

# Classical Physics Is Enough

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## Abstract

This article gives a short demonstration of how we can use classical concepts to describe modern phenomena in physics. It is possible to do that without complex concepts, like Lorentz invariance, quantum jumping and photons. We can also explain gravity without the bending of nothing.

## Michelson-Morley's experiments (MMX)

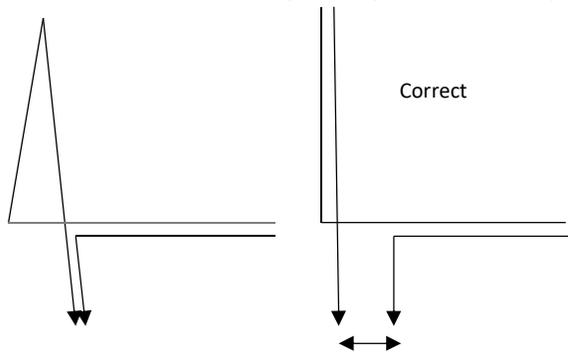


Fig 1 Interpretations of Michelson and Morley's tests

MMX has had an important impact on our reasoning about light. In MMX light moves forth and back between mirrors. These mirrors are relevant in relation to the oscillating light, but not in relation to the constant ether wind. The difference between these 2 concepts is important. Therefore, the mirrors imply boundary conditions on light in such a way that wave fronts in light always are parallel to these mirrors. So, light takes the fastest way between mirrors and therefore the ether wind has no effect in the transverse arm in MMX. This is

described in Fig 1. The marked distance in the diagram, is of first order, but not observable since it is only some micrometers, or 100 times less than assumed. This effect is caused by an ether wind, about one part in a million of light speed, and caused by the rotation of our planet.

Another way to see this fact is the following: Since we have assumed source motion not to add to light speed in the longitudinal arm consistency demands the same assumption for the transverse arm. So, we find that translational motion in 3 coordinates for the source does not add to light speed. Therefore, we have a second argument for no effect in the transverse arm in MMX, since light has no reason to change behavior due to equipment motion. Mirrors in MMX define the wave vector, but are irrelevant in relation to the ether wind, so, wave fronts are always parallel to mirrors.

This opinion was advocated by Michelson. However, a majority of scientists had a different opinion. They assumed, in error, that the combined motion of ether wind and wave velocity was controlled by the mirrors. This mistake reduced the prediction for MMX by half, and Lorentz could then use the missing part to motivate the dilation of time. So, we find that the wrong assumption confirms Lorentz transform and the correct assumption confirms the traditional Galilean transform. Therefore, we must skip Lorentz transform in favor of Galilean transform. In this way we also can solve the wave or particle confusion. We must also use a contraction of matter that is 2 times the Lorentz contraction. This contraction is equal to the reduction in 2-way light speed. This is not a coincident, since atoms in a crystal inform each other about their separations by means of effects that they produce in the ether. These effects are moving with light speed and compensate the effect of ether wind in the longitudinal arm in MMX.

We find that transverse ether wind cannot change the frequency of a light clock and not explain stellar and pulsar aberrations. (These aberrations reveal instead observer motion.) However, the ether wind can bend a wave front, but this must be done with a gradient in ether wind in the longitudinal direction of light. In this way we can explain the bending of light around the Sun.

Although we have doubled the contraction of matter we will not see this effect in our transforms, since we have used an elastic definition of the meter concept by using light in the definition. Therefore, we must use the traditional Galilean transform.

## Quantum jumping

The addition of 2 light waves is sensitive to phase. This seems to contradict the law of energy conservation.  $1+1$  is not always 2, but something between 0 and 4. Therefore, light cannot contain real energy, and the forces in light are not real from start, but potential forces that become real if they find a charged particle. At that moment light is transferring energy between charge and ether. Light contains information, perhaps represented by polarization, that can shift energy between the ether and a charged particle, without the need to contain energy.

This means that bound electrons can generate continuous waves without losing energy. So, electrons must not be jumping between the energy levels to produce thermal radiation.

## No photons

By using a beam splitter, we can expose 2 photodetectors with continuous monochrome light waves of the same magnitude. We find then that both detectors produce the same amount of electrons. However, the emissions do not happen simultaneously in the 2 detectors. So, the detectors react independently when an electron happens to orbit with correct frequency inside the wave front of light. This demonstrates a particle behavior of the electrons. Therefore, Planck's constant  $h$  represents an electron property, and represents how much energy an electron can pick up from light.  $h$  is not needed in the description of light in itself, only in relation to the electron. We cannot see the light; we only observe electrons dropping out from a detector. This experiment has been regarded as an indication of light particles colliding with electrons, but we can instead assume light waves to interfere with electrons and change the potential energy in the electrons.

We can also explain the photoelectric effect by an interference effect between electrons orbiting inside the wave fronts of light (with correct frequency) and change potential energy. The first step in the Compton effect can also be explained in this way, due to an X-ray wave packet causing an electron to escape its kernel. In the next step in the Compton effect the electron is captured by another atom, and a second X-ray is generated. We therefore can conclude that light can be generated in continuous form, or in wave packets, without the use the concept photon particles.

## Ether wind

We have seen that MMX cannot detect second order effect of the ether wind, and that stellar and pulsar aberrations cannot tell us transverse effects of the ether wind. However, second order effect is detected in the GPS clocks, since orbiting electrons move forth and back in relation to the ether wind. Therefore, the electrons have lower kinetic energy (moving slower) when they are in front of their kernel in relation to the speed when they are behind the kernel. So, acceleration and deceleration in the ether wind direction means different speeds in the two transverse directions, and we get a second order effect.

However, a first order effect is also demonstrated in the GPS system, by the Sagnac correction. Without this correction the system measures an ether wind of about one part in a million (in relation to light speed) due to the rotation of our planet.

MMX and stellar aberration has not detected an ether wind, but GPS has detected it in 2 ways.

## Gravity

Gravity is a spherically symmetric force field. The ether must explain gravity, and this means that the ether wind must be a spherically symmetric field. The GPS system proves that the ether wind is either constant and related to the center of our planet, or spherically symmetric in relation to that center. This follows from the fact that GPS transmitters and receivers are situated on two different, but concentric, spherical surfaces. Therefore, we find that a falling ether can explain gravity.

## GPS clocks

The clocks in the system change speed when they are put into orbits, and this effect has been explained by SRT and GRT with dilation of time. We can get the same prediction by means of ether winds moving tangentially and radially (with the same magnitude) in relation to orbit. The tangential effect is reduced since satellites are not stabilized in direction of motion. The focused radial ether wind produces the force of gravity and the not focused tangential ether wind produces no force.

## Pioneer anomaly

Light moves faster down than up. (I said so in an article to Galilean Electrodynamics in 1999.) Therefore, 2-way speed of light is lower in radial direction in relation to in tangential direction. This effect is  $10^{-8}$  at 1 AU and  $0.5 \cdot 10^{-9}$  at 20 AU. Therefore, changes in 2-way light speed change frequency an amount of one part in a billion. This means around 2 Hertz, and this can look like a slowing of the space station speed causing 2-way Doppler effect.

## Summary

The interpretation of the famous MMX has influenced our thinking about light. The behavior of light in the transverse arm in MMX was described in error, probably due to a thinking in terms of particles instead of in waves. This caused a false introduction of an effect in the transverse arm, and this mistake opened the way for dilation of time and the twin paradox. So, we have seen a way to avoid these absurdities.

Assuming light to be without energy opens a way to explain bound electrons to radiate without losing kinetic energy. Light can transfer energy between ether and charge, but not transport energy.

Assuming Planck's constant  $h$  to be an electron property means that we can explain light waves to make interference with electrons, instead of assuming light particles to collide with electrons. We do not need light particles. Light can be waves only (continuous as well as in packets).

An ether wind due to small and fast particles, in agreement to Fatio's 300 years old model, can explain gravity. Such an ether wind can be united with the high precision in the GPS system thanks to the spherical symmetry in the system. The behavior of clocks in GPS can be explained by ether wind, instead of by relativity theory. This means one model instead of two. We can also explain gravity.

We can explain Pioneer anomaly.

We need the ether, but not time dilation.

## Conclusions

We have seen possibilities to use classical concepts to explain most important phenomena related to the ether. We can avoid many paradoxes and absurdities. All we have to do is to skip the ether wind effect in the transverse arm in MMX. This is in agreement to Michelson's opinion around 1880-1890. His contemporaries assumed wave behavior in the longitudinal arm but nevertheless particle behavior in the transverse arm. In other words: They assumed light behavior independent of source motion in the longitudinal arm, but nevertheless dependent in the transverse arm. This inconsistency meant that light got a particle like appearance, in error. Therefore, we do not need photon particles. Light can be a wave motion changing potential energy in electrons by interference effects. We do not need time dilation either.

We can explain clock behavior by the ether wind instead of by SRT plus GRT. This means also a possibility to explain gravity.

## References

See [Pioneer Anomaly and the Ether Wind](#)  
or [Illusions and Reality in Physics](#)

at pages [CNPS](#) or [GSJournal](#)  
or my [blog](#).