

## Bradley as an Opposite to Lorentz

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**Abstract:** In regards to stellar aberration, an inconsistency in the application of the Lorentz's transformations is presented.

**Keywords:** stellar aberration, Lorentz transformations.

Astronomers for a long time have noted, that the annual motion of the Earth's orbit describes an ellipse. This phenomenon has called a stellar aberration. As far back as the 1728 English astronomer Bradley explained the cause of a sidereal aberration in his article (*J. Bradley, Phil. Trans. Roy. Soc., London, 35, 637, 1728*) by using the vectorial velocity addition of the Earth and light waves. The annual aberration was used as a definition of spacing distance to the nearest stars. This aberration not only happens annually, but also centennially and diurnally.

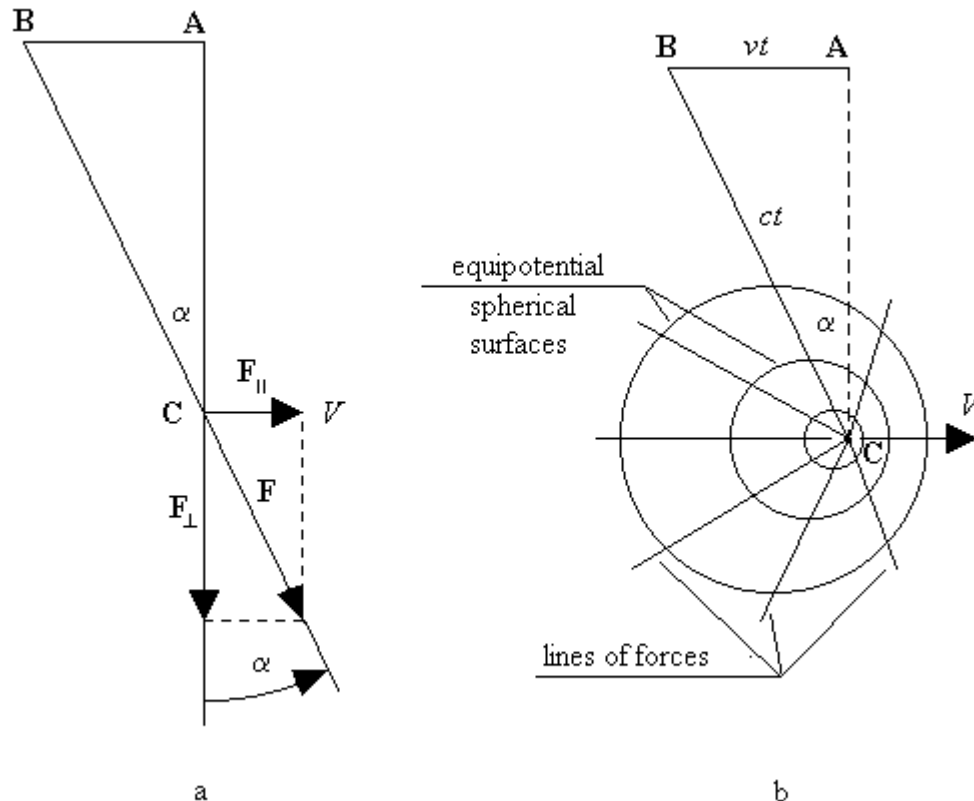


Fig.1

In a Fig.1a above, the image of a star shifts from its true position **A** to a position **B** (motion of the Earth, **C**) with a speed  $V$ . The star, as a point source, beams spherical waves. Thus on the Earth the component of the vector of electromagnetic field of the star, which has been turned

around on an angle  $\alpha$  concerning the perpendicular to the orbit of a planet, because of the velocity addition of Earth and light is accepted. This vector can be decomposed on its perpendicular and parallel components relative to the motion of the Earth. Thus the component parallel motion of the Earth should be subject to the Doppler effect.

$$F_{\perp} = F \cdot \cos \alpha = F \cdot \sqrt{1 - \sin^2 \alpha} = F \cdot \sqrt{1 - \frac{V^2 \cdot t^2}{c^2 \cdot t^2}} = F \cdot \sqrt{1 - \frac{V^2}{c^2}}; \quad F_{\parallel} = F \cdot \sin \alpha = \frac{V}{c}$$

From all of this, it is possible to conclude that the Earth goes moves with the primary (laboratory) frame of reference being the fixed stars. This system can be accepted for the approximate inertial reference. Therefore, because of the spherical and non-inertial system of the Earth, the delay of potentials is watched as shown in a Fig. 1b. Thus equipotential surfaces at the front of motion come nearer to the Earth, the force lines of field of the planet deviate back. This implies that the component of any field from any point of moving body or particle, in a laboratory frame of reference, will be a visible bevel to aberration angle  $\alpha$ . This angle is determined by the rate of a body's speed to the speed of a field. Therefore, it will appear as a component of the vector parallel to the motion of the object, and the perpendicular component will be diminished pursuant to the Lorentz transformation by the sum of the operating forces, the components of a field from such points that can be presented (magnetic and electrical fields).

If from similar points of a field compound any device, for example capacitor, the picture in a Fig. 2 conforming to the aberration phenomenon, will be received.

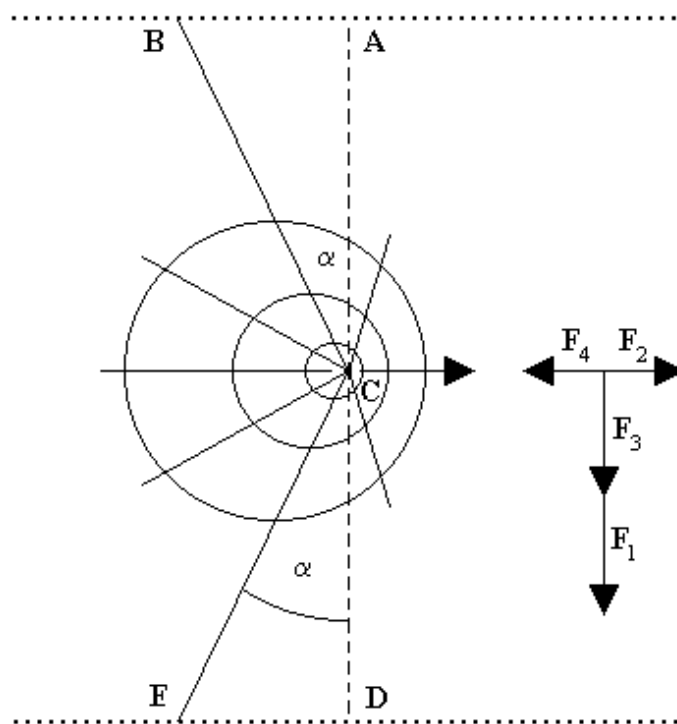


Fig. 2

The motion of a charged particle between capacitor plates, will seem like points **B** and **C** bevel by  $\alpha$ , but not points **A** and **D**. Let's suspect, that the upper lamina is charged the same as a particle, thus the repulsive force which is operating through line **BC** will be decomposed on

components  $F_1$  and  $F_2$ , and the attractive force which is operational through line  $EC$ , - on components  $F_3$  and  $F_4$ . If the particle goes to the middle of the capacitor, forces  $F_2$  and  $F_4$  will be compensated by one another. If no, then the acceleration or deboosting of the speed of flight will be watched in precisely the same way as represented by the magnetic or gravitational field.

As a result of the conducted analysis it is possible to assert, as the Kaufmanns' and other similar experiments demonstrated, there is not an increase of particle's weight, but rather the law of aberration and delay of potentials. The same phenomenon disclaims both the Lorentzian reduction of length and time, about which one - separate talk (see "[Optics of Masses](#)" in the Journal of Theoretics). Using Lorentz transformation, it is possible to define not only speed of a particle, but its energy.

It is interesting to mark as well that the fact, as previously mentioned above, that with the increase of speed of an accelerated particle because of the Doppler effect, the energy transmitted to this particle will decrease. If a coupling energy of a particle and field (not quantum) equals  $E_v=hf$ , where  $E_v$  - the energy at speed  $V$ ,  $h$  - Planck's constants, and  $f$  - frequency, then this expression is true only for the parallel vector component.

In summary, it would be desirable to bring attention to Einstein's relativity theories. It is not enough that they are discordant. These theories, furthermore, are based on insecure formulas carrying up it in the absolute. It is possible to invent running away of galaxies, black holes, trouble of time, and so on, providing its own basis of existence. Physics today suffers for theoretical hypocrisy and stagnation, and fault to all is innocent effect of aberration ... Or are guilty of physics of the beginning past century?

#### Addendum

In aerodynamics, as a flight vehicle approaches the speed of sound, the transformation "of "Lorentz" takes place, where  $M$  - Mach number also is applied:

$$\sqrt{1 - M^2} = \sqrt{1 - \frac{v^2}{c^2}}$$

At speeds in excess of the speed of sound, the following formula giving to us hope for the possibility of interstellar space travel:

$$\sqrt{M^2 - 1} = \sqrt{\frac{v^2}{c^2} - 1}$$

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