A new explanation for the color variety of photons

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Abstract

This new explanation is based on *Wave-Particle Duality* and *Newtonian Laws* and represents a unique definition of a three-dimensional motion for the photon, whose dual behavior is partly explained by the *double-slit experiment* of Thomas Young , who represents the photon's motion as a wave, and by the *Photoelectric effect*, in which the photon is considered as a particle. However, for scientists, the photon's true motion is unclear.

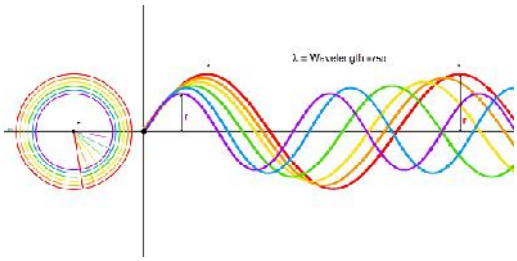
Introduction

We define a new type of motion for photons to solve both this ambiguity and the difficulty of presenting a three-dimensional trajectory for the photon's motion, and present a new formula to calculate its energy. In addition, because we believe in the helical motion of photons, where r is the gyroradius, we believe that their color is an effect of the order of magnitude of *r*. We present real examples that prove our energy formula.

According to the Planck and Einstein energy formula $E= h\nu = mc^2$the red spectrum has less energy than violet one. Moreover, how can a spectrum with low energy (red spectrum) traverse a greater distance than a violet one with high energy?

Conclusions

Guided by this Theory, we can establish a complete three-dimensional vision of the photon's motion, which is justified by Wave–Particle Duality and Newtonian Laws. This vision explains how the variety of light spectra are due to different gyroradius of photon during its trajectory around an imaginary axis



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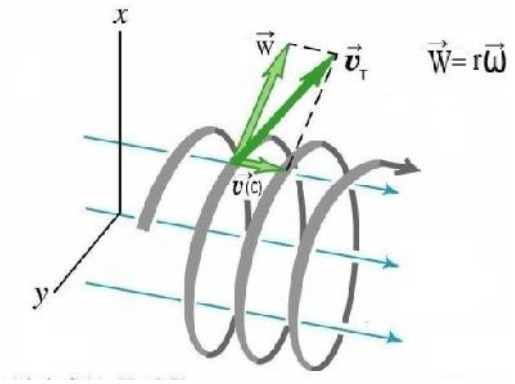

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