Proof that the Ether exists and that the speed of light is anisotropic

The null result of the Michelson Morley interferometer experiment in 1887 has been widely regarded as proof that the aether does not exist, and that Relativity's assertion that the speed of light is isotropic is all reference frames is the correct model.

However, a number of experiments have detected anisotropy in the speed of light by exploiting the effect known as Fresnel Dragging to reveal the different travel times by light in each direction of a round trip.

The null result of the Michelson Morley interferometer experiment in 1887 has been widely regarded as proof that the aether does not exist, and that Relativity's assertion that the speed of light is isotropic is all reference frames is the correct model. However, Lorentz contraction was devised in order to explain the null result, thus causing the round-trip time of light in any direction within a moving reference frame to be consistent with a constant speed of light [4,5]. Lorentz contraction should have been recognized as the step required to save the aether theory, rather than supporting evidence for Relativity, which is what actually happened.

There have been many experiments conducted over the years since the Michelson Morley experiement, all conducted witht the aim of settling the argument about the existence of the aether once-and-for-all [7], but most of these seem to assume that the supposed anistropy of the speed of light would be of the same order as was presumed to be the case prior to the Michelson Morley experiment (with no Lorentz contraction occurring to the moving reference frame). Some of the others are not capable of detecting the amount of difference in travel times of light beams to reveal the anistropy, or are only able to detect phase differences rather than total travel time differences; thus can only detect a very small apparent difference in travel times – up to a phase difference of 2π radians, but not multiples of 2π.

However, despite the effect of Lorentz contraction making the detection of light speed anisotropy in a vacuum impossible, a number of experiments have detected an anisotropy in the speed of light for the Earth's frame in its motion

through interstellar space. This is able to be done by making use of the Frenel Dragging effect that occurs when light travels through a moving optical medium such as water or glass. This effect can be explained purely by Classical Physics [3] despite the claims by Relativity that it is another of the affects attributable to Special Relativity. The amount of the effect depends on the refractive index of the medium the light is propagating through, as well as the distance it travels through the medium. Therefore, for the Michelson Morely experiment (and many of the other experiements conducted since), the refractive index was too low (in air it is approximately 1.00029, compared to the vacuum where it is 1 and no Fresnel Dragging occurs), and the distance that the light traveled was very small – only metres, rather than the kilometers required to detect light speed anisotropy by this method.

Some of the experiments that have been able to detect the light speed anisotropy, and all agree of the direction and magnitude of the detected speed of the Earth through the aether are Miller (1933), Torr (1984), Krisher (1990), DeWitte (1991), Cahill (2006,2009) [1,2,8].

Perhaps the best of these experimental results was the experiment conducted by De Witte in 1991 over 178 days using 1.5 km of coaxial cable running North/South in Brussels. The refractive index of the cable was 1.5 and the following modeling of both the Fresnel Dragging of the light and Lorentz contraction of the apparatus in the Earth's reference frame (shown below) matches the De Witte data (see Figure 8 on page 14 in Ref [1]). Also to be noted is that the detected speed through the aether showed diurnal effects that tracked sidereal time and not solar time, and that orbital effects were also apparent, confirming the interstellar origin of the space flow.

>
$restart;$
$unprotect(\gamma);$

$c := 299792458;$
$v := 360000;$
$L := 1500;$
$n := 1.5;$

$$\gamma := evalf\left(\frac{1}{\text{sqrt}\left(1 - \left(\frac{v}{c} \right)^2 \right)} \right);$$

$$L_{\text{contracted}} := \frac{L}{\gamma};$$

$$v_{dragged} := v \cdot \left(1 - \frac{1}{n^2} \right);$$

$$dt1 := \frac{L_{\text{contracted}}}{\frac{c}{n} - v_{dragged}} - \frac{L_{\text{contracted}}}{\frac{c}{n} + v_{dragged}};$$

$$v := -360000;$$

$$v_{dragged} := v \cdot \left(1 - \frac{1}{n^2} \right);$$

$$dt2 := \frac{L_{\text{contracted}}}{\frac{c}{n} - v_{dragged}} - \frac{L_{\text{contracted}}}{\frac{c}{n} + v_{dragged}};$$

$$c := 299792458$$

$$v := 360000$$

$$L := 1500$$

$$n := 1.5$$

$$\gamma := 1.000000721$$

$$L_{contracted} := 1499.998918$$

$$v_{dragged} := 2.000000000\,10^5$$

$$dt1 := 1.5020780\,10^{-8}$$

$$v := -360000$$

$$v_{dragged} := -2.000000000\,10^5$$

$$dt2 := -1.5020780\,10^{-8}$$

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Once it is realized that space is a medium that can flow, and that light (and matter) are waves that flow with respect to this medium, there are other important consequences that follow from this. There is the supposed existance of Dark Matter, theorized primarily from the unexplained rotation rates of Galaxies, which appear to rotate at an orbital speed too high for the calculated amount of Baryonic matter within the Galaxy. However, if one realizes that space is filled with a field which has its own energy, then Black Holes would consume this field in the same way that they consume normal Baryonic matter from stars/planets [6].

Thus, when the large Black Holes at the center of Galaxies consume the aether field of space in this way, they cause the space surrounding them to flow inwards, much like water flowing down a plughole. This causes the orbiting stars to be carried with the space, and causes them to attain a higher orbital speed in order to remain orbiting around the central Black Hole. Therefore, there is no need to invoke an enormous amount of extra matter within Galaxies (which has evaded all detection, except for the gravitational effect attributed to it), and it can be explained by a flowing aether/space field.

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