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Summary of the Problem with Special Relativity (SR)

R.J.Anderton@btinternet.com

Einstein's SR (Special Relativity) is supposed to be based on 2 ideas

1. Principle of Relativity (PR)
2. constancy of lightspeed

The difficulties are as follows:

(a) what precisely do these ideas mean?
(b) are the ideas true?
(c) are these ideas sufficient to form the math of the theory of SR?

The answers seem to be:

Questions (a)-(b) are connected to the ideas (1) – (2) not being clearly explained and being ambiguous and meaning different things to different people.

The answer to (c) is that the ideas (1)-(2) do not seem sufficient to give us the math of SR

(d) does the theory SR agree with experiment?

Answer seems to be "no" SR does not conform to experiment but it's tied to the ambiguity of the ideas

Putting aside (1) for the moment, (2) seems to be the idea that lightspeed is constant for inertial observers (inertial = moving at constant velocity).

Taking (2) as that idea; then (2) is sometimes treated as assumption (or postulate) and sometimes treated as stipulation.

Postulate and stipulation are two different things.

Taking (2) as postulate – means we assume it in theory and check to see if that assumption conforms to what we physically measure.

Taking (2) as stipulation means we adjust our measuring instruments so that (2) is true.

Einstein did it as stipulation, which makes his SR not a scientific theory. Instead of making a claim that can be tested; he says adjust the experiment to make it true.

That is a big mistake by Einstein.

However those who came after Einstein tried to compensate for this mistake and changed it from stipulation to assumption; so that what is taught in texts is that (2) is an assumption. This is contrary to Einstein.

We thus have two versions of SR – (2) as stipulation OR (2) as assumption.
The foundation of SR is the Michelson Morley experiment (MMX), but that has been hidden by Einstein who has not made it clear that his SR is based upon an experiment. Another fault – with Einstein.

Changing Einstein's SR from treating (2) as stipulation to treating it as assumption, would mean that for this SR version to be true, we would expect the MMX give constant lightspeed as observed from its results.

And the MMX does not give lightspeed as constant; instead it gives lightspeed as variable NOT constant.

So the theory of SR fails on (2); lightspeed is not constant.

But instead of MMX's true results being taught as giving lightspeed as variable, it is taught in texts as giving lightspeed as constant.

i.e. false claim made for MMX

This mistake is traced back to Einstein- Einstein made the mistake of thinking the MMX gave a null result, and his mistake is then taught in relativity texts.

i.e. instead of teaching that the MMX gives variable lightspeed, Einstein's mistake is taught!

Einstein's SR fails experiment, but the true result of the experiment gets ignored and Einstein's mistaken belief is taught instead.

This undoubtedly is tied to Einstein's mistake of stipulation versus assumption.

Einstein's SR fails when (2) is treated as an assumption.

But Einstein's SR cannot be proven wrong when treats (2) as stipulation; but at same time is not allowing itself to be tested when it does this and so is no longer a scientific theory.

This confusion of the two types of SR has meant that although the MMX shows variable lightspeed; Einstein's mistake with stipulation has caused those texts to be adjusted to conform to that mistaken belief; and hence the opposite false claim is then made.

Recap – either SR fails to be a scientific theory when it treats (2) as stipulation OR SR fails to conform to experimental evidence when treats (2) as assumption. Both ways – SR fails.

When SR is dealt with (2) as stipulation, it means that the measuring instruments (clocks and rulers) have to be adjusted to give lightspeed as constant in inertial frames (constant velocity fames). The next step Einstein makes is to consider noninertial frames in GR (General Relativity) and for those lightspeed again varies; despite fixing the clocks and rulers in inertial frames to have lightspeed constant, when the frames change under acceleration – lightspeed becomes variable again for noninertial frames.

Now for (1)

Principle of Relativity comes to us by Galileo, and in its simplest form is that – the laws of physics are the same for all inertial frames.

Attempt is then made to have a Principle of Relativity (PR) for noninertial frames etc.

But in Galileo's introduction it is for only inertial frames.

So will consider only the inertial situation.

Einstein got hold of Galileo's inertial PR and modified it; he decided that the constancy of lightspeed (2) was a Law of physics.

So we have Galileo's inertial PR where lightspeed is not constant

and Einstein's inertial PR where lightspeed is constant

In the case of Einstein- he stipulated lightspeed as constant in inertial frames; i.e. he defined lightspeed as constant, he made it a Law of physics, so that his inertial PR absorbed his definition.

In the case of Galileo's inertial PR there was no definition of lightspeed as constant, so it was not introduced as a Law of physics to that PR.

Einstein's inertial PR having lightspeed as constant being a Law then has to adjust time, distance etc to accommodate this Law.

As pointed out – Einstein's SR is wrong by having this stipulation. But there is an issue in physics – if we have these measuring instruments (clocks, rulers) how do we calibrate these instruments so that they all measure the same units of time intervals and distance intervals. i.e. clocks need synchronizing. Einstein's solution to this synchronization issue was – to have the clocks synchronized so that they all agreed on the same speed of light in inertial frames.

Looking at the issue from Galileo's inertial PR – we have a problem with how do we do the clock synchronization. This physics just assumes there is no problem and

assumes the clocks are synchronized. It's working from an idealized situation, where the measuring instruments are idealized and have no problem with calibration.

Physics does work from idealization, if we have an object moving (and the object has volume), we do model this as a point and ignore the volume of the object and just consider the object idealized as a point. There are many idealizations made in physics. And Galileo's physics just deals with idealizations. So that the calibration issue is just not considered- it is idealized away.

We can thus appreciate why Einstein introduced his calibration method – of calibrating clocks in inertial frames so that they have lightspeed as constant.

But that has created many problems.

The Galileo-Newtonian physics was to idealize and treat it as if there was no such problem. From this Galileo-Newtonian physics we just have to struggle with calibration and not treat lightspeed as constant in inertial frames.

We thus have the choice between Newtonian physics where lightspeed is not constant, or Einstein's physics which created a mess with his calibration method.

Newtonian physics is testable and hence scientific theory, but has calibration problem because of its idealization.

Or Einstein's physics (SR) which is not scientific theory and confuses things with its calibration method.

Proceeding now with inertial PR.

According to the inertial PR of Newtonian physics where lightspeed is not constant, there is no absolute rest frame—this has caused many problems with peoples' abilities to understand. Human nature seems to be that – it prefers to think in terms of there must be an absolute frame in which everything moves in relation to. By the Copernican revolution this was shown to be false. Pre-Copernicus, the natural assumption of people was to believe that the earth was stationary and the heavens moved around it; so treating the earth as a frame of absolute rest. After the Copernican revolution it was realised that motion was relative, and the earth was not at absolute rest and instead moved relative to the sun and other objects in the heavens. This should have disposed of the idea of absolute rest. But bad ideas die hard, and the believers in absolute rest when they accepted that the earth was not at absolute rest then moved on to try to find something else as an absolute frame. The inertial PR disposed of the idea that there was one frame at rest, and replaced it with there being lots of inertial frames at relative rest. The issue with Einstein has confused this part of relativity in many peoples' minds and they hanker back to believing in absolute rest, which does not exist. According to inertial PR it is possible to have a common frame of reference – i.e. if lots of people decide to make their measurements relative to just one specific frame, then it's a common frame. This common frame is not an absolute frame, because people can arbitrarily choose any frame; and there is no unique frame

that they must all choose. But there are those who get confused over this issue of common frame and absolute rest – who muddle these issues.

Conclusion

C1. SR with stipulation - lightspeed as constant (inertial frames) – is not a scientific theory

C2. SR with assumption- lightspeed as constant (inertial frames) – fails to agree with experiment

C3. Results (1)-(2) have been hidden by experiments being misrepresented, due to Einstein's mistakes

C4. Principle of Relativity (inertial) survives when removed from Einstein's influence and then returns us to Galilean-Newtonian physics

C5. Human nature issue with difficulty in understanding Principle of Relativity (inertial) leads them to be confused over the absolute rest issue.

C6. SR when corrected for its mistakes turns back into Galilean relativity.

C7. Newtonian physics deals with idealized scenario where assumes clocks and rulers are calibrated

C8. Einstein tried to deal with the practical issue of trying to calibrate clocks and rulers and then made a mess

So the answers to the questions (a)-(d) are:

(a) what precisely do these ideas (1) – (2) mean – Ans: I have dealt with in above article.

(b) are the ideas (1) - (2) true – Ans: it depends, dealt with in above article.

(c) are these ideas sufficient to form the math of the theory of SR--- Ans: no, Einstein made a mess

(d) does the theory SR agree with experiment--- Ans: when SR is modified to becoming a scientific theory (by treating lightspeed as constant (inertial frames) – as assumption) the answer is no; SR requires further modification to return it back to Galilean relativity.

I hope to update with references at a later date.