The Mythic Michelson Effect

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The more than hundred years old conflict between Michelson's results and his prediction is analyzed and explained.

Background

Michelson predicted that a second order effect of an ether-wind at least equal to our planets velocity in relation to the centre of our planetary system should be detectable. This means an effect in two-way propagation time of at least equal to 10^{-8} of c. The result is instead an observed effect less than 10^{-14} of c, according to [1].

The Test for Michelson Effect

Michelson used light going forth and back between two mirrors and then made to interfere with itself. In relation to the equipment light speed is $c+v$ and $c-v$ in two opposite directions. This means a compression of the field in one direction and an extension in the other, where v is ether-wind's component in light's direction. For a constant number of waves over a two-way travel these two effects produce a net contraction of only $(1-v^2/c^2)$, since these two contra directed effects are equal in velocity, but not exact equal in propagation time. Michelson stated that he could detect this small effect, which is a difference between two Sagnac effects.

However there is a serious error in this reasoning. A failed test, like Michelson's, proves *nothing*. Instead it was interpreted as proving the opposite of the prediction. Michelson calculated the field effect between mirrors but did not consider what happened between atoms in a crystal. The separation between two nearby atoms in a crystal is defined by two static fields generated by the atoms, one atom is in the field of the other, but the atoms ether-related motion makes these fields dynamic. According to a second order differential equation changes in the ether are transmitted between atoms with equipment-related velocities $c+v$ and $c-v$, just as for light, which also is changes in the ether. The separation between atoms is dependent on

the small difference between these two almost equal effects of *v*, one contraction and one expansion. The atoms communicate there separations by changes propagating in both directions between *atoms* in the same way as the measuring field propagates in both directions between *mirrors.* Therefore we have the same field effect between atoms as between mirrors, and the effect between atoms controls the separation between atoms. This means that this separation is also changed a factor ($1-v^2/c^2$). Consequently, the Michelson effect is *compensated by contraction of length without dilation of time.* Palacios transform is therefore relevant instead of the absurd Lorentz transform. More details in [2]. This is in agreement to [1]. If the ether is entrained we have a length contraction in the order of 10^{-12}, constant and unimportant. Galilean transformation will therefore do. The Lorentz transform resulted from this misinterpretation of the Michelson effect. This rendered the remarkable postulation that observation of a moving phenomenon can be independent of the observer's own motion. A double equality was stated:

$$r^2 - (ct)^2 = R^2 - (cT)^2 = 0$$

By 'forgetting' the last equality it was possible to derive the Lorentz transform, and create an unhappy marriage between space and time. This is one of many unnecessary hypothesis' that result from abolishing the important ether hypothesis.

Conclusion

The Michelson effect is compensated by physical contraction of length without dilation of time. If the ether is entrained and the ether near our planet thereby has the same velocity as the centre of our planet ether-winds are in the order of only 10^{-6}. This is reason number two to Michelson's failure.

References

[1] Antonini, M Okhapkin, Gökly, and S Schiller, "Test of constancy of speed of light with rotating cryogenic optical resonators", *Physical Review A* **71**, 050101(R) (2005)

[2] J.-E. Persson, "The Special Theory of Relativity and the Sagnac Effect", **14:th** *Annual Conference of the Natural Philosophy Alliance* (May 2007), In Absentia Available at: www.geocities.com/mail0110261847 Also published in *Infinite Energy,* **Nr 77**, Vol 13, 2008.