

What is light?

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Abstract

We introduce a new definition of light

Keywords

Light, definition of light, the theoretical physics, , photon, speed of light, neutrinos, electrons, electromagnetic waves, the photoelectric effect, acceleration, **Newton**, [1] **Lorentz** [2] Transformation equation for the fourth dimension, Solitary waves, **Maxwell's** [3] equations, **Max Planck**, [4] Equations **Einstein's** [5] equations for photoelectricity and **M. Helmy Said**, [6], Transformation equations for the fifth dimension, [7] Infinity theory for the Fifth Dimension.

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I. Introduction

I am sure that if we ask natural scientists:

Do we have an accurate definition of light?

Without exception they will unanimously say: "Yes".

And that is one of the major dilemmas in the theoretical physics. When we put a definition and it is not accurate or complete and another scientist comes with a more general and integrated definition, then they deny it for a long time before accepting the new definition. That is the problem of definitions and not a problem of laws because laws come after the definitions mostly.

But when we put these current definitions of light under the microscope of research and investigation, we will find things that do not correspond to the reality of them.

1- How can a photon have no mass and still travel at the speed of light?

And if it has a mass, does this contradict with the transformation equation for the fourth dimension,,,,, (**Lorentz**).

2- How can a neutrino travel at the speed of light or faster than it, with a mass of 1/1000000 of the mass of an electron?

3- How could the electromagnetic waves move at the speed of light when they carry electrons! They do not have the same component as light in the current definition.

4- In the transformation equations for the fifth dimension, we find a special case that the speed of particles is equal to the speed of light, so why is that? What can we deduce from that equation? [6]

I do not need to refute the error of all previous definitions of light because my definition will set you on the path to understand the error of those who preceded me.

What is light in the current definition? What is the greatest amount of information that science has reached?

Newton believed in the eighteenth century that the light is a large group of very small bodies known as the particle model of light. He did not know anything about the nature of these particles and then in the nineteenth century it became clear that the light is electromagnetic waves. It consists of two perpendicular, oscillating electric and magnetic fields and it moves at the speed of light (**Maxwell's**). But the wave theory could not explain all the phenomena and experiments that were conducted on light at the end of the nineteenth century. **Max Planck** was able to explain the emission of radiation from hot bodies and to assume there is particle image of radiation and he called it the particle of light or Electromagnetic radiation (Photon). He concluded that light contains from the wave and particle, as he showed that the energy of the photon is proportional to the frequency of the electromagnetic wave. The constant of proportionality was defined later as Planck's constant, ($E=hf$). Now light is considered as dual as it is a wave at the time and a particle at other time.

Here, I see no justification for listing all the definitions of light from the Greeks in the fifth century BC, through Huygens, Maxwell, Faraday, Newton, Max Planck, Einstein and quantum theory as well. Because I am not applying for a doctorate, but it is a new topic. I have no objection to what has been proven by experience and scientific evidence in the phenomena of light such as reflection, refraction, scattering, interference, polarization, emission, absorption, the photoelectric phenomenon and Iceland Crystal. It can only be shown that all the laws that hold light rays, that is, the laws of above are also true for thermal rays

Content

Q: Why do photons move at all? In other words, why do photons move away from their source?

This is a question that looks at the basic principles of modern physics.

I can give a straightforward answer based on solving Maxwell's equation in vacuum with some quantum sauce added. But that wouldn't really explain why on a basic level you see this question hit the core of what modern physics is about.

James Clerk Maxwell

came up with his bold hypothesis that light was electromagnetic. His theory of electricity led him to the conclusion that every electrical disturbance travel from its source through space in waves at a speed of 300,000 Km/sec, and this figure taken from purely electrical measurements coincides with the amount of speed of light that prompts him to regard the light as an electromagnetic disturbance.

The only evidence for the validity of this view lies in the fact that all inferences drawn from it are in agreement with observation. The principal advance associated with his proposal lies in the enormous simplification of the theory and in the number of conclusions that can be drawn immediately from it.

Einstein's equations for photoelectric effects

Einstein created a set of equations for the photoelectric effect, which he included in his research papers. First, Einstein found that the energy of a photon is equal to the energy needed to liberate the electron plus the kinetic energy of the emitted electron.

$$h \cdot \nu = W + E$$

- h : It is Planck's constant.
- ν : is the frequency of the photon.
- W : work done and represents the minimum energy required to liberate an electron from the surface of the metal.
- E : is the maximum kinetic energy of the electron. The kinetic energy of an electron is given by:
 $E = \frac{1}{2} m v^2$
- m : represents the mass of the liberated electron.
- v : is the speed of this electron.

Max Planck equations

$$E = h \cdot \nu \quad E = h \cdot \frac{c}{\lambda}$$

I've seen this misinterpretation of photons so often.

As we know from the laws of physics and Max Planck specifically, the difference between the energies of light is only the wavelength.

The study of hypothesis and its results

I want to give new definition of light which is:

Solitary waves, waves that maintain their shape and speed while propagating with constant velocity (they are ubiquitous in nature and have many applications in nonlinear dynamics), have existed since the Big Bang and they fill all parts of the universe.

There is no particle that moves by itself to reach the speed of light, but at the same time there are elementary particles that can ride the wave of light. Each particle likes a certain vibration, and it finds it, like a machine that sorts the fruits or potatoes in terms of their sizes.

Thereby we can explain the different colors of light and all radiations, such as alpha, beta, gamma, X ray and others. Each has its own mission and function in influencing the natural phenomena in the universe.



Figure No. 1

For example: When the feather moves from the center of the wave in the previous image, it floats on the surface of the water at the speed of the wave. Can we say that the feather has speed?

Or do we say that the feather does not move, but rather floats at the speed of the wave?

And if we made this wave, and in the middle, there was a piece of wood and a leaf and an ostrich feather. Will they all exit the center at the same speed and without the need for self-energy?

Thus, we can eliminate doubts about:

- 1- Why does light have no acceleration?
- 2- Why are the shadows not equal in the presence of more than one source of light?
- 3- Why do masses of particles traveling at the speed of light and not follow the transformation equation for the fourth dimension?
- 4- Why does light excite the electrons of the metallic surface?
- 5- Why does light bend in the presence of a big mass? If a photon is massless, why it bends to an object with a big mass?
- 6- Why do bodies not need strength to swim with the sustained wave?

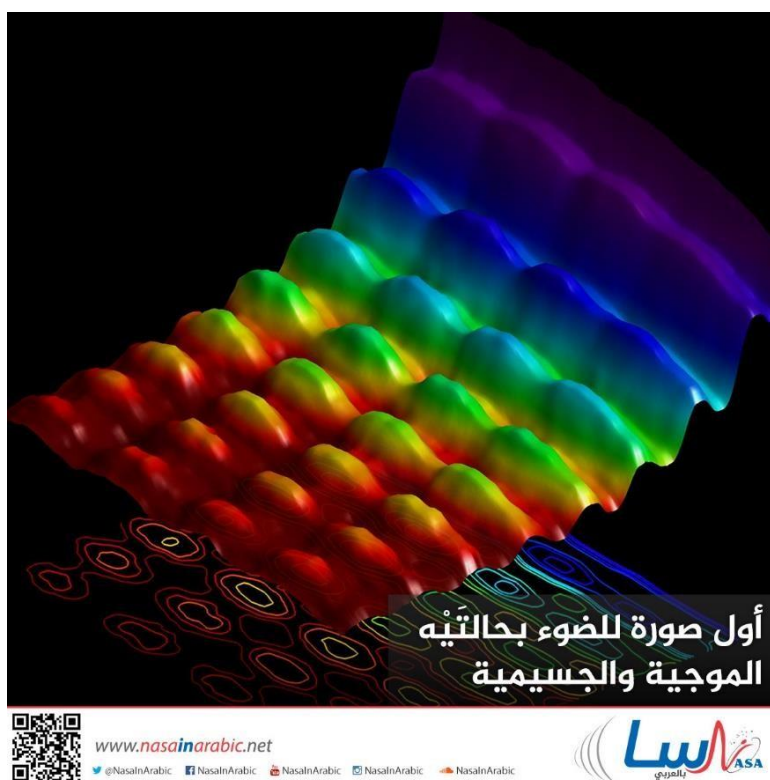
I believe that the universe or universes are the focus of the study of theoretical physics. Accordingly, I say that there are vibrations that are Solitary waves, and do not fade away. And these vibrations at the highest point of the pyramid are the speed of Anoor (replacing Ether in the old term) = $9 * 10^{12}$ km / s, then a speed specific to each of the seven universes (see my published paper {7}), then the speed of light = 300,000 km / s, the speed of separation = 212132 km

/ s (the speed of light divided by the square root of 2), then the speed of sound, and from here we can say that the Ether that carries all frequencies and subatomic objects is the speed of Anoor and it is the top of the pyramid = $9 * 10^{12}$ km/sec.

The most important requirement for a scientific theory is consistency Each movement system has a different objective time.

II. Conclusions

From the foregoing, I can say that with this new definition of light, we will get rid of a large and accumulated legacy of misunderstandings that do not contradict experimental results in the light of previous definitions. Thus, we close the door to many naive questions in physics that create confusion more than finding correct concepts about a phenomenon that is one of the most important natural phenomena in the universe.



Figuer No. 2

The first image of light in its wave and particle states.

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