A complete elucidation of the time dilation inherent in the distortion of the photon foot and the reason for the principle of the constancy of the speed of light

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1. Overview

I discovered that the distortion of an electron foot and the distortion of a photon foot (a reflection of the electron's shape) are the principle of the constancy of the speed of light itself. The distortion of the photon foot, which grows in proportion to the speed of a photon, has a structure that inherently changes the way time progresses. It is believed that this is why Maxwell's equations are universal under Lorentz transformations.

Because Maxwell's equations are invariant under Lorentz transformations, changes in electric and magnetic fields are explained as effects of special relativity. However, when special relativity is applied to electromagnetic phenomena, paradoxes sometimes appear. For example, an electric charge that is stationary in a stationary system appears to be moving when viewed from an inertial system. This causes an electric current to flow and generates a magnetic field, but in reality, this phenomenon does not occur. Also, even though electrons move at a snail's speed when a current is flowing, a magnetic field is generated.

This paradoxical example can be explained without contradiction by the Lorentz transformation. However, the paradox does not disappear. The key to solving this mystery lies in the distortion of the foot of an electron and the distortion of the foot of a photon, which reflects the electron’s appearance.

2. Light Clock

Einstein liked to use the light clock when explaining the theory of special relativity. Fig1

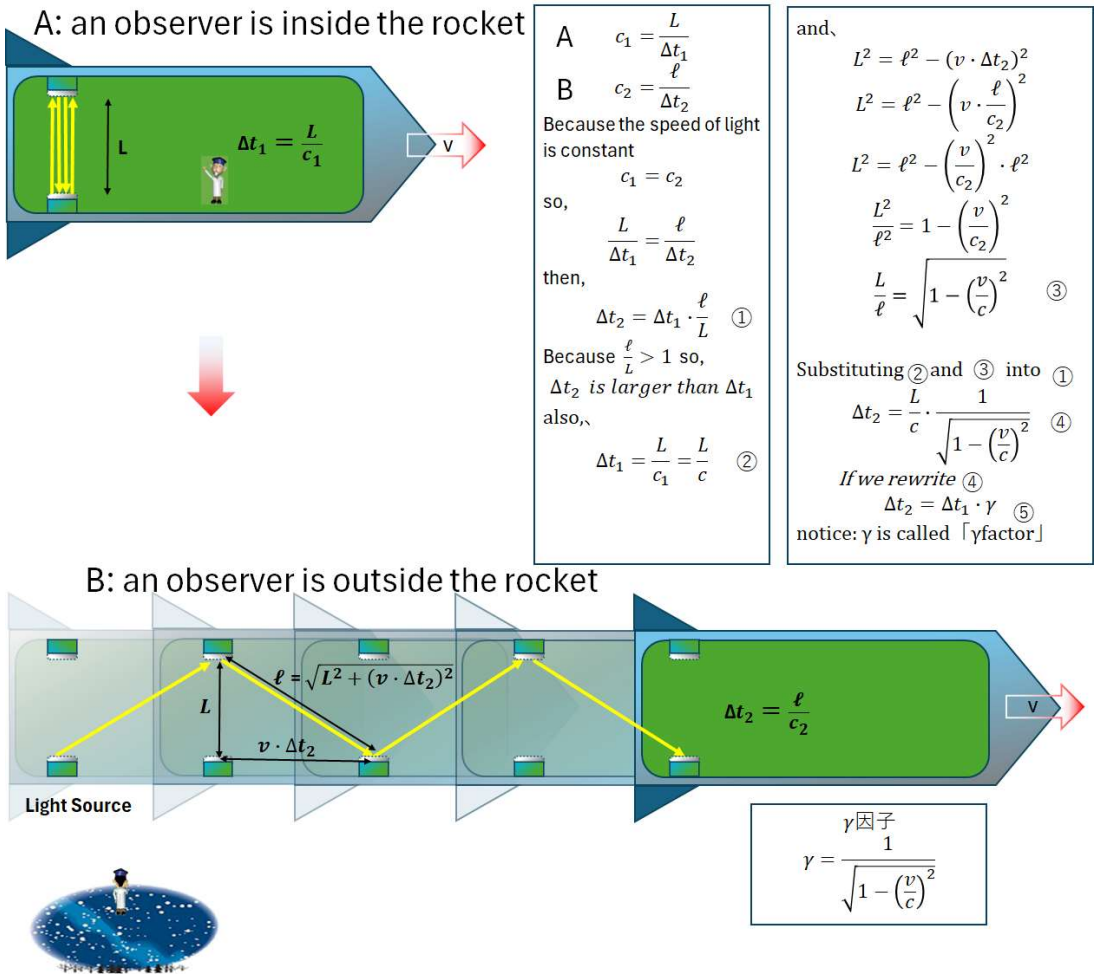


Fig1

3. The same distortion of the photon tail as in the light clock

The path L of the light clock in the stationary system becomes the path ℓ in an inertial system moving at a speed v. Let us apply this to the photon model of Energy Body Theory and set up a light clock. Then, the length L of the position where the photon foot is not distorted in the stationary system becomes a path ℓ longer in the inertial system moving at a speed v, where the foot is distorted. And we can see that this is exactly the same relationship as Fig. 1 of the light clock thought experiment. Fig. 2 (In Fig. 2, the exact same calculations can be performed as for the light clock. The calculation formula is the same, so it is omitted.)

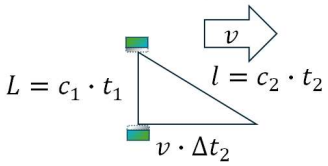
Therefore, when observed from another inertial system, as the speed of the photon increases, the distortion of the photon foot becomes larger, and it is slowly distorted.

Since the appearance of the photon reflects the appearance of the electron, the same can be said about the distortion of the electron foot. This is why Maxwell's equations are universal for Laurent transformations.

Comparison of the distance traveled by the light in the optical clock with the distance of the distortion of the photon foot

Distance traveled by light on a light clock

$\Delta t_1 = \frac{L}{c_1}$



$\Delta t_2 = \frac{l}{c_2}$

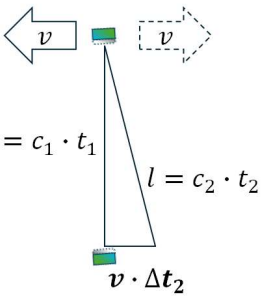
Because the speed of light is constant

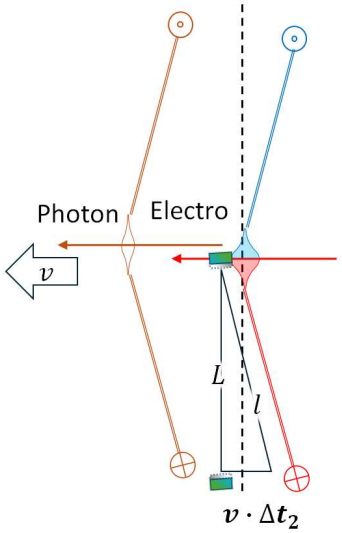
$c_1 = c_2 \therefore \frac{L}{\Delta t_1} = \frac{\ell}{\Delta t_2}$

Same Relationship

"The speed of a photon" and the "speed of light"

Relatively, the rocket is moving to the right at a speed of v.





$\Delta t_1 = \frac{L}{c_1}$

$\Delta t_2 = \frac{l}{c_2}$

Because the speed of light is constant

$c_1 = c_2 \therefore \frac{L}{\Delta t_1} = \frac{\ell}{\Delta t_2}$

Fig2

4. The principle of the constancy of the speed of light

In Energy Body Theory, the principle of the constancy of the speed of light, which is the principle of the special theory of relativity, has been explained under the condition that the speed of the photon is constant. This time, it has been clarified that the speed of light remains constant even if the speed of the photon changes. The reason for this is that, as shown in Fig. 3, when the speed of the photon increases, the distortion of the foot of the photon increases, and the distance that light travels in one second, 3 x 10^8 m, does not change. And this is important, but as a result, when viewed from another inertial system, the time of the distortion progresses slowly. And the principle of the constancy of the speed of light holds true. This makes us think about the greatness of Einstein's idea that the flow of time is different depending on the place.

In Fig. 3, the speed of the photon in the upper figure is depicted as being greater than the speed of the photon in the lower figure.

Electron speed in transition and magnitude of distortion of photon

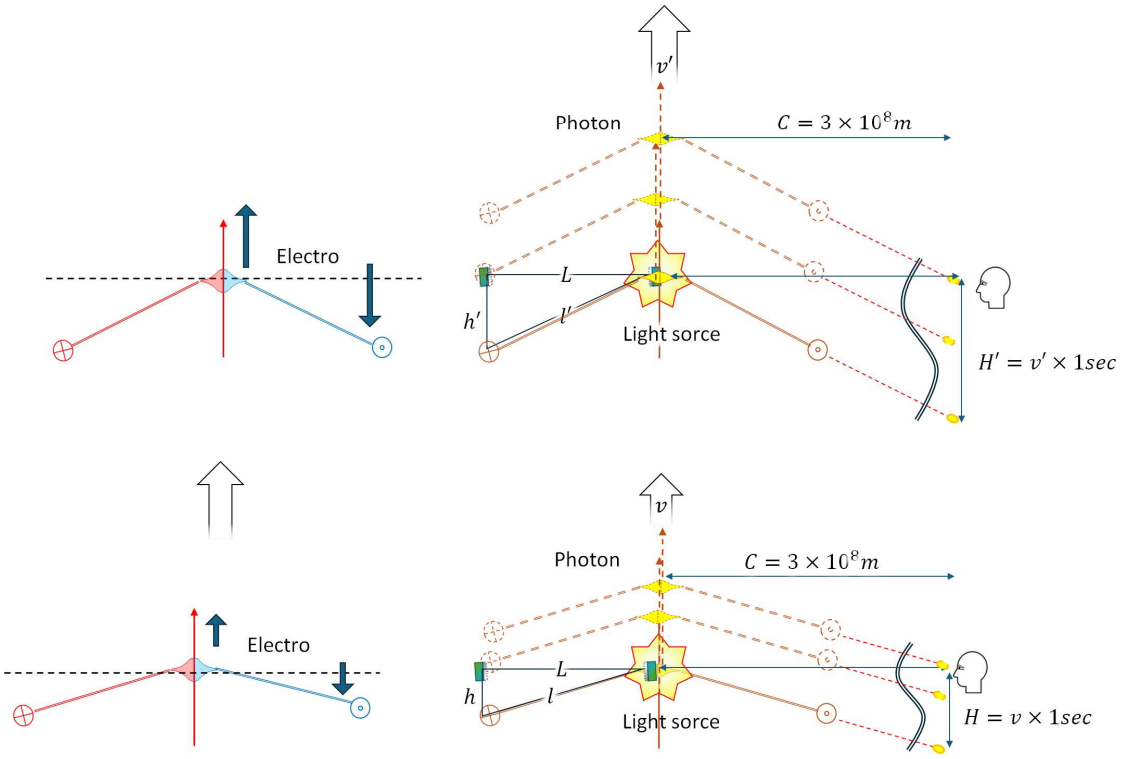


Fig3

5. Conclusion

The distortion of the electron's foot and the distortion of the photon's foot, which reflects the electron's appearance, represent the principle of the constancy of the speed of light, and

can be said to be the minimum form of the special theory of relativity in which time progresses slowly. This is thought to be the reason why Maxwell's equations are universal to Lorentz transformations. Note that when Maxwell's equations are Lorentz transformed, the magnetic field and electric field are swapped, but this does not mean that the hidden electric field or hidden magnetic field appears. It is obvious when looking at a model of Energy Body Theory in which the foots of electrons and protons are electromagnetic fields, but the posture only changes in the direction of a right angle.

6.Reference

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Energy Body Theory that [May] Explains the Origin of Everything in the Universe
https://vixra.org/abs/2310.0033