

Proper Light Speed (PLS)

(The Meaning Of Time)

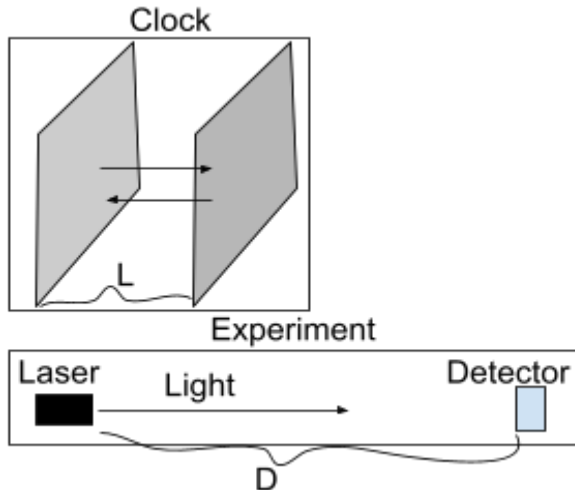


Figure 1: (top) A light clock in which photons pass back and forth between 2 mirrors. (bottom) An experiment in which a laser emits a photon, the photon travels to the detector, and the time of travel is measured using the light clock.

Thought Experiment: From Figure 1, count the number of passes P that a photon makes reflecting between the two mirrors before the detector registers light. The answer is always $P = \frac{D}{L}$ which is independent of light speed: Even if the speed of light had a magnitude of a googolplex, or varied as a sign wave, the number of passes will always be $P = \frac{D}{L}$ since both the light in the clock, and the light in the experiment change proportionally. Effectively, all clocks are light clocks: All fundamental forces are mediated via W and Z bosons (WNF), gluons (SNF), photons (EF), or gravitons (gravity), which propagate at or below the speed of light. If the speed of light were to be cut in half, the force carriers must propagate at half their original speed, or they would exceed the speed of light. This means that the particles inside your clock communicate at half the original rate, causing the clock to tick at half the original speed.

From the thought experiment above, our measurement of time is just the number of passes between two events. Therefore $[t] = [P] = \frac{\text{dist}}{\text{dist/pass}} = \text{passes}$ which we arbitrarily call seconds, minutes, hours etc... We can take this a step further and separate the mirrors to distance D , and then time has units of distance (the time is 6 meters between events A and B). The point being that time is not some higher dimension, it is simply a relationship between how far light travels (D) between two events, and how we define the unit of measurement by how big we make L . While we can write the coordinates of an event as having both a position and a time component (x, y, z, t), time can be written in terms of distance so it isn't a new dimension, it is just a convenient parameter. From this example, it should be clear that there is no such thing as a physical dimension of time, and that what is called time dilation in special and general relativity is simply clock speed dilation due to light speed dilation. No, I am not claiming that all of the results of special and general relativity are made up, I am just saying that the results are caused by light speed dilation rather than time dilation. Same results, different cause. Light simply moves through space as the local index of refraction (IOR) allows, and that IOR is dependent on energy density (mass, energy, velocity). In regions where the IOR is large, the speed of light is slower than in regions where it is small. This results in clock speed dilation between the regions.

This means that light doesn't have any units... Light simply moves, and we measure differences between two events by the number of passes the light takes between those events and we call that time. A better definition for time is the ability for change, and it is a property of existence. Light has the property of time (like everything else), and therefore it moves, causing the clock to tick. For convenience the "speed" of light is still referenced.

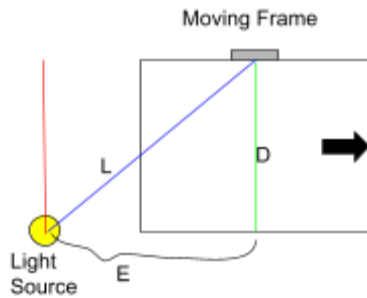


Figure 1: This is the typical setup for deriving the equations of time dilation in special relativity. The blue line represents the path of light from the stationary reference frame to the moving reference frame. At the moment that the moving frames mirror is directly over the light source, a flash occurs producing the red and blue photon paths. The moving reference frame travels just fast enough to ensure the blue line hits the mirror.

In Figure 1 there is the setup for the typical derivation of time dilation in special relativity. As the moving frame goes from left to right, at the moment that the center of the mirror in the moving frame is directly over the light source, a flash occurs. Two photons are emitted, one in the vertical direction (red) and one up and to the right (blue). In special relativity, the green line is treated as if it were the red line because the speed of light is the same in all reference frames. Thus:

$$L = c dt, D = c d\tau, E = v dt$$

$$\therefore L^2 = D^2 + E^2 \Rightarrow (c dt)^2 = (c d\tau)^2 + (v dt)^2$$

Simplifying yields:

$$d\tau = dt * \sqrt{1 - \left(\frac{v}{c}\right)^2} \quad (1)$$

Leading to the conclusion that time itself is a dimension. Now consider the same setup with the following interpretation. The green line in Figure 1 is simply the vertical component of the blue line representing the vertical component of the photon's path. This means that the observer in the moving reference frame only sees the vertical component of the light and thus in the moving reference frame, the speed of light is slower. The equations are as follows:

$$L = c dt, D = c_0 dt, E = v dt$$

$$\therefore L^2 = D^2 + E^2 \Rightarrow (c dt)^2 = (c_0 dt)^2 + (v dt)^2$$

Simplifying yields:

$$c_0 = c * \sqrt{1 - \left(\frac{v}{c}\right)^2} \quad (\text{STR analog, 2})$$

c : This is the speed of light when the IOR is the smallest (zero-g, no velocity).

c_0 : This is the speed of light at any point due to the IOR $\frac{1}{\sqrt{1 - \left(\frac{v}{c}\right)^2}}$ (no matter present).

From equations (1) and (2), the speed of light dilates exactly as time was thought to dilate in special relativity. Hmm... I wonder why? Light speed dilates causing all fundamental forces to do the same, resulting in clock speed dilation.

When a wire isn't conducting electricity, it is electrically neutral. When a voltage is applied, the electrons begin to move resulting in their force carriers slowing down which causes an imbalance. Hence the force.

Suppose that observer A is stationary and observer B passes them. The proper speed of light c_0 in B's reference frame causes their clock to tick slower. However, the light from A also slows down (in B's RF) and therefore observer B sees observer A's clock dilate. Likewise, the same occurs for observer A.

Additional Info:

https://www.researchgate.net/publication/377590905_The_Proper_Light_Speed_PLS_A_unification_of_Gravity_Quantum_Mechanics_and_Light_propagation