

Gaussian Surface of a Photon

186-ether is bounded by a photon surface

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Elementary charge, q is 186-ether bounded by a photon surface. The photon surface has a mass which conserves its intrinsic elementary charge, q by obeying the charge squared formula. The electric field, E is calculated and related to the photon's surface charge density, σ . The charge density, σ is then related to the surface area of the photon, proton and 186-ether.

Consider Gauss' Law to determine an electric field, E within a photon body.

$$E = \frac{\sigma}{\epsilon_0} = \frac{F}{q}$$

Rearrange in terms of surface charge density,

$$\sigma = \frac{\epsilon_0 \times F}{q}$$

Proof

For an electron $\sigma = \frac{\epsilon_0 \times F}{q}$

$$\sigma = \frac{\epsilon_0 \times F}{q} = \frac{8.854187818 \times 10^{-12} \times 29.05350661}{1.60217653 \times 10^{-19}} C/m^2$$

$$\sigma = 1.605598381 \times 10^9 C/m^2$$

The force of an electron is derived in *ref. 1*.

Surface charge density, as the name implies is a charge, q bounded by a photon with surface area, A .

$$\sigma = \frac{q}{A} \quad \text{or} \quad A = \frac{q}{\sigma}$$

$$A = \frac{q}{\sigma} = \frac{1.60217653 \times 10^{-19}}{1.605598381 \times 10^9} = 9.978688 \times 10^{-29} m^2$$

Consider the surface of an electron sphere,

$$A = 4\pi \times r^2 = 4\pi \times (2.817940325 \times 10^{-15})^2 m^2$$

$$A = 9.978688 \times 10^{-29} m^2$$

Thus, $\sigma = \frac{q}{4\pi \times r^2}$ is proof of Gauss' law.

For 186-photon

$$\sigma = \frac{\epsilon_0 \times F}{q}$$

$$\sigma = \frac{8.854187818 \times 10^{-12} \times 1.210273708 \times 10^{44}}{1.60217653 \times 10^{-19}} C/m^2$$

$$\sigma = 6.688395767 \times 10^{51} C/m^2$$

The force of 186-photon/ether is derived in *ref. 1*.

Surface charge density, as the name implies is a charge, q bounded by a photon with surface area, A .

$$\sigma = \frac{q}{A} \quad \text{or} \quad A = \frac{q}{\sigma}$$

$$A = \frac{q}{\sigma} = \frac{1.60217653 \times 10^{-19}}{6.688395767 \times 10^{51}} = 2.395457126 \times 10^{-71} m^2$$

Consider the surface of a 186-photon,

$$A = 4\pi \times r^2 = 4\pi \times (1.380668031 \times 10^{-36})^2 m^2$$

$$A = 2.395457126 \times 10^{-71} m^2$$

Thus, $\sigma = \frac{q}{4\pi \times r^2}$ is proof of Gauss' law.

For a proton

$$\sigma = \frac{\epsilon_0 \times F}{q} = \frac{8.854187818 \times 10^{-12} \times 9.79526966 \times 10^7}{1.60217653 \times 10^{-19}} C/m^2$$

$$\sigma = 5.413208573 \times 10^{15} C/m^2$$

The force of a proton is derived in *ref. 1,2*.

Surface charge density, as the name implies is a charge, q bounded by a photon with surface area, A .

$$\sigma = \frac{q}{A} \quad \text{or} \quad A = \frac{q}{\sigma}$$

$$A = \frac{q}{\sigma} = \frac{1.60217653 \times 10^{-19}}{5.413208573 \times 10^{15}} = 2.959753921 \times 10^{-35} m^2$$

Consider the surface of a proton,

$$A = 4\pi \times r^2 = 4\pi \times (1.534697799 \times 10^{-18})^2 m^2$$

$$A = 2.959753921 \times 10^{-35} m^2$$

Thus, $\sigma = \frac{q}{4\pi \times r^2}$ is proof of Gauss' law in terms of an electron, 186-ether and a proton.

Interpretation of charge density, σ

$$\sigma = \frac{q}{4\pi \times r^2}$$

Elementary charge, q is the charge of an electron or photon or a proton. Here, charge, q also represents 186-ether. {ref. 2} There are two charges of equal magnitude, q . One is the 186-ether and the other is the photon, electron or proton scaffolding.

The 186-ether is contained or bounded by the radial parameters, r of an electron or proton or photon or 186-photon. In the case of a 186-photon there will be a twin mass or two body mass as discussed in ref. 1, Part 1. In other words, the electric field, E is caused by the 186-ether which creates a force, F on the electron, photon or proton. The force, F causes a reaction force equal and opposite in magnitude in the electron, photon or proton surface mass. {ref. 2}

Another way of expressing 186-ether is by the term oxidation state. {ref. 3} The radial parameters of a photon cluster, about 186-seed ether, determines the charge density of that entity be it a proton or oxide ion or electron.

Note that the surface area of a sphere appears in the charge density equation. This does not imply that the shape of a proton or electron or photon is a sphere. All it says is that the surface area of the photon or electron or proton or 186-photon has a surface area equal to $4\pi \times r^2$ where r represents the radial parameter of the photon or electron or proton or the 186-photon.

For example, $4\pi \times r^2$ the surface area of a sphere can be reformulated as that of a

cylinder, $2\pi \times r \times 2r$ where $2r$ is the height of the cylinder. Join the ends of the open ended cylinder and create a torus. So, there are many theoretical possibilities. These probabilities of shapes increase when the 137 factor comes into play under photoelectric conversions. {ref. 1}

The next step towards reality- would be to manufacture model/shapes that create experimental data similar to data from polarization, double slit fringe experiments, and Doppler studies.

Significance

It is of vital importance to know the shape and dimensions that describe a photon or proton or 186-ether. An electron is a type of photon as discussed in ref. 1. This knowledge can lead scientists to construct an energy making device that is renewable and free.

That is why this paper focuses on the application of Gauss' law to determine surface charge density and electric field, E for a proton, electron and 186-ether.

What is clear is that the radial parameter, r is central to the construction of a free energy device. This parameter, r also determines the photon mass or photon cluster mass around the 186-ether seed. The charge squared formula is the condition that dictates photon mass to radius ratios as elementary charge, q is always conserved.

Success in the construction of photon model would need the application of Gauss' law, the parameters that describe a photon {ref. 4}, nanotechnology, computer animation and data from experiments done on the nature of light.

Eventually, a renewable energy device will be manufactured based on the work of Coulomb, Priestly, Faraday, Gauss, Ampere, Volta, Ohm, de Broglie, Planck et. al.

References

- [1] F.V. Fernandes, *Photo-Electric Conversions*, Parts 1-8
- [2] F. V. Fernandes, *Unification of Gravity with Electro-Magnetic Phenomena: GEM*
- [3] F. V. Fernandes, *Faraday's equation*
- [4] F. V. Fernandes, *Quantum of energy - A Photon*