

Re: Why relativists don't understand Einstein's 1905 mathematics.

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- *From:* John Kennaugh <JKNG@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx>
 - *Date:* Thu, 11 Sep 2008 02:26:55 +0100
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wrote:

On Sep 10, 7:26 am, John Kennaugh wrote:

< Seeing fairies at the bottom of your garden must inevitably result in people questioning your sanity. Why the proposal that something can travel at the same speed in all frames of reference does not have the same effect is a mystery to me. >

It isn't a mystery to you, John; you just left out a few relevant words. I will therefore put them in: Seeing fairies at the bottom of your garden must inevitably result in people [who don't know you are wearing painted eyeglasses] questioning your sanity. Why the proposal that something can travel at the same speed in all frames of reference [as measured by them using esynched clocks] does not have the same effect is [not] a mystery to me.

??

< As far as I can see light is made up of particles which are only unusual in that they happen to travel rather fast compared to the speeds we are used to. >

Where did you ever "see" that "light is made up of particles"? [What we actually see is the slowly changing image on a curved pane, the retina of our eye(s).]

Re: Why relativists don't understand Einstein's 1905 mathematics.

Don't play semantics. Light is generated in quantized lumps (Planck) and arrives at its destination in those same quantized lumps (photo electric effect/Einstein) i.e. photons. It cannot mutate into waves for part of the journey because by their very nature waves spread out and their energy density reduces. The spread out energy of a wave cannot at the end gather itself back to a point to become a quanta of energy again. The waves of Maxwell's wave in aether theory do not physically exist. Light is made up of particles.

< They have momentum [= mass times velocity] which is why when they hit something pressure is detectable. >

If mass is a function of v , becoming infinite when $v = c$, then how come the momentum of a photon [$mc = \text{infinity}$] isn't infinitely great? Why doesn't a photon moving at c wipe out anything it hits?

This is basically saying that a photon cannot have mass because if it did a prediction of SR would be wrong. It has mass therefore SR is wrong and mass is not velocity dependent. Essentially what Einstein assumed was that EM theory is correct and that therefore the laws of mechanics had to change resulting in having to ditch 3 long standing and apparently sensible axioms of physics. The alternative is to assume that mechanics is fine and that EM theory needs to be adjusted. The only two things which need to change is firstly that light speed is source dependent – perfectly reasonable since light is made up of particles, and that the force between charges is velocity dependent. All you need assume is that c is the maximum speed at which a force can act so that the nearer to c a charged particle is travelling the less acceleration is produced. If you are accelerating a charged particle it is a function of q/m and there is no way of telling whether the factor which SR assumes multiplies m instead divides q .

< They have no need for an aether and in the absence of an aether a source in space is surrounded by nothing which can take part in a physical process so their speed must be the result of the only physical process involved, that taking place at the source. >

Einstein's "photon" is a quantity of energy whose numerical value is given by $e = hf$, in which e is Planck's quantum of energy, h is his quantum of action,

what does that mean?

and f is the frequency relative to a given object.
If we ignore the fact that this "frequency" denotes the number of WAVES that pass a given point per second, and that "a given point" is an abstraction – a point at rest in a given FoR –
then a photon (or ANY wave system) moving at c IS a physical process.

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Since it is impossible for such a physical process to take place in an empty nothing, a material medium is obviously present wherever light goes, which is everywhere in the universe.

I accept that that would be true if light was indeed a wave. It isn't. If it were it could not possibly knock electrons out of a metal unless the intensity was sufficient to make the metal hot enough to release thermal electrons. Once you accept that light is particles and that the waves do not physically exist then you have no need for a medium. Instead you need to concentrate on trying to explain how photons can produce such a convincing facsimile of a wave. Something seriously neglected by physics. I believe that Waldron is on the right lines [1]

< [1] Relativity is based upon the assumption that Maxwell's theory is impeccable. [2] The waves of Maxwell do not physically exist. [3] The aether in which they were thought to be waves does not exist. [4] The independent fields which were believed to map altered states in the aether do not exist because there is no aether for them to exist in. [5] EM theory is no longer a legitimate branch of physics and neither therefore is relativity. .

My comments:

1 is false.

"Albert Einstein was one of the few people who realised explicitly that his theory rests on the *assumption* that our present Maxwell–Lorentz electrodynamic theory, experimentally verified only for low velocities of charged matter will also hold for velocities commensurate with the velocity of light. Considering that our present electrostatics have grown out of a concept of an elastic ether, whose existence is now disproved beyond reasonable doubt, and that the Maxwell equations do not satisfy the principle of relativity in its simple form using the Galilei transformations this assumption is far from self evident" Beckman and Mandics 1965. Introduction justifying the need for their experiment.

STR is based on two postulates, the second of which (together with his third postulate – that clocks of all systems, moving or not, must be set to MEASURE the speed of light as a constant, $c = 1$ unit per second) is "Any ray of light moves in the 'stationary' [i.e. MOVING] system with the *_DETERMINED_* velocity c , whether the ray be emitted by a stationary or by a moving body."

Maxwell's theory may be summarised as follows:

- 1/ Everywhere including space is filled with the aether.
- 2/ A charge will cause a 'stress' in the aether.
- 3/ A field is the pattern of 'stress' in the aether.

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4/ The force between charges is a result of the interaction of their stress patterns in the aether.

5/ The stress can propagate in the aether at speed c in the form of electromagnetic waves an example of which is light.

Two predictions of the theory were:

Prediction 1 – Because the speed is controlled by the aether, the speed of light is independent of the speed of the source.

Prediction 2 – Because the speed is controlled by the aether, the speed of an observer relative to the aether will add to or subtract from the speed of light in the aether.

The MMX was a difference method trying to show the truth of prediction 2.

I said that Relativity is based upon the assumption that Maxwell's theory is impeccable. It is also based on the assumption that the MMX had sound methodology. On that dual basis it *appears* from the MMX that every observer is stationary w.r.t the aether. The second postulate simply describes what an observer would observe if he was, or *appeared to be* stationary w.r.t the aether. It also assumes the validity of prediction 1 of Maxwell's theory. Lorentz came up with an explanation as to why every observer *appears* to be stationary w.r.t the aether. It assumed that Maxwell's theory was impeccable but that the aether had an effect not predicted by Maxwell. I don't believe that Einstein came up with an alternative but whether he did or he didn't he was still tackling the problem from the same starting point as Lorentz. They were both trying to modify theory such that it was still consistent with Maxwell's wave in aether theory and the results of the MMX. One would not, as Einstein did, ditch 3 long standing and apparently sensible axioms of physics unless you considered the theory which required that sacrifice to be impeccable.

It totally ignored the fact that Maxwell's waves do not physically exist.

2 is false. The light-waves of Maxwell DO physically exist. If they didn't, the f in $e = hf$ would be meaningless, thus so would Planck's quantum of energy.

As I have pointed out the light waves of Maxwell totally fail to explain the photoelectric effect. The quanta of light which Planck showed light is generated in was shown by Einstein to arrive at their destination unaltered. At what point do they become waves?

OTOH If a photon has mass and spins as suggested by Waldron then it has a frequency (number of revolutions per sec) and rotational energy proportional to frequency. According to Waldron a photon has rotational energy $m.c.c/2$ and kinetic energy $m.v.v/2$. In the FoR of the source $v = c$ so the energy becomes $m.c^2 = hf$.

3 is true, the [universally stationary] aether in which they were thought to be waves does not exist. BUT a compressible wave-conducting material DOES exist everywhere, including the "elastic spaces" between Maxwell's infinitesimally small "particles" of "aether".

You are stating your personal belief. What basis have you in view of the experimental evidence provided by the photoelectric effect that light waves exist or that they need a medium to be light waves in.

"The great Electromagnetic Theory appears as an analogy of Nature, sometimes as a very useful and accurate analogy, sometimes as a definite failure, but at no time does it seem to afford us a sound conceptual model of the working of the real, physical world." Dr Scott Murray

4, though more true than false, is ambiguous. It is true that the "independent fields which were believed to map altered states in [Maxwell's particulate] aether do not exist because there is no [such discontinuous] aether for them to exist in." In no way, though, does that mean that Maxwell's electric and magnetic fields don't exist in the continuous matter that fills all space, including the spaces inside of and between any particles made of it.

5 is also ambiguous. Independently of the fact that EM theory IS a legitimate branch of physics, and independently of the fact that many of its equations are correct, STR is a false and misleading theory, thus is NOT a legitimate branch of physics.

< Physics was not forced to abandon reason; it chose to because it could not bear to ditch Maxwell's wave in ether theory, and refused to accept that it had been wrong for a couple of centuries in that that Newton's corpuscular theory was in fact correct as least in its basic concept. >

Right thesis, but for the wrong reason.

Having accepted the Lorentz equations (which disagree with Newton's basic theory) our physicists abandoned reason because they also accepted Einstein's theory, even though none of them understood the physical – nor, therefore the mathematical – meanings of those equations, nor, therefore, that the equations contradict the very theory they accepted as true.

< The absurd wave–particle duality fudge prevented a great chunk of dodgy physics from being rightly scrapped and rebuilt on sound lines. [True.] By adopting it, physics avoided the great question as to what the structure of a photon needs to be in order for photons to so convincingly mimic waves. It is in my view the single most important question in Physics and yet current doctrine says that a photon has no internal structure. >

A "frequency" demands and is based on a wave system as part of the internal structure of a quantum of energy

anything which oscillates or rotates has frequency.

$$e_o = (2\pi m_{\text{electron}} c^2) f.$$

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You will have to explain what you mean. This statement means nothing to me

Since no such electron could be part of a
light-wave moving at c ,

I never mentioned electrons

a "photon" is NOT the e_o that radiates
through the luminiferous material that fills space, it is only the
quantity that emits or is absorbed. It is therefore true that
Einstein's photon has no structure while radiating through space;
because something that DOESN'T EXIST during that interval HAS no
structure.

You will have to try and explain that in simple terms.

Having "abandoned reason" current doctrine doesn't even know what
reality_"whateverTHATmeans" IS!

glird

[1] "The Spinning Photon" R A Waldron – Speculations in Science and Technology Vol6 No2 (1983)
p171–181.

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John Kennaugh

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