

Critique on “Why is the speed of light constant?”

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Viktor T. Toth – a software architect and professional software developed decides to write an article explaining “Why is the speed of light constant?”

He starts his article: “Many novel ideas are found on the Internet. One not so novel notion is that Einstein was wrong and that the "lightspeed limit" is really just some international conspiracy of conservative "establishment" scientists. Those who make this point neglect the fact, however, that the deduction about the speed of light is not a result of some exotic assumptions or blind speculation, but a fairly simple consequence of some fundamental assumptions about nature: in other words, if you wish to prove that Einstein was wrong, you have to show that either elementary logic is incorrect, or that some of our basic assumptions about nature are outright false.”

So basically, just need to show Toth is false.

He goes on to talk about Symmetries in Nature:

“To begin, here are our assumptions, some of which are generic in nature, while others are specifically about electricity and magnetism. First, the generic ones:

- Space is homogeneous. The equations of physics work the same in New York and Los Angeles, on Earth or on Mars, in the Milky Way or in the Andromeda Galaxy.
- Space is isotropic. The equations of physics don't change just because you turn around and look in a different direction.
- Space is symmetric under time translation. The equations of physics are the same today as they were yesterday, and as they will be tomorrow.

- Space is symmetric under a "boost". The equations of physics work the same in moving coordinate systems: your pocket watch, computer, or your body for that matter won't cease to function just because you're moving on a train, an airplane, or spacecraft. “

However, if we look to Einstein in his famous paper of 1905 on SR, Einstein only gave two assumptions. Toth is giving a great deal more than just those two. Giving all these extra assumptions is just changing things; what is called moving the goalposts.

We have no way of knowing if what Toth is saying is what Einstein really intended by SR. Toth is not citing Einstein to show where what he believes connects with what Einstein says.

When we go to SR texts we can be bombarded with different people's views of what SR is. i.e. no consistency in everyone claiming the same thing. Like Einstein they just keep moving the goalposts, but they don't all move the goalposts in the same way.

Anyway, if we accept there is a math model where considering scenario when light speed constant (in vacuum), we can easily extend such a model and get back to variable lightspeed etc.

Reference

[1] <http://www.vttoth.com/LIGHT/light.htm>

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Typo corrections: 9 Oct 2018