

When Physics Went Wrong

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Abstract

This article searches for the origin of the paradoxes in modern physics. It is demonstrated that physics got into trouble long time before the introduction of special relativity.

Michelson-Morley's tests (MMX)

MMX is an attempt to detect an effect of second order in the 2-way speed of light, that is caused by the ether wind. The 2-way speed of light is assumed to change from c to $c(1-\beta^2)$, with $\beta=v/c$ and v is the ether wind. Light speed in 2 opposite directions is assumed to be $c(1+\beta)$ and $c(1-\beta)$. A problem is that atoms in a crystal are controlling their separations by means of how they affect the ether, and that these effects also move with the speeds $c(1+\beta)$ and $c(1-\beta)$ in 2 opposite directions. We therefore find that the effects of the ether wind are changing atomic separations to the same amount as the change in 2-way speed of light. The expected effect in MMX in the longitudinal arm is therefore compensated by a contraction of physical bodies. This effect is 2 times the FitzGerald contraction and β^2 is in the order 10^{-12} in the horizontal direction. This is an effect of planetary rotation.

According to the wave model, light speed is related to the ether wind, and not dependent on the translational motion of the light source. So, the motion of the equipment cannot change the behavior of light. Therefore, we conclude no effect of the ether wind in the transverse arm of the equipment. This was also Michelson's opinion, and standing waves in a cavity always find the fastest way between mirrors. Therefore, mirrors are relevant in relation to the ray direction c , (not the beam direction $c+v$), since mirrors affect light, but not ether. See Fig 1.

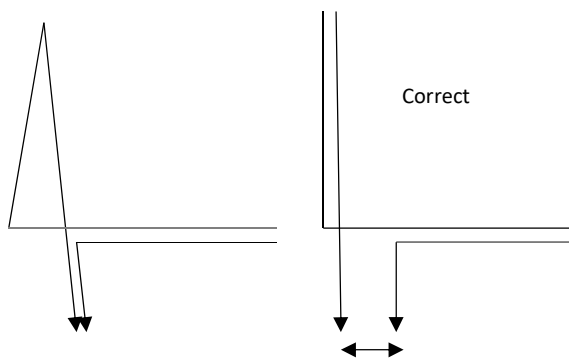


Fig 1 Interpretations of Michelson and Morley's tests

Unfortunately, at a time between 1880 and 1890, a bad thing happened to physics, when Michelson's correct interpretation was disregarded by the majority of contemporary physicists. They assumed, in error, that $c+v$ instead of c was controlled by mirrors. Therefore, they combined a correct wave behavior in the longitudinal arm with a false assumption in the transverse arm, that seems to be inspired by particle thinking. This mistake caused the wave or particle paradox (not complementarity). Another effect was that the FitzGerald contraction became too small by half

and the missing part was covered up by time dilation. In this way the time concept was corrupted, and individual aging was produced.

No effect in one arm, and compensated effect in the other arm had the effect that MMX could not detect an ether wind. Instead MMX confirms the Galilean transform. Although a very small contraction exists in matter, this effect is hidden by the definition of the length unit. Space and time are not affected by speed as Einstein said.

Stellar aberration

In a telescope reflecting, or refracting, surfaces have relevance in relation to the ray direction \mathbf{c} and not in relation to the beam direction $\mathbf{c}+\mathbf{v}$. So, transverse component in ether wind \mathbf{v} is irrelevant and wave front orientation is conserved in relation to \mathbf{v} . However, if we have a given ray direction in relation to the frame of our sun and want to describe it in the frame of our own planet we must compensate for planetary motion \mathbf{u} in relation to our sun. This is needed to conserve reality. Stellar and pulsar aberrations are therefore indications about planetary motion \mathbf{u} , but independent of ether wind \mathbf{v} .

The global positioning system (GPS)

We have seen that MMX and stellar aberration cannot indicate an ether wind. However, a first order effect of an ether wind of about 10^{-6} times c , caused by the planetary rotation, is detected by the Sagnac correction in the GPS system. In 1913 Sagnac detected a similar effect in a rotating equipment. So, if Sagnac had been before MMX, we perhaps would have a different physics today.

Atomic clocks

Atomic clocks have an important role in the GPS system. An ether wind blowing inside the orbiting plane of a bound electron can cause an acceleration and deceleration, during each orbiting period. A longitudinal acceleration produces a transverse speed, that adds, and subtracts to transverse component in electron's speed transverse to motion. So, the electron moves faster behind the atom in relation to the speed it has in front of the atom. This causes a second order effect on the clock frequency. So, we get an effect of the same kind as the effect in MMX. However, in atomic clocks this effect is not compensated and we can see this effect when atomic clocks are put into orbits. Therefore, clocks are not as perfect as Einstein thought, when he instead (together with Lorentz) explained the observed effect as a behavior of time itself.

This effect has been called dilation of time and described by SRT plus GRT. The effect can instead be described by one model, as an effect of ether wind. We can see this possibility by assuming an ether wind, radial to orbits, having the same magnitude as the tangential ether wind due to satellite speed. (The component due to speed is reduced by half, since the satellite is not stabilized I direction of motion.) Clock frequency is changed from f to $f(1-\beta^2)$ due to radial ether wind, and to $f(1-\beta^2/2)$ due to tangential ether wind.

Gravity

An ether wind in radial direction (a falling ether) can explain gravity by the fact that such an ether wind is focused towards Earth. The tangential ether wind, due to speed, is not focused, which perhaps can explain why no force is produced.

In the GPS system all transmitters are situated on a spherical surface, and all receivers are on a smaller and concentric surface called Earth. This fact seems to indicate that the ether wind is a spherically symmetric function, since this fact can explain the very high precision in the GPS system. Another indication of spherical symmetry is the need for the ether to explain gravity.

The wave or particle paradox

By means of a laser and a beam splitter we can illuminate two equal photodetectors with equal amounts of monochrome light, with the same frequency. The detectors generate about the same number of electrons. However, the detectors generate electrons at different times in the 2 detectors. This has been regarded as an indication about particles in light. But this indication is nevertheless

useless, since the wave model is also possible and electrons behave independently in the 2 detectors. Bound electrons orbiting inside the wave fronts of light can have their potential energies shifted by light due to a force transverse to motion. Interference effect can be possible for a specific frequency. The energy needed can be provided by the ether.

The explanation given here, based on the wave model for light, explains also why most emitted electrons in the photoelectric effect move transverse to light direction. In about the same way we can explain the first phase in the Compton effect. And the second phase can be explained to go in the reverse direction.

Summary

Modern physics is influenced by the expectations on MMX and not only by the empirical results. So, the wave or particle paradox was produced already at the time when Einstein was a child. The problems started when Michelson's correct interpretation about no effect in the transverse arm was abolished by a majority of physicists. These physicists assumed a correct wave behavior in the longitudinal arm but used for the transverse arm a behavior inspired probably by particle thinking. In other words: they used the beam direction instead of the ray direction. This gave us the wave or particle paradox and the twin paradox, since mirrors affect light, but not ether.

The wave model is the correct model for the structure of light, but we need 2 models for the propagation of light:

- The beam direction dependent on transverse ether wind, for focused light.
- The ray direction not dependent on transverse ether wind, in coherent systems.

We should consider Planck's constant as an electron property.

The many errors produced by Einstein divided the opposition and made it difficult to see an error that happened 1 or 2 decades before the introduction of SRT.

Results

- MMX indicates Galilean invariance.
- The contraction of bodies due to the ether wind is 2 times the FitzGerald contraction.
- No dilation of time.
- Atomic clocks are sensitive to the ether wind.

References

[Illusions and Reality in Physics](#)

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