

Verification method of causes which reduce light velocity inside a transparent glass⁽²⁰⁾

- The outer space is composed of a medium of light waves. -

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Abstract

The propagation velocity of light waves in a transparent glass(dielectric) is reduced because the electric field of proton and the wave energy of light waves use a common medium. In the process wherein the medium in space is used as the medium of an electric field, the medium in space is controlled(restriction) by the electric field. Thus, when the medium in space which is controlled by the electric field is again used as a medium of light waves, the propagation velocity of light waves is reduced. That is, the light velocity and the electric field has a functional connection. This effect can be verified by an actual experiment.

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※ **For your reference** - This paper denies some arguments of quantum mechanics, and suggests a new alternative. It is hoped the quantum mechanics of the abolition target will be excluded from the judgment standard.

I . Introduction

The propagation velocity of light waves is reduced inside a transparent glass(dielectric). In addition, the light wave which gets out of the area of the transparent glass recovers its original light velocity. Therefore, it can be observed that the propagation velocity of light waves is reduced by the role of the transparent glass. That is, the existence of the transparent glass and the reduction in the light velocity must have a causal connection.

Electrons freely absorb and release light electric current of light waves. Therefore, the volume of the light electric current which is released by electrons must be equal or smaller than the diameter of electrons. If the volume is greater than the diameter of electrons, it is impossible for the small diameter of electrons to freely release or absorb(accommodate) a large volume of light electric current.^[17] <<http://batangs9.com/E-17.pdf>>

The diameters of protons and electrons are very small inside a transparent glass, and the distance between protons and electrons are very far. Therefore, even if a small volume of light waves(light electric current) enters inside a transparent glass, it is hardly possible for protons and electrons to interfere or resist the progress of light waves.

Protons and electrons in a transparent glass produce an electric field. There are only two things that exist in a transparent glass - elementary particles(protons and electrons) and electric fields. If elementary particles do not interrupt(interfere) with the progress of the light waves, it can be assumed

that the characteristics of an electric field have an influence on the changes in the propagation velocity of light waves.^[19] <<http://batangs9.com/E-19.pdf>>

In the body of the paper, I will explain the reason how the electric field in a transparent glass and the reduction in light velocity are causally connected. Also, I will provide a method for verifying my claim that the electric field and light velocity are causally connected to each other through an actual experiment.

II. Body

1. Causal connectivity between electric field and light velocity

As described in the previously introduced paper, “**Structure and Functional Characteristics of Electromagnetic Waves**”, the form of light wave consists of a combination of light electric current and light electric. Also, the wave energy of light waves propagates at the speed of light. In the propagation process of light waves(light electric current), the existence of a medium is necessarily required, and the medium of light waves must be distributed in all areas in space.^[17] <<http://batangs9.com/E-17.pdf>>

In classical physics, the medium of light waves is called “**ether**”, but in this paper, it will be called “**batangs**” for convenience. The reason why ether is differentiated with batangs in here is that the two components exist under totally different conditions, and have completely different functions. Batangs in space constitute a unique organization system(space system), and

organization system of batangs is used as the medium of light waves.^[6]

<<http://batangs9.com/E-6.pdf>>

The wave energy of light waves is propagated at the speed of light by using batangs in space as the medium. In here, light waves independently have the volume of batangs, and the path of the light waves is displaced by the elasticity of light velocity as much as the volume of the light waves(light electric current). The propagation velocity of light waves reflects the elasticity of batangs.

On the other hand, all types of elementary particles permanently maintain their “autonomous vibration” of expansion and contraction as described in the previously introduced paper, “The Structure and Active Function of Elementary Particles”. Also, the vibrational energy of elementary particles acts at the speed of light. As such, elementary particles(electrons) which maintain their autonomous vibration of light velocity can absorb light waves at a stationary velocity or instantly release them.^[7]

<<http://batangs9.com/E-7.pdf>>

Protons and electrons of autonomous vibration individually and infinitely produce electric fields, and the electric field has vibrational energy. In here, the working range of the vibrational energy means electric field. The vibrational energy of this electric field is composed of the advancing wave and the retrograding wave of the longitudinal wave model. Also, the advancing and retrograding waves of vibrational energy are maintained by

using the batangs in space as a medium.

The vibrational energy of an electric field and the wave energy of light waves(light electric current) are classified as the same kinds of energy, and have a common feature of using batangs as a medium. In here, the medium of the electric field and the medium of light waves are the same batangs. That is, the vibrational energy of the electric field and the wave energy of light waves share one medium(batang).^[8] <<http://batangs9.com/E-8.pdf>>

When the vibrational energy of an electric field acts by using batangs in space as the medium, the batangs in space syntonically reacts on the action of the vibrational energy. In this syntonical reaction, the batangs in space is controlled by the electric field. That is, the dynamic function of the vibrational energy controls the elasticity of batangs. Therefore, the level of freedom and elasticity of batangs are reduced inside an electric field.

The vibrational energy of an electric field acts in the longitudinal wave which push and pull batangs in space forward and backward. Batangs in space which is used as a medium of vibrational energy have a topical displacement action of short time Δt and Δd .

On the other hand, during the process in which the wave energy of light waves is propagated, batangs in space which is used as the medium of the wave energy have a topical displacement effect of minor Δf on short time of Δt . Therefore, when batangs which are controlled by the electric field

are used as the medium of light waves again, the actual propagation distance of light waves has a minor displacement effect of $\Delta f - \Delta d = \Delta m$, and the displacement effect of Δm determines the propagation velocity of light waves.

The vibrational energy of an electric field repeatedly provides an increasing effect of + and a decreasing effect of - on the wave energy of light waves. However, during the displacement process in which the vibrational energy of the electric field is converted into the propagation velocity of light waves, the decreasing effect of - acts predominantly. Therefore, the elasticity of batangs is reduced inside a transparent glass(dielectric), and the propagation of light waves progresses at a slow rate.

The effect of an electric field inside a transparent glass is inversely proportional to the light pressure(height of a wave, frequency) of light waves. For example, X-rays and gamma rays are composed of higher waves(light pressure) than the vibrational energy of the electric field, and the vibrational energy of the electric field is relatively weak. Therefore, the vibrational energy of a weak electric field cannot influence any change on the progress of strong X-rays and gamma rays. These X-rays and gamma rays consistently maintain their original light velocity(C) inside a transparent glass.

The control of the electric field and the elasticity of batangs are inversely proportional inside a transparent glass. For example, when the physical

density(density of protons) of the transparent glass is increased, the elasticity of batangs is weakened. Also, if the elasticity of batangs is weakened, the propagation velocity of light waves which use batangs as a medium is reduced. In other words, inside heavy metals such as lead(*Pb*), the density of the proton(the density of the material) is very high and the strength of both electric fields is very strong. Therefore, in the process of passing a strong X-ray through a heavy metal substance(*Pb, Au, Hg, W, etc.*), it can be very slow or blocked.^[17] <<http://batangs9.com/E-17.pdf>>

The positive electric field of protons has a more dominant power than the negative electric field of electrons. In addition, the retrograding wave(dent part) of the positive electric field is composed of higher waves(level of vacuum) compared to the advancing wave, and have a stronger control on batangs. Therefore, the wave energy of light waves is propagated at a much slower speed inside a positive electric field compared to the negative electric field.^[8] <<http://batangs9.com/E-8.pdf>>

The changes in light velocity do not provide the causes of refraction, and the refraction of light waves does not provide the causes of the changes in light velocity. That is, the reduction in light velocity and the refraction of light waves cannot be functionally connected. It is because the reduction in light velocity and the refraction of light waves commonly occur due to one cause. In here, the reduction in light velocity and refraction of light waves are simultaneously expressed through a situational condition(reaction of elasticity) of the medium. Therefore, the operating principle of the process in

which the reduction in light velocity and refraction take place must be handled independently from an individual standpoint.

In the process wherein the light electric current of light waves get through the boundary of a transparent glass, the vertical light pressure (pressure) and the horizontal light pressure change at different rates. That is, the relative value of the light pressure which is vertically acting at the boundary of the transparent glass is reduced. For example, when the physical density (density of protons) of the transparent glass is high or the path of the light waves has an angle of inclination, the vertical light pressure is influenced by the changes in light pressure. Also, the higher the light pressure of the light wave is, the lower the rate of reduction is for the vertical light pressure.

However, the horizontal light pressure consistently maintains its original magnitude. The refraction angle of light waves is determined by the process in which the vertical light pressure and the horizontal light pressure are combined into one vector. In here, the light wave in which the vertical light pressure is lower than the electric field barrier is reflected at the boundary of a transparent glass.^[19] <http://batangs9.com/E-19.pdf>

The Fizeau Effect, in which the propagation velocity of light waves is changed in flowing water, takes place through the process in which the electric field of proton is displaced as much as the speed of water movement. That is, the control of the electric field by batangs in space is

additionally increased as much as the speed of water movement. In here, the elasticity of batangs is influenced by the changes in the speed of water movement, and the changes in elasticity is expressed as the increase or decrease of light velocity like the Fizeau Effect.

2. Experimental method to verify the causality of electric field and light velocity

An electric field and the inside of a transparent glass(dielectric) have a spatial background with the same conditions. Therefore, the propagation velocity of light waves which passes through the electric field must be changed. The author's argument can be easily verified through the experimental setup in Figure 1.^[9] <http://batangs9.com/E-9.pdf>

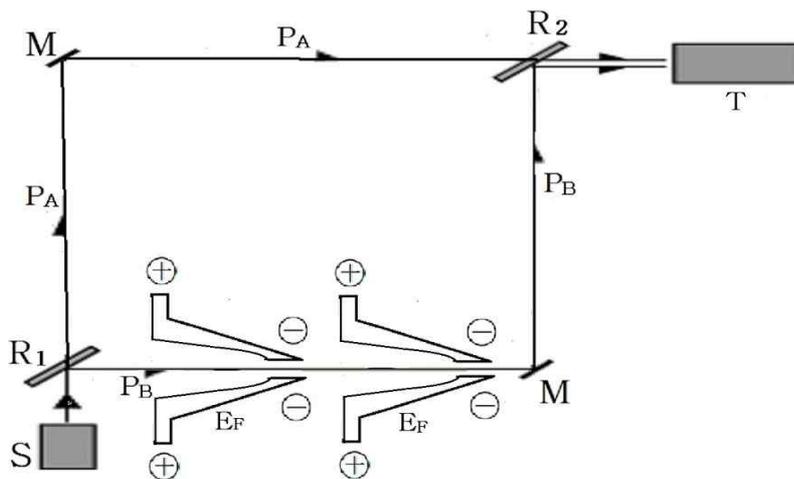


Figure 1. Verification method of the effect in which the light velocity is changed inside an electric field.

In the experimental set up in Figure 1, S is the light source of laser, R_1 is the first semitransparent mirror, R_2 is the second semitransparent mirror, M is the reflection mirror, T is the telescope of an observer, P_A

is the path of the first light wave, P_B is the path of the second light wave, E_F is the charged body of static, and \oplus and \ominus are the polarity of the electric field.

When light waves released from the light source(S) of laser pass through the first semitransparent mirror(R_1), it is divided into two lines of the first light wave(P_A) and the second light wave(P_B). These will individually be reflected on the reflection mirror(M), and two reflected light waves(P_A, P_B) will be combined in the second semitransparent mirror(R_2). In addition, the light waves which are combined in the second semitransparent mirror(R_2) can be confirmed through the telescope(T) of an observer.

In the experiment setup in Figure 1, the second light wave(P_B) passes through the center of the static charged body(E_F). Also, the negative electric field of $-$ charge is formed in the right end of the static charged body. In here, when the voltage of the negative electric field is gradually increased, the propagation velocity of the light wave(P_B) is changed, and the change in light velocity is observed as a displacement effect of the interference fringes through the telescope(T) of an observer.

Observing the displacement effect of the interference fringes through the telescope(T) of an observer proves that the elasticity of the medium changes due to the role of the electric field. Also, because the negative electric field of electrons has a lower energy density than the positive electric field of protons, the changes in light velocity is expected to be very

small. Therefore, it is advantageous if the negative electric field of the charged body(E_F) has a higher voltage.

The advancing wave of the vibrational energy which is composed of the negative electric field of electrons has higher waves(pressure, potential energy) than the retrograding waves, and the propagation velocity of light waves can be increased by the advancing wave with higher height. Therefore, the propagation process of light waves which passes through the negative electric field of electrons must have hyper light velocity(C^+). That is, the propagation velocity(C) of light waves decreases(C^-) in the course of passing through the positive electric field of protons, and increases(C^+) in the process of passing through the negative electric field of electrons.

III. Conclusion

The vibrational energy of the electric field and the wave energy of light waves have a common feature of using batangs as a medium. Also, when batangs in space is used as the medium of an electric field, the elasticity(level of freedom) of batangs is controlled by the electric field. In here, when batangs which are controlled by the electric field are used as the medium of the light wave again, the propagation velocity of the light wave is reduced.

The outer space is composed of batangs, and the vibrational energy of the electric field and the wave energy of light waves use batangs in space as a medium. That is, the outer space does not have the structure of a

physical vacuum. Therefore, all opinions in the theory of relativity and quantum physics which presume the spatial model of the vacuum void must be modified.

※ Request – If there is a progressive researcher who has a positive interest in the experimental method shown in Figure 1, please try it. I do not have accurate numerical data on the experiment above at present.

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*** Difference becomes specialty, Ideal becomes reality,
at the center of world in the name of center**

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