \frac{2 \times 3.14 \times 2875030910651\,[\text{m}]}{6810\,[\text{m.s}^{-1}] \times 2651485331\,[\text{s}]} = 0.999213,$$

$$n_{\text{neptune-sun}} = 1 \times \frac{2 \times 3.14 \times 4504450460604\,[\text{m}]}{5440\,[\text{m.s}^{-1}] \times 5199748908\,[\text{s}]} = 1.0000465.$$

As described above, the number of parties constituting the relationship between the sun and each planet was found to be 1 for any of the planets. This tells us that the sun and the planets are one order. This is where the stability of the solar system comes from.

3. Discussion

As mentioned above, the evaluation of their behavior as one as a whole, even though at first glance it appears as if more than one party is involved, makes their physical laws embody stable laws. It could be applied to all solar system planets. If so, that would seem to be true for the atomic model as well. Specifically, I would like to take the hydrogen atom [11] as my subject and demonstrate whether or not Junichi Hashimoto's law applies to it. The data required for the calculation are the number of parties, radius, circumference, rotation speed, and rotation period as spinning atoms. Let us discuss them in turn below. As for the number of parties involved in the rotation, we can consider one microscopic particle, a hydrogen atom, to be 1. For the radius, the relational physics position defines $l = 3.90206 \times 10^{-11}$[m]. For the circumference, the calculation determines that $2\pi l = 2.4504937 \times 10^{-10}$[m]. For the rotation velocity, $v = 299792458\,[\mathrm{m.s^{-1}}]$ can be obtained from equation (3). The rotation period is expressed as the circumference length divided by the rotation speed, which can be determined as $t = 8.1739671 \times 10^{-19}$[s]. Now, let us substitute each value into formula (26) and calculate. What exactly is revealed by this? It is the number of parties at the orbital level, where an electron orbits around a proton. In other words, the idea here is that one revolution of an electron in its orbit and one rotation of a hydrogen atom are the same phenomenon. It is, so to speak, the "equivalence of orbital rotation and spinning". It is represented by the following process.

$$n_{\text{hydrogen}} = 1 \times \frac{2.4504937 \times 10^{-10}\,[\mathrm{m}]}{299792458\,[\mathrm{m.s^{-1}}] \times (8.1739671 \times 10^{-19})\,[\mathrm{s}]}$$

$$= 0.9999999.$$

As mentioned above, the number of parties for the orbital rotation was found to be 1. This implies that the proton and electron are one order. Metaphorically speaking, it is like a sunspot on the surface of the sun that makes one rotation with the sun's rotation. Sunspots [12] can be regarded as orbiting the sun's core while being located at a certain distance from the center of the sun. And sunspots and the sun are one and the same. Therefore, sunspot orbit and sun rotation are synonymous. Similarly, the orbital motion of the electron and the rotation of the hydrogen atom are identical in behavior, which means that they are one and the same and are one order. The stability of the atomic structure is derived from it.

If this is the case, there is no need to address the problems pointed out by classical electromagnetism or the solutions to them by quantum mechanics. If we take the classical view, we conclude that when a charged particle orbits (accelerated motion) in an electric field, it loses energy due to synchrotron radiation, gradually losing momentum and eventually colliding with a nucleon and being crushed [13].

However, if we rethink that the electron is not orbiting but only the hydrogen atom is spinning on its own axis, there is no problem at all. That is similar to the fact that there is no problem with a sunspot making a full revolution around the equator of the sun.

It is simply one sphere spinning on its own axis.

As mentioned above, if the number of parties is 1, the behavior of an object is always stable (Junichi Hashimoto's law). It is the same with atoms, the solar system, and the universe.

On the other hand, observations of distant galaxies with Earth-based telescopes measure a diminishing amount of light energy. That is the redshift, but as mentioned earlier, it is not caused by the accelerated expansion of the universe.

It is precisely the increase in the number of parties that causes the redshift.

To verify this, let us calculate the value of the number of parties composed of the galaxy SXDF-NB1006-2 and the earth by substituting it into equation (24). As mentioned earlier, the value is $n = 55.9567$. The following process reveals the apparent wavelength values.

$$\lambda = (1.78531 \times 10^{-8}) \times 55.9567$$

$$= 9.99 \times 10^{-7}[\mathrm{m}].$$

Thus, it is found to be the same value as that observed by the Subaru

Telescope. It is obvious that the wavelength of light has been spanned by the increase in the number of parties, which should originally have been 1 to 56.

So why did the number of parties increase?

This is due to the act of human observation itself.

The increase in the number of parties (n = 6.81) has already occurred at the laboratory level ($\lambda = 1.216 \times 10^{-7}$[m]). The number of parties involved will increase, especially if it is a giant astronomical telescope. The devise for catching and measuring light coming from space consists of many parts. Observations are made using a combination of numerous sophisticated techniques and machines, including many lenses, many reflectors, filters, viewfinders, cameras, and digital equipment. It should increase or decrease the number of devises or instruments as options for each target object. In other words, the act of observation itself is a factor in the increase in the number of parties.

Therefore, in order to understand the true nature of galaxies and astronomical objects in the distant universe, it is important to correct observational data with such an increase in the number of parties in mind.

If we look at redshift from such a perspective, we can see that it is not caused by the accelerated expansion of universe.

The cosmic expansion theory claims that it is caused by an unknown dark energy [14] that leads to accelerated expansion.

However, if we stand relational physics, the number of parties in the universe must be drastically reduced instantly in order to create new energy that large.

In the present study, it was found that the value of n did not decrease drastically, but on the contrary, increased 56-fold.

If we think in terms of the concept of number of parties, neither cosmic expansion nor dark energy is a valid argument for redshift.

Our universe neither expands nor contracts, has no beginning and no end.

4. Conclusion

The laws of falling bodies, the laws governing the operation of each planet in the solar system, the laws governing the stability of atomic structure, and the laws governing the constancy of light energy in the universe all emerge from a single order in the number of parties, the results of this study confirm.

I have settled the question of why such laws can be laws by creating Junichi Hashimoto's law, a "law of laws", so to speak.

The birth of such a universal law should lead to major changes not only in physics, but also in chemistry, biology, and all other fields in the future.

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