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A Geometric Analysis of Relativity

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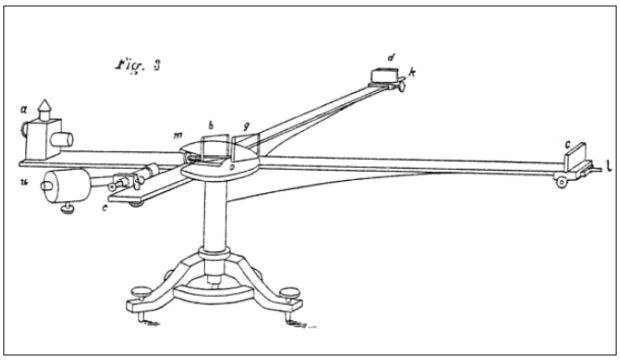
Is the Theory of Relativity falsifiable by mathematical observations?

Relativity's mathematical models are based upon the Michelson-Morley Interferometer Experiment of 1887.

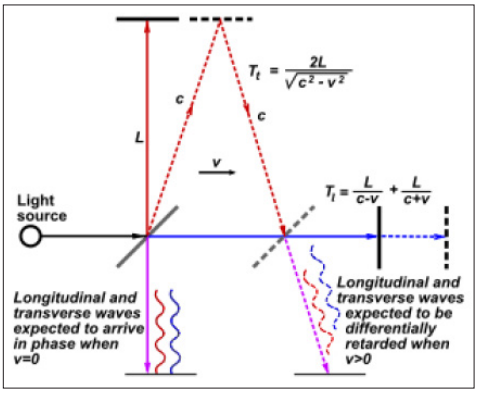
Wikipedia provides an illustration of the interferometer and a description of the experiment: A ray of light traveling at velocity, **c**, was reflected from one mirror to another at a distance, **L** (the length of the interferometer arms), in an attempt to measure movement of the earth relative to light, **v**.



There is also a figure illustrating the basic math theory broken down to pure geometry. Analyzing the math, a false limit is immediately apparent:

• In the first equation, $T_t = 2L/\sqrt{c^2 - v^2}$, if **v** were to equal **c**, the

quantity of $\sqrt{c^2 - v^2}$ would equal zero, and the theoretical triangle of velocities in the MME experiment would no longer exist!



To check this another way.

If I disregard the dimensions of length, time, and velocity, and think of the MME experiment in terms of a simple Pythagorean right triangle:

• The height, **L**, squared plus the base, **v**, squared equals the hypotenuse, c squared:

$$L^2 + v^2 = c^2$$

• And if I subtract v^2 from both sides, I arrive at the equation:

$$L^2 = c^2 - v^2$$

There's the false limit again!

• In the equation, $L^2 = c^2 - v^2$, if **v** were to equal **c**, the

quantity of $c^2 - v^2$ would equal zero! In other words, if **v** were to equal **c**, the right triangle would no longer exist. So by calling the hypotenuse of a right triangle equal to the velocity of light, the Michelson-Morley Experiment of 1887 created a false "light limit"!

Which would mean, relativity's famous "light limit" (where no velocity **v**, can equal the velocity of light, **c**) is based on a simple error in the theoretical math of the MME!

So on to the mathematics of relativity:

• If I develop the MME Pythagorean equation and take the square root of both sides:

$L^2 + v^2 = c^2$ or $L^2 = c^2 - v^2$ or $L = \sqrt{c^2 - v^2}$

Again, I arrive at the same false limit.
If v were to equal c, the MME Pythagorean equation,

$L = \sqrt{c^2 - v^2}$, equals zero, and the right triangle no longer exists.

• And if I take the equation one step further: $L = c\sqrt{1 - v^2/c^2}$

Here, if **v** were to equal **c**, v^2/c^2 would be a ratio of **1**/**1**, and the expression

$L = c\sqrt{1 - v^2/c^2}$ would be $L = c\sqrt{1 - 1/1}$, in other words, 0.

And, once again, the MME right triangle no longer exists!

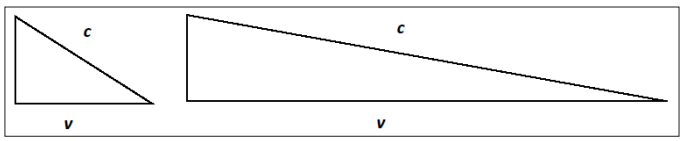
Bottom line?

As relativity's transformation equations contain the quantity, $\sqrt{1 - v^2/c^2}$ (which expresses the MME false "light limit" that, if **v** equals **c**, the right triangle of velocities no longer exists)—all of relativity's equations are false!

Relativity's Transformation Equations	
Lorentz Factor	$\gamma = 1/\sqrt{1 - v^2/c^2}$
Time dilation	$\Delta t' = \Delta t\sqrt{1 - v^2/c^2}$
Length contraction	$L = L'\sqrt{1 - v^2/c^2}$
Relativistic mass	$m_0 \equiv m\sqrt{1 - v^2/c^2}$

The error in the mathematical theory of the Michelson-Morley Experiment and the Theory of Relativity is easy to see in terms of simple geometry.

With the two velocities as sides of the same right triangle, any change to the length of the base (velocity, **v**) changes the length of the hypotenuse (velocity, **c**) as well.



And as neither velocity can be changed independently—as the velocity, **v**, can't be changed without changing the velocity, **c** (and vice versa)—obviously, the static logic of a right triangle isn't a valid way to compare dynamic velocities.

The unshakeable truth:
The hypotenuse of a right triangle will always be longer than its base. And based on this fact, relativity (erroneously) took the MME theorized right triangle of velocities as proof that no velocity, **v**, can equal the velocity of light, **c** !

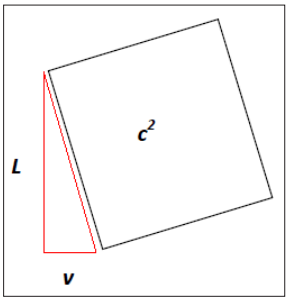
So the error in the mathematics of the Michelson-Morley Experiment (and relativity) is theorizing velocities as sides of a right triangle. And relativity's assertion that no velocity, **v**, can equal the velocity of light, **c**, is a false reality that only exists within this MME false right triangle of velocities.

Consequently, any of relativity's theorized changes in length, space, time, mass, energy, gravity, etc., based on the MME right triangle of velocities (where the velocities of **v** and **c** change "relative" to each other) are false as well!

This puts a new light on relativity's famous mass–energy equivalence equation: **E= mc²**

Energy equals mass times the square of the hypotenuse of the MME right triangle?

Yes. It's absolutely false!



In closing: The fact that the hypotenuse of a right triangle will always be longer than its base has nothing to do with the travel of light, or velocity relative to light.

In this article, though I have addressed the validity of the theoretical math of the Michelson-Morley Experiment and the Theory of Relativity, my intention is to speak to the much deeper and far-reaching concept of assigning velocities (such as, **v** and **c**) to the sides of right triangles. I would like to apply the criterion of falsifiability:

Once disproven, can the practice of assigning velocities to the sides of right triangles ever be scientifically valid?

If evidence that contradicts a theory comes to light, should the theory be discarded?