New Discoveries in Quantum and the Theory of Everything (2025)

a) A Simple Explanation of Quantum Theory in the Universe

b) A New Equation for the Theory of Everything Using the Concept of Quantum

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a) A Simple Explanation of Quantum Theory in the Universe

In ancient times, people believed that the materials of the world consisted of four things: earth, water, fire, and air. Over time, and with the advancement of science, it was discovered that these four components could also be divided into smaller parts (molecules and atoms). According to the classical definition, an atom is the smallest unit of a substance. Later, atoms were further subdivided into smaller components, each with a distinct structure: electrons, protons, and neutrons.

Now, if we aim to define the true and classical concept of quantum, it is the smallest packet of energy. One of the most fitting descriptions of this energy packet is that it is the smallest, lightest, and fastest entity, known as a photon—an entirely appropriate choice. The photon exists everywhere, is abundant, and is essential for life. In fact, the photon is the best and most comprehensive candidate for a quantum packet, as its speed and mass are constant, making it the ideal choice for defining a unit of energy.

Since we want to define a fixed base unit for the quantum quantity, the most appropriate choice would be the constant mass of the photon multiplied by the square of its constant speed. It should be noted, as demonstrated in earlier articles, that the true speed of a photon is $3.3\ C$ [1, 2]. Thus, the relationships can be expressed as follows:

$$E_Q = \frac{1}{2}m_p(3.3\ C)^2$$

$$E_Q = \frac{1}{2}(1.64 \times 10^{-36})(3.3 \times 3 \times 10^8)^2$$

$$E_Q = s_Q = 8 \times 10^{-19}\ J$$

Where s_Q is the unite of quantum energy unite.

The above statements and formula accurately represent true quantum energy. However, as photons exhibit both linear and rotational motions—characterized by their intrinsic helical motion—the experimentally calculated energy will be as follows that represents the linear quantum translational energy:

$$E_Q = hf = s_Q i$$

Where h is the Planck's constant, f is the frequency and i is a variable coefficient.

Note:

According to experiments conducted at MIT and the University of Michigan, which measured energy at short distances, it was observed that Planck's equation is violated. Thus, it can be stated that the measured energy is equivalent to: $E_Q = s_Q$

b) A New Equation for the Theory of Everything Using the Concept of Quantum

With this simple and clear definition of quantum, which we regard as the foundation of all energies in the universe, its formula can be applied to all forms of energy. Now, quantum can be utilized to provide a comprehensive, efficient, and practical definition for theory of everything. Based on this, the following relationships can be formulated:

$$E_Q = s_Q = 8 \times 10^{-19} J$$

$$E_{et} = s\, a$$

For each kind of energy, we could calculate the a:

$$a = \frac{different\ kind\ of\ Energy}{s}$$

For instance, for current electric energy, we could say the energy is equal to the energy of n electron with the mass m_e that move with speed of v:

$$E = I^2 Rt = n\left(\frac{1}{2} m_e v^2\right) = s\, a$$

$$a_e = \frac{I^2 Rt}{s}$$

Or for kinetic energy of earth because of its rotation around sun:

$$a_k = \frac{\frac{1}{2} m_E v^2}{s} = \frac{n\frac{1}{2} m_p v^2}{s}$$

Where m_E is the mass of Earth, v is its speed and m_p is the mass of photon.

Therefore, all energy in the universe could be formulated in one relation:

$$E_{et} = s\, a$$

$$s = 8 \times 10^{-19} J$$

References:

[1] Saleh, Gh. "New Discoveries About the Speed of Electromagnetic Waves 2024 Part C" Saleh Theory, 06 Nov. 2023, https://www.saleh-theory.com/article/new-discoveries-about-the-speed-of-electromagnetic-waves-2024-part-c

[2] Saleh, Gh. "A New Calculation of the Speed of Objects in Nested Paths in the Universe." *APS April Meeting Abstracts*. Vol. 2024. 2024.