

Fundamental Errors behind the Paradoxes in Physics

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Abstract

We will see how denial of the ether concept, and confusions regarding the behavior of light, are the case of the many paradoxes in modern physics. Without the ether, the law of energy conservation is misleading. The wave or particle confusion has produced the twin paradox. However, by strict following the wave model for light and accepting the ether, we can have physics without paradoxes.

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The illusion of time dilation

We will see that the dilation of time is not real.

In the interpretation of Michelson-Morley's tests it is assumed that light's total motion (a vector sum of ether wind and wave velocity) is orthogonal to mirrors. This assumption is motivated by the idea that light should stay as long as possible inside the resonator. However, this idea is based on *magic*, since light cannot know that the mirrors are of finite dimensions. The idea that light could leave the cavity is particle thinking. Waves are just building up on one side and vanishing on the other side. Another aspect is that a higher Q-value (10^3 or 4 instead of 2) would be needed for this effect to be relevant.

To see an alternative to this we can observe that not coherent light from a source of finite size becomes more coherent far away from the source, when the source appears to be more point like. In a resonator light can be reflected many times and therefore also travel a long way, and many wave fronts are combined. In this process fastest wave fronts will dominate, according to Huygens's principle. Since fastest wave fronts are parallel to mirrors, we will have standing waves inside the resonator with wave fronts parallel to mirrors in the resonator. Therefore, illumination with many wave fronts produce *one* wave front inside the resonator, and this wave front is always parallel to mirrors.

Another way to look at this problem is to regard the fact that mirrors imply boundary conditions, that are relevant in relation to wave velocity, c , but *not* in relation to ether wind, v . Therefore, it is not correct to use $c+v$ in the law of light reflection in mirrors. Instead light should be described as $c(1+v_x/c)$, with v_x as longitudinal component in v . So, the normal to the wave front (not the vector sum) should be used in the law of reflection in a mirror. This is the ray direction, always perpendicular to wave fronts. The beam direction (vector sum) can deviate about 10^{-6} radians from the normal due to the ether wind, produced by planetary rotation. This small difference (1 mm at 1 km) can be ignored in practice, but is theoretically important in the interpretation of Michelson-Morley's tests.

The fact that the wave fronts in Michelson-Morley's tests *always* are parallel to mirrors means that the ether wind has *no effect in the transverse arm*. Michelson's first interpretation of his experiment was the correct one, and Potier's introduction of an effect in the transverse arm was false. This means that the introduction of time dilation was a cover up to hide Potier's mistake. So, time dilation is an illusion that was produced between 1882 and 1887 – when physical time went wrong.

Michelson assumed an ether wind equal to 10^{-4} times c , due to planetary translation. Indications from the global positioning system, GPS, indicate instead an effect in the order of 10^{-6} times c , due to planetary rotation.

It seems as the wave model has not been strictly followed by Potier. So, particle thoughts are mixed into wave optics, due to the wave or particle confusion.

Therefore,

- time dilation is *not* real, and
- we can use the Galilean transform, and
- instead of contraction of *space* we get a 2 times larger contraction of *matter*, and
- we cannot see this contraction, since the small contraction also exists in the definition of length
- The behavior of atomic clocks can have an alternative explanation, due to the fact that bound electrons move forth and back in relation to the ether wind. This causes a change in clock frequency of second order, due to the ether wind.
- Michelson-Morley's tests were empirically useless, but had a tragic effect on theory.
- Therefore, the theory of relativity is false.

The illusion of quantum jumping

We will see that thermal radiation does *not* demand quantum jumping.

It is normally assumed that bound electrons cannot produce thermal radiation. This idea is motivated by a statement that a real and instantaneous force would demand kinetic energy from an emitting electron. This means that an electron in point A, without time delay, should cause an effect on another electron in point B. This means action at a distance and is in conflict with our knowledge that thermal radiation moves with the speed c from A to B. During this time interval radiation cannot know if there is an electron in B. Therefore, during this time interval radiation cannot produce a *real* force. Instead radiation contains a cyclic disturbance in the ether. We can call this disturbance a *potential* force. When the radiation reaches B, the force is realized. This cannot be done earlier, since this would mean magical action at a distance.

The realization in point B demands energy, and the only available energy source in B is the ether. At that moment no energy can be drawn from the emitting electron in point A. So, we can conclude that bound electrons can produce thermal radiation (containing potential forces), without losing energy. Therefore, the need for quantum jumping can be an illusion, produced by ignorance of an existing ether as a source of energy. This means a false application of the law of energy conservation.

Therefore,

- the finite speed of thermal radiation means that generated field is only *potential*, with delayed realization and
- the need for quantum jumping is an *illusion*, and
- thermal radiation does *not* contain energy – only information to gain energy from the ether.

The illusion of light particles

We will see that physics without photons is a possibility.

Light is invisible. So, we cannot see the light. Instead we observe electrons exposed to, light. Normally the product hf is said to represent energy *delivered* by light. However, this product can just as well

represent the electrons capacity to *absorb* energy from light. Therefore, h can be an electron property instead, and hf can be caused by quanta of charge instead of by quanta of light.

The particle-based interpretation of the photoelectric effect states that a light particle, moving *towards* a surface causes an electron to move *away* from the same surface. The wave model is more realistic, and a *tightly* bound electron can orbit inside a wave front of light. An interference between light and electron can produce a force transverse to electron motion, and thereby change *potential* energy. So, if its kinetic energy is high enough, the electron can escape from its kernel, and perhaps also from the crystal. We can also explain the Compton effect in 2 steps. An electron can escape due to an X-ray wave packet, in the same way as in the photoelectric effect. Next step goes in opposite direction, when the electron is captured by in another atom, with the production of a second X-ray.

If we use a beam splitter to expose 2 photodetectors equally by continuous light from a laser, we get the same amounts of electrons from both detectors. These outputs are *not* correlated, since electrons in the 2 detectors behave independently.

Therefore,

- we do not need the particle model for light and
- h can be an electron property.

Summary

We have demonstrated alternative interpretations, and seen that the paradoxes can be eliminated. So, it is possible to explain physics by classical concepts. We have seen that we need the ether, but we do not need the photons. We can also conclude, from experiences in the global positioning system, that the ether wind must be a spherically symmetric field. An interesting property of such a field is that gravity can be explained, in agreement to Fatio's 300 years old model – and this is another reason for the necessity of an ether.

More details

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And also, at my [CNPS blog](#).