Evidence of a media (ethere) centered on the earth, i.e. the special relativity theory is wrong.

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Abstract

We examine the associated wave of the electron, and we put in evidence the problem with its relative velocity. The velocity of the electron is always measured relative to the laboratory, which gives the correct behaviour of the electron concerning the law of Louis de Broglie. But, to agree with this law, there must exist some interaction between the electron and the laboratory, which allows the electron to modify its characteristics. The electron must therefore interact with a media connected to the laboratory. Such a media must then be associated with the earth, following it in its path through the Universe. Such a media means that the special relativity theory of A.Einstein is wrong!

1 Introduction

We will examine an electron in constant linear movement, such an electron has an associated wave, which follows the law of Louis de Broglie (1).

$$m_e v \lambda = h \tag{1}$$

.

The problem we pose is; the velocity, in this equation, is relative to what?

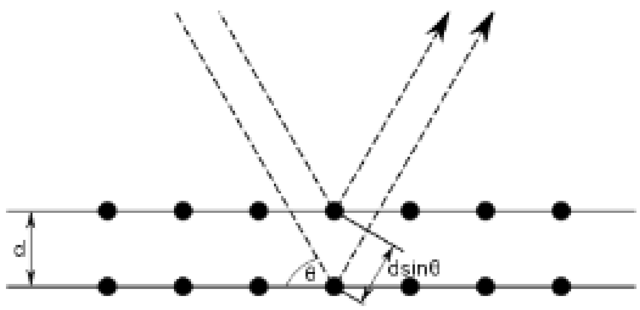

Figure 1: Scenario of Bragg reflexion (Lawrence Bragg and his father William Henry Bragg)[4]

It is first necessary to find a way to make a sufficiently precise measurement of the wave length, before discussing the velocity of the electron. For this purpose we use the results from X-ray diffraction experiments, which measure the mean position of the atoms in a crystal[1].

The wavelength of a photon is

$$E = h\nu \Rightarrow \lambda = \frac{hc}{E} \tag{2}$$

.

We then use Bragg's law

$$n\lambda = 2d \sin\theta \tag{3}$$

.
where d is the distance between atomic layers and n is the number of wavelength.

The photons velocity is much higher than the difference of velocity between the earth and an eventual surrounding media, i.e., any such relative velocity can be neglected, considering the precision of the result obtained. If we direct an X-ray beam versus a crystal, we obtain Bragg's reflection (see fig. 1). We can then calculate the distance between atoms, in a crystal, to around an order of $10^{-}5$ m, which is a precision much higher then needed for our reasoning.

2 Electron diffraction

We are interested in the Low Energy Electron Diffraction (LEED)[2][3], since the velocity of the electron beam is in the same order, as an eventual relative velocity between the earth and a surrounding media, when the wavelength is comparable with the distance between atoms in a crystal.

Let us imagine an electron beam, with a non relativistic velocity (let's say 10^6 m/s), directed versus a crystal, such electrons give also a Bragg's reflection (see fig. 1).

The picture obtained from such experiments are symmetric, as presented in figure 2, giving identical results, independent from position (direction) of the experimental apparatus or time of experiment. The electron beams velocity is around $1\ 10^6\ \frac{m}{s}$, compared to the earth velocity relative to the Universal system of reference of the Cosmic Microwave Background Radiation, which is around $0.37\ 10^6\ \frac{m}{s}$. This means that if we believe that the electrons velocity should be relative to a media (ether), we would expect that such pictures should be asymmetric or irregular, but, this is not the case!?

Let us imagine a laboratory, having a heavy ion source, making the following experiment. You chose an ion having a strong β^- decay, and you give it a velocity v_i. You then select the decaying β^- electrons with low energy and velocity v_e (around 10^6 m/s), in the forward direction. there should also be install a LEED detector along the beam line.

The question to answer is: Which wave length, of the electrons associated wave, will the LEED experiment show? The law of Louis de Broglie (1) must be valid but, in which system of reference?

In the heavy ions system of reference; the electrons wave length should be

$$\lambda = \frac{h}{m(v_e - v_i)} \tag{4}$$

while, in the laboratories system of reference, it should be

$$\lambda = \frac{h}{mv_e} \tag{5}$$

Remember that this is non relativistic, there is no speed close to the light speed, all relativistic modifications can be neglected!

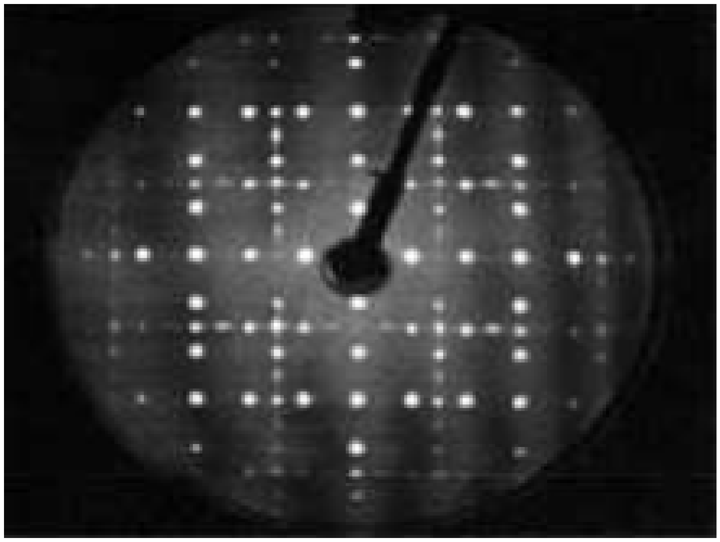

Figure 2: Experimental picture of LEED (Wikipedia)

Any observer must conclude that the electron beam has an associated wave with a wave length comparable with the distance between the atoms in the crystal (extracted from the LEED experiment). But, this would, in the system of the ion, disagree with the law in equation (1) (remember that this is not relativistic)!

There are two possible solutions:

- The system of the heavy ion (emitting the electron) is correct, i.e. the equation (1) is valid for the heavy ion system but not for the laboratory system. This means that **the electron obtain its wavelength at the moment of the** β^{-}*decay*.
- The system of the laboratory is correct but not the system of the heavy ion. This means that the electron obtain its wavelength from the surrounding space in some, not well defined, interaction, i.e. **the special theory of relativity is wrong**.

We are inclined to believe in the second possibility, mainly for three reasons:

- The different installations of LEED measurements should show some difference in the wave length of the electrons. Necessary since there are different ways to obtain the right energy, acceleration or deceleration of the electrons, which should give noticeable difference in the measurements, this is not the case.

- The electrons within an atom can be excited or de-excited, but, they always obtain the correct associated wave, without being absorbed and re-created.

- The electron is known to be a very small spherical particle, without structure (experiment from LEP CERN). Its associated wave must therefore be due to a transverse oscillation of some sort. Now, if you accelerate such a particle, in the sense of its velocity, the transverse oscillation should be unchanged, i.e., the frequency of oscillation should be constant, independent from the acceleration. Since this is not the case, there must be some interaction with the surrounding, to explain the law of Louis de Broglie (1).

3 Neutron diffraction

We can make a further step, since neutron diffraction experiments[5][6] use neutrons with much lower velocities then for electron diffraction (around $10^3\ \frac{m}{s}$).

Also here, there is no sign of any irregularities or asymmetries in the results, it follows, since the rotational velocity of the earth is around $0.5\ \frac{km}{s}$, that also the rotational velocity of earth must be perfectly compensated, i.e., an eventual local reference frame must follow the earth rotation, as well as, any other possible motion.

4 GPS

The geostationary satellite of the GPS system, show a time delay in agreement with special relativity theory[7]. The GPS-satellites are geostationary that is they have a velocity such as to follow the angular velocity of the earth. This means that an eventual neutral potential doesn't follow the rotation of the earth above the atmosphere, i.e., the "neutral potential" don't rotate if there is no mass to follow. The rotation, of an eventual neutral potential, must therefore be reduced with the density of the atmosphere.

5 Conclusion

After examining the associated wave of the electron, we propose that there is a local reference frame, centred on the earth, i.e., some sort of neutral potential, following the earth in its movement through space. All masses within the Universe must then have a similar neutral potential.

As shown by the GPS satellites and acceleration of charged particles; a smaller mass, moving within a reference frame of a bigger mass, exhibits the characteristics of reduced activity (time dilatation) and mass growth.

References

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