Disproving Relativity Theory

Soon after relativity theory was presented, the theory was disproved in various ways - logically, mathematically and experimentally. Logical disproof is very simple. Relativity theory claims that the "time" of every observer goes faster than the "time" of all other observers which are moving relative to this particular observer. On the other hand, the relativity theory claims that it is impossible to determine whether an observer is moving or not, which implies that the motion cannot cause any effect. But nevertheless, the symmetry of so-called "time dilation" would mean that each of two observes would see the others' clock going slower, what is logically impossible. This proof, which is also known as twin paradox, should normally be sufficient to abandon any theory which demands such illogical behaviour, but in the case of relativity theory, it did not happen. What could be a strange reason for the acceptance of an illogical theory? Is it the alleged compatibility with several experiments? But if the experiments are examined more thoroughly, we will always find that the results show an asymmetry which cannot be explained in accordance with the relativity theory.

Further, it is mathematically impossible to derive so-called Lorentz transformation. The most common trick that is being used is to make a set of two equations of the form:

$$x' = ax - bt$$

where $a \neq 1$ and $b \neq 1$. We see that for $t = 0$ we would have for example $5m = 10m$, what is obviously impossible.

First experimental disproof of the theory of relativity was presented by Sagnac [1, 2], who has shown that the light moves at a constant speed relative to a preferred reference frame in which the ether is stationary. But also, in this case, some physicists did not accept the proof, claiming that the experimental arrangement is not suitable because of the rotation of apparatus, i.e. the motion is not sufficiently "inertial." But the question is, with respect to what the rotation takes place? According to relativity theory, there is neither absolute space nor luminiferous ether. That means, there is nothing in space, relative to what the apparatus could rotate and we can equivalently assume that the space outside of the apparatus is moving. It is absolutely empty space according to special relativity.

Sagnac has shown that the speed of light is not constant relative to the observer in his own reference frame. The motion of the observer cannot influence the propagation of light, no matter how the observer is moving - on a straight line or not. The time the light needs to reach the observer depends only on the distance the light travels from the point of emission to the point of reception of the signal. It does not matter what is this distance at the moment of emission i.e. the distance in the moving frame of reference. After it was emitted the light travels independently of the motion of the observer or of the source. Nothing can influence the propagation of light except the motion of the medium through which it passes.

Another experimental disproof of the special relativity theory is the experiment of Michelson-Gale-Pearson [3]. In this experiment, the very large apparatus revolves around earth's axis in the same way as the earth revolves around the sun. This motion can be regarded as approximately inertial. The radius of rotation is very large. The accelerations in the experiment are very small and orthogonal to the direction of propagation of light, so the influence on the experimental results is negligible. The only measurable influence is due to motion parallel to the light propagation direction as it was confirmed by the experiment. According to illustration (Fig. 1.) two pairs of mirrors move at different speeds, so we can calculate:

$$R_1 = R \cos \theta_1, R_2 = R \cos \theta_2$$

$$v_1 = R \cos \theta_1 \omega, v_2 = R \cos \theta_2 \omega$$

$$L_1 = L_o \cos \theta_1, L_2 = L_o \cos \theta_2$$

$$\theta_2 - \theta_1 \approx \frac{H}{R}, \frac{\theta_2 + \theta_1}{2} = \theta$$

whereby R is the radius of the earth, ω the angular velocity of the earth's rotation and θ the latitude.
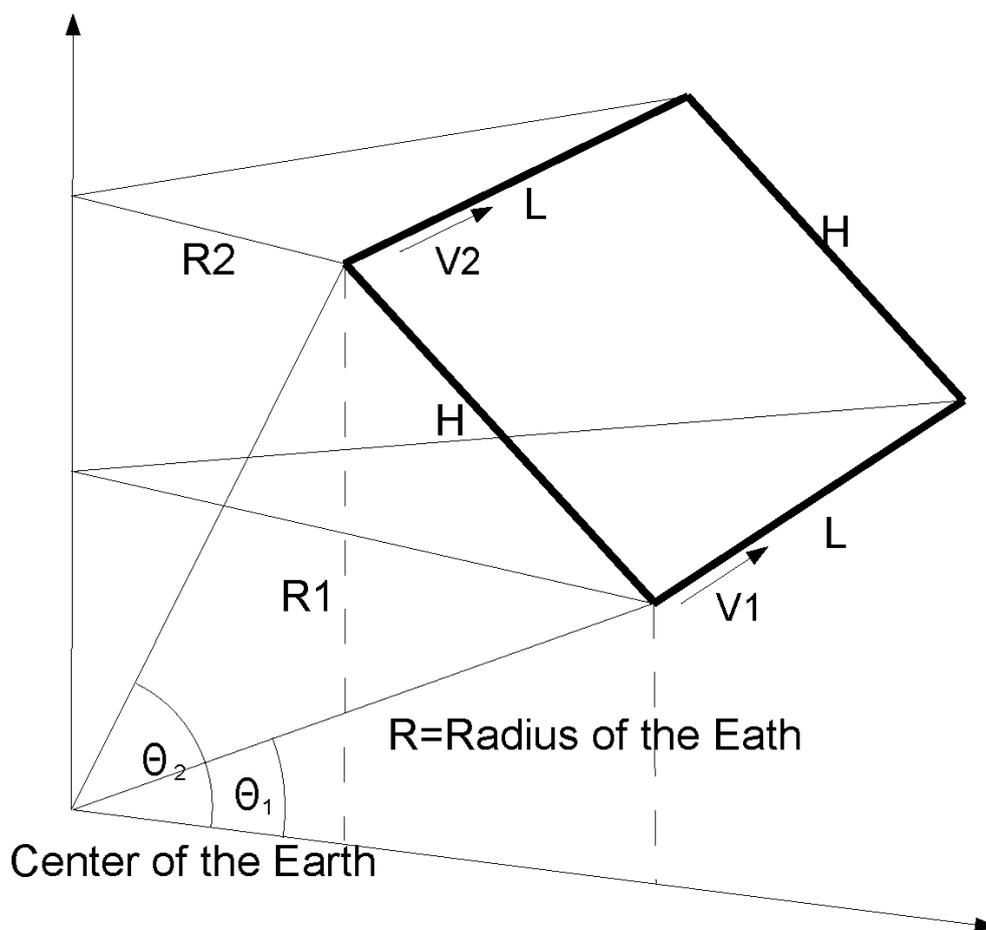

Fig. 1.: Michelson-Gale experimental arrangement.

North-south paths have no contribution to the difference of light travel time if they are placed along the meridians because of symmetry of the arrangement. East-west and west-east travel time difference along south and north path counts to:

$$\Delta t = \left(\frac{L_1}{c-v_1} - \frac{L_1}{c+v_1}\right) - \left(\frac{L_2}{c-v_2} - \frac{L_2}{c+v_2}\right),$$

$$\Delta t = \frac{2Lv_1}{c^2-v_1^2} - \frac{2Lv_2}{c+v_2^2},$$

$$\Delta t = \frac{2L_oR\cos^2\theta_1\,\omega}{c^2-(R\cos\theta_1\omega)^2} - \frac{2L_oR\cos^2\theta_2\,\omega}{c+(R\cos\theta_2\omega)^2},$$

$$\Delta t = \frac{2L_oR\omega}{c^2}(\cos^2\theta_1 - \cos^2\theta_2) = \frac{4LH\omega\sin\theta}{c^2}.$$

During the time span t, the light needs to cross the distance L, the mirrors move the distance $s = vt$. Substituting the values $L = 613m$, $v = 348\frac{m}{s}$ in $\frac{L+vt}{c} = t$ we get $s = \frac{L}{c-v} \cdot v = 0.7mm$. Obviously, there cannot be any doubt that this motion is "inertial."

The Michelson-Gale-Pearson experiment has demonstrated that the speed of light at the earth's surface is not constant but is exactly the Galilean sum of velocities (the speed of light and the speed of the earth's surface). The so-called relativistic addition formula would give null result. The simplest conclusion is that the ether does not rotate with the earth because of absence of the friction between ether and matter. The only force that acts on the ether is the force of gravity which is directed toward the center of the earth and thus cannot cause a tangential force. The air atmosphere rotates with the earth because of the friction between air and the earth's surface. If the air be superfluid it could not rotate with the earth (this behavior of a superfluid is confirmed by numerous experiments with superfluid Helium).

The non-constancy of the speed of light at the earth's surface was also confirmed by GPS. The effect is called Sagnac effect to express the mainstream's view that the entire effect is due to acceleration which occurs because of the revolution of the earth's surface around the earth's axis. But there arises a conflict with the absence of such an effect in case of the revolution of the earth around the sun. The entire effect of this motion would be very large (about 30 km/s) and should easily be observable by GPS. Moreover, the synchronization of the GPS satellite clocks would be very difficult, and the effect would have to be taken into account by the calculation of the position on the earth. The mainstream regards revolution of the earth around the sun as inertial and the revolution of an object around the earth as non-inertial even though both motions are completely equivalent (non-inertial).

The simplest refutation of relativity theory - and which cannot be questioned - is shown in Fig. 2. A light signal is sent from the North Pole toward Polaris (North Star). A receiver/emitter moves relative to earth in the same direction toward Polaris at speed v. Because of the principle of relativity, the receiver/emitter can be regarded as stationary and at the same time the earth as "moving away" from the receiver/emitter in the opposite direction.

If the distance between North Pole and receiver/emitter at the moment of emission be L, the time, the signal needs to cross the distance is $\frac{L+vt}{c} = t$ because the receiver/emitter "moves away" from the light source. Contrary to this, if the signal is emitted from the receiver/emitter toward North Pole, the motion of the receiver - in this case it is the earth's surface at the North Pole which "moves away" - has no influence on the travel time of light signal $\left(t = \frac{L}{c}\right)$. In both cases the signal travels at the same speed c relative to earth and at c-v and c+v relative to receiver/emitter.

Conclusion: There exists a preferred frame of reference for light (electromagnetic field) - the earth-centered, non-rotating frame of reference. The "absolute" movement with respect to this reference frame can be detected by measuring the light travel time, which contradicts the special theory of relativity.
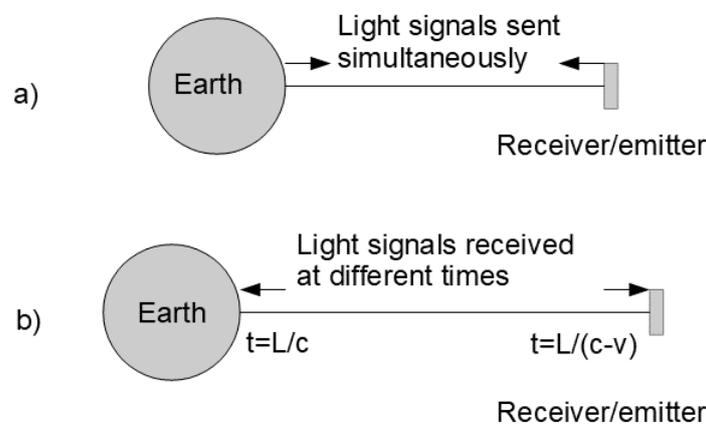

Fig. 2.: Propagation of light signals between earth and a receiver/emitter. Earth and receiver/emitter are moving away from each other.

References

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