

# **Light more light less darkness**

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## **Abstract**

Some of my views on nature and propagation of electromagnetic waves and light, that is radically different from the already established views of Science. The paper was written because I believe that its views will be quite useful in the progress and future development of Theoretical Physics and Cosmology.

## **Introduction**

In this paper I describe some of my views on the nature and propagation of electromagnetic waves and light. The views I describe differ radically from the already established views of Theoretical Physics and Cosmology. This is why I advise those who are satisfied with the existing views, not to read the work, because if they have the feeling that the existing positions of science are correct, a simple reading of the work will not add anything worthwhile and will probably confuse them.

However, in case you are not satisfied with the existing data of science, on the nature and propagation of electromagnetic waves and light and you want to supplement your knowledge, please read the paper *–only, a little carefully–* and I believe, you will find it, quite interesting.

Concluding this short introduction, I would like to point out that, the work was not written to study the details of the nature and propagation of electromagnetic waves and light, something would take several volumes to complete, but was written to highlight that there is a big difference in opinions of some points, between the author *–who thinks he has the right views–* and the data of science. However, if you find it interesting, study it carefully, correct it, improve it, support and spread it. It will be one of the greatest services you could offer in Theoretical Physics and Cosmology, which today, due to the many questionable views that have accumulated are facing serious problems and need some renewal.

## **1. What are photons; Waves or particles?**

Today, Theoretical Physics accepts that electromagnetic waves, and therefore light, which also belongs to the category of electromagnetic waves, propagate by exchanging photons between material bodies.

Photons, produced by the motion of electromagnetic charges, sometimes behave like particles –photoelectric effect– and sometimes like waves –diffraction, contribution, super-imposition–. To explain this phenomenon, Theoretical Physics accepts that photons have a dual existence and are sometimes particles and sometimes waves –wave-particle dualism–. But this explanation that photons are sometimes particles and sometimes waves is an absurd and unproven explanation that goes beyond the limits of the real and logical function of nature, since in nature it is not possible for the same entity to be presented in two different forms, sometimes as a particle and sometimes as a wave.

The correct answer to the question, whether photons are particles or waves, is that indeed, photons are produced by the motion of electromagnetic charges. However, they are *neither particles no waves*, they are *simple intangible linear interactions* [1], which, depending on the way the electromagnetic charges that produce them move, behave, *sometimes as particles and sometimes as waves*.

## **2 The propagation of electromagnetic waves and the ether**

Electromagnetic waves are transverse oscillations that propagate through space at the speed of light. In the past, scientists believed that because electromagnetic waves are transverse oscillations, there must be a medium through which they could propagate. This medium had to fill all the empty space and was named ether.

Many attempts were made to discover the ether, among which the Michelson-Morley experiment –1887– stands out. But the Michelson-Morley experiment, instead of discovering the existence of the ether, proved the opposite that the ether does not exist, so things got so tangled and confused that science is still trying to explain what exactly is going on. Are electromagnetic waves and light really transverse oscillations? and how are these like transverse oscillations propagating in the empty space? There are many scientists who even today believe in the existence of the ether.

The correct and definitive answer to the question of the existence or not of the ether can be given, if we accept the proposition of the above section (1) that is, that the electromagnetic waves are straight simple intangible interactions and not transverse oscillations, so in this case, no ether, or any other material means is needed to propagate them. Thus we can say that the Michelson-Morley experiment is the experimental proof of the *non-existence of ether*, and the simple linear intangible propagation of the electromagnetic interaction is the theoretical proof of its *non-existence*, since in this case it is not necessary its existence.

## **3 The Axiom of the constant speed of light, –of the Special Theory of Relativity–**

The Axiom of the constant speed of light, (of the special theory of relativity) tells us that:

- ✓ *The speed of light in vacuum is the same "c" for all inertial reference systems and for all observers and*

✓ *It is independent of the motion of the light source that produces it.*

Although as we will see, the axiom is wrong, the positions of the axiom were established as *de facto* rules of Theoretical Physics and Cosmology, without ever examining whether these positions are right or wrong. It seems that the mere fact that these positions were formulated by Einstein was enough.

The first part of the axiom that the speed of light in vacuum is the same for all inertial reference systems and for all observers is half-wrong because, “yes” the assumption that the speed of light is the same for all inertial reference systems, is absolutely correct, but the assumption that this speed is the same for all observers, is wrong because it violates the “law of superimposition”!!!, an unchangeable law of physics, mathematics and geometry.

The second part of the axiom that the speed of light is independent of the motion of the light source that produces it, is absolutely correct, but Einstein's explanation that the speed of light is independent of the motion of the light source that produces it, is done because the light does not obey the law of superimposition!!!, is again wrong as in this case the law of superimposition is violated again. Maybe Einstein made this wrong statement, in order to support the first wrong part of the axiom by repeating the same mistake for a second time.

After analyzes of the above two paragraphs, we observe that the axiom of the constant speed of light is indeed wrong and that, the light completely obeys the inviolable law of superimposition and there is no other different choice. A stationary observer for a ray of light propagating in a space moving at velocity  $v$  with respect to the observer will not measure the velocity of light  $c$  as incorrectly accepts the above axiom of constant velocity of light, *but will measure velocity  $c + v$  [2]*. As for the second position of the axiom that the speed of light is independent of the movement of the light source that produces it, because light does not obey the principle of superimposition!!! The correct answer is that *the speed of light is indeed independent of the motion of the light source that produces it, but not because light does not obey the principle of superimposition, which is not possible, but because light is merely intangible, interaction and not material particles.*

#### **4. What is the relationship between the axiom of the constant speed of light and the Michelson-Morley experiment?**

In order to establish an experimental support for the false axiom of the constant speed of light, as described in the previous section, Einstein again erroneously claimed that the Michelson-Morley experiment verified the axiom. But the axiom of the constant speed of light is based on the propagation of light and the observers being in different inertial spaces, while the Michelson-Morley experiment was done in a single inertial space, the inertial space of the Earth, with the propagation of light. and observers are in the same inertial space.

My view is that, as can clearly see from the analysis of the above paragraph, *the erroneous axiom of the constant speed of light and the Michelson-Morley experiment,*

*have nothing to do with each other.* Unfortunately till to date, no one scientist, has noticed this simple but so essential detail.

### **Conclusion**

These, in general, are some of my thoughts on the nature and propagation of electromagnetic waves and light. It is remarkable that the views I describe above do not need any new proposal or new experiments to be confirmed, as they are fully adapted to all the already existing theoretical and experimental data. As long as these positions are not ignored, but read and studied carefully.

### **And a question**

Concluding the work, I have to add a question; how is it possible for an entire scientific community with its hundreds of thousands of scientists, for a period of more than a century, not observed, investigated or clarified, nor one of the above wrong views?

### **Footnotes**

[1] According to the “Chain Reaction Theory” [4], between the elementary particles “pointons” and “antipointons”, a simple intangible linear interaction is created, which creates the electromagnetic force. This interaction is the only interaction in the Universe and is created without the intervention of particles. From this intangible interaction are created all the other interactions [3].

[2] If for the velocity  $c'$  measured by the stationary observer we use the formula  $c' = c + v$  and not the formula  $c' = c$  that Einstein incorrectly used, our calculations will result in conventional results and not the results of the special theory of relativity calculations.

### **References**

[3] V. Talios, «*A Modern Theory of Everything*», Laplambert Academic Publishing –2021–.

[4] V. Talios, «*From Elementary Particles to the Limits of the Infinite Cosmos*», Nova Science Publishers, Inc, –2020–.