The Structure of a Photon

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A model proposed for light, assuming photons are neither an elementary particle nor a wave. A photon is built up of four fundamental particles: two of different gravity particles, A and B, and two kinds of electric charge particles, positive and negative. The yin-yang symbol seems to be quite deep meaning, and strange though it may appear a key to understanding the function of the material world [1].

1. Introduction

The photon particle has structure; this structure can be seen when the photon hits a dense atomic nucleus and the photon itself splits into an electron and a positron. Thus, the photon carries positive and negative elementary units of charge. The yin-yang symbol helps to understand the structure of the photon (Fig. 1), moreover also the torus structure of the electron, proton and the atomic nucleus [2].

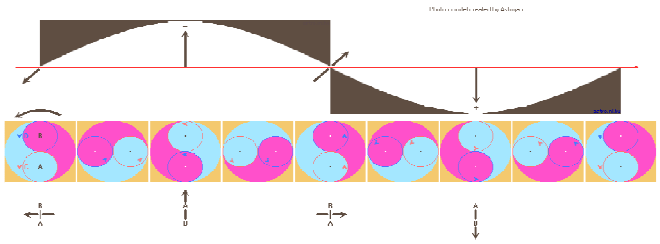

Fig. 1 The yin-yang model of the photon, transversal sections along the wavelength

The wave property of the photon is the consequence of the fact that the four fundamental particles orbit and rotate around each other. The photon is not a wave, but a composite particle. The trajectory of the moving photon particles creates the wave property of the photon.

2. The Photon Model

First of all, let me postulate four fundamental particles, building up all matter in the Universe: two graviton particles, A and B, and two electric charge particles, positive and negative. Electrically charged particles contain them, e.g. an electron contains a negative electric charge particle and a graviton A, and a proton contains a positive charge particle and a graviton B.

These four fundamental particles have no mass. The mass manifests only when a massless photon stops, and splits into an electron and a positron appearing as electron and positron torus.

A graviton is a dual energy particle, consisting of two identical particles, graviton A and graviton B, that differ only by their orientation or rotational direction and sign of spin. Graviton pairs spread absolutely straight unlike photons which bend beside mass, for example a black hole. It is **not the space that bends**, since space does not exist physically. Space is a mathematical construction but not matter.

The velocity of a graviton is greatly in excess of the speed of light; the order of magnitude is estimated at least 5 or 6 times higher, although Milewsky suggests that the speed of his superlight is about 10 billion times greater than the speed of light [3].

If the graviton pair binds a pair of electric charge particles, the graviton becomes photon, and its speed **decelerates** to the speed of light.

Kopeikin [4] tried to determine the speed of gravity, but since he measured the speed of gravity by light, the results of his study could have been misleading. Since the velocity of gravity is supposed to be much greater than the speed of light, it can not be reliably measured by light, similarly as if the speed of light were to be measured by the assistance of sound. Using the sound as a tool for the measurement of the velocity of light, only the speed of sound could have been erroneously detected instead of the speed of the light.

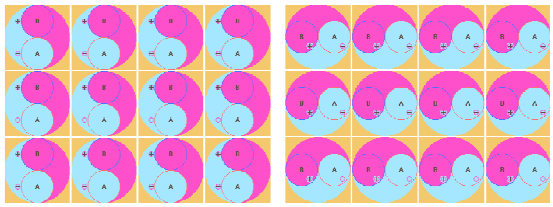

Fig. 2 Crystalline structure of a laser beam. Photons connect each other by electrical charges vertically (a) and after a synchronised rotation of a quarter, the connection becomes horizontal (b) stabilizing intermittently the photon crystal of laser beam.

Laser beams form as a consequence of the inherited electric charges of the photons (Fig. 2) [1]. Charges stabilize structures because the opposite charges always come closer than the adjacent identical ones.

3. Conclusion

The yin-yang structure of the photon provides explanation how a laser beam can be formed, why it is monochromatic, and why all the photons in the beam are coherently in the same phase [1]. The model explains:

1. the mechanism of the intermittent changes of the magnetic and electrostatic properties of the photon.
2. the simultaneous particle and wave properties of light.
3. how "normal" matter emerges by the split of the photon.

The ancient yin-yang symbol helps to understand how the Universe functions and builds up.

References

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[4] S. M. Kopeikin, E. B. Fomalont, "Aberration and the Fundamental Speed of Gravity in the Jovian Deflection Experiment", *Found. Phys.* **36**: 1244-1285 (2006).