

THE COULOMB FIELD AS THE BASIC PARTICLE OF THE UNIVERSE

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INTRODUCTION

I have had reason to have a closer look at my theory --- and as a result, have come up with a great clarification that constitutes a breakthrough. I present it here. If one wants more information they can get it from the original theory, On the Quantum as a Physical Entity, at <http://www.wbabin.net> -- go to LIST OF AUTHORS and click on Vertner Vergon.

What follows here is for the intelligent reader open to new ideas.

THE COULOMB FIELD AS THE BASIC PARTICLE OF THE UNIVERSE

Thanks to Coulomb, we have measurable electrostatic and magnetic fields that stand alone. That is, when they are not in motion.

Given motion, the two fields form a union - orthogonally to each other - which we call an electromagnetic field (e.m. for short). Nieto & Goldhaber, experimenters (among others), determined the approximate mass of these fields. (See Scientific American, May, 1976, The Mass of the Photon, by Nieto & Goldhaber) . As their experiment progressed over time, they refined their technique such that the result became progressively smaller - and eventually approached very close to the figure given here. There were anomalies of the curve caused by their examining other fields than the coulomb fields. These should be ignored.

When in motion, we classify the e.m. fields as radiation. And we establish that radiation has mass. A single minimum e.m. field consists of one electrostatic and one magnetic field. Its mass is $7.3720385 \times 10^{-48}$ gram. How this was arrived at will now be discussed.

This mass $\times c^2 = 6.62566 \times 10^{-27}$ erg (on the cgs scale).

Where $f=1$, $hf = 6.62566 \times 10^{-27}$ erg also.

A DISCUSSION OF h

$h = 6.62566 \times 10^{-34}$ joule-second (mKgs scale) or

$h = 6.62566 \times 10^{-27}$ erg-second (cgs sale).

1 joule = 6.2415×10^{18} eV

h = a fraction of that:

$$6.62566 \times 10^{-34} \times 6.2415 \times 10^{18} = 4.135406 \times 10^{-15} \text{ eV} =$$

$$4.135406 \times 10^{-21} \text{ MeV and}$$

$$4.135406 \times 10^{-21} \text{ MeV} \times \text{the conversion factor } (5.6098576 \times 10^{26}) =$$

$$7.371677 \times 10^{-48} \text{ gram.}$$

So we see that the mass of h is the same as the mass of the single minimum e.m. field. We also see that this common mass $\times c^2 = 6.63566 \times 10^{-27}$ erg. The correct common mass is $7.3720385 \times 10^{-48}$ gr and shall be used throughout. This mass times $c^2 = 6.625661 \times 10^{-27}$ erg, times one sec = h.

Since $hf = E$ of the photon, we note that the mass of the minimum single e.m. field times the square of its velocity (c) is also its E. And this energy times 1 second is a unit of action = to h. Thus we can say that a minimum single e.m. field traveling at c is equivalent to h --- or conversely, h is equivalent to a minimum single e.m. field traveling at c. In both cases $E = 6.62566 \times 10^{-27}$ erg - and an erg second is h.

EXAMINING THE COMMON MASS

The mass common to both h and the single e.m. field shall henceforward be denoted as m_q for convenience.

$m_q * c = p$, the basic, smallest momentum of the universe.

$m_q * c^2 = E$, the basic, smallest unit of energy in the universe.

(where n is the frequency number or coefficient of f)

$m_q n =$ mass of the photon where f is that of the photon.

Where f is that of the electron, proton or neutron

$m_q n$ is the mass of the respective particles.

The reason for this is clear:

The minimum e.m. field not only comprises the photon, it also comprises the electron, proton, and neutron, i.e., matter. We also note that the minimum single e.m. field is the single oscillation of radiation and matter. Thus the number of oscillations times m_q gives the mass of any particle (regarding the photon as a particle).

WAVE/PARTICLE DUALITY.

We see that since the base e.m. field is the constituent of radiation and matter, -- and the nature of the e.m. field is waves, then we see the why of the dual nature of radiation and matter - and why one can be converted to the other.

As radiation, the e.m. fields are in a tandem mode. When a photon of sufficient energy/density strikes a backstop, the tandem mode collapses into a concentric mode and becomes an electron and a positron, All matter consists of minimum e.m. fields in a concentric mode.

Since, in pair production, a photon converts into an electron and positron, we conclude, therefore, that radiation consists of matter and antimatter in radiation form.

We also conclude this is a matter of spin --- 50% right hand, 50% left hand. That is why radiation has no charge. As to the 50%, recall that a long penny toss results in a 50/50 heads/tails. So the 50% left hand and 50% right hand spin is a matter of random.

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