

Permanent and Variable Constants of the Living Universe

Changing Constants

Circlon constant = θ

Bohr Radius = a_0

Mass length of Hydrogen = H_M/a_0

Electron/Proton size and mass ratio = E/P

Electron/Proton charge energy = $i_e E$

Classical electron radius = r_e

Fine Structure Constant = $\alpha = \theta^2$

True Constants

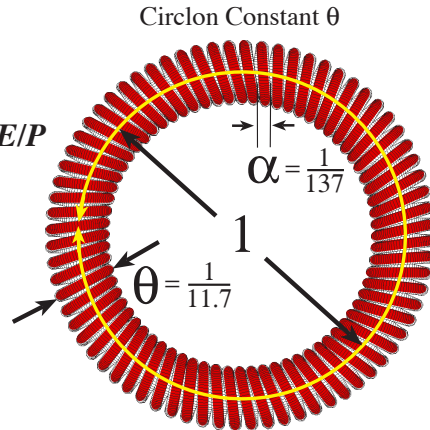
Speed of Photons = C_0

Planck's Constant $h = \lambda M C$

Photon Mass-Length Constant = $Y = \lambda M$

Photon Angular Momentum = $Y C / 2\pi$

Dimensional Constant of Matter = θa_0



These twelve constants govern the mechanics of how the hydrogen atom emits and absorbs photons. The first seven of these are not true constants because in the Living Universe they evolve with the decreasing mass of the electron. The last five are permanent constants and do not change with the passage of time.

Circlon constant $\theta = 1/11.7062$

The circlon constant ($\theta = \sqrt{1/\alpha}$) is the square root of the fine structure constant and is the ratio dictating the size between the many layers of scale within the structure of the atom. θ is the size ratio between the circlon shape's different layers of coils. The true meaning of the fine structure constant α has long been one of the greatest mysteries of physics. It has a dimensionless value of $1/137.036$ and frequently pops up within the equations of quantum mechanics without anyone being able to determine exactly just where it came from. As we will see here, it defines the dimensions of the circlon structures that make up the electron and proton and the photon links between them. It is the size ratio between the circlon's primary coils and its tertiary coil.

The Bohr Radius a_0

The Bohr Radius a_0 is the distance between the centers of gravity of the proton and electron within a ground state hydrogen atom. It has a value of $5.29177249 \times 10^{-11}$ meter. When the distance of one Bohr radius is used as the unit of measurement, the whole spectrum of photons emitted by the hydrogen atom can be calculated to have wavelengths that are exact whole fractions of squares of whole numbers.

The Masslength of Hydrogen

$$H_M/a_0$$

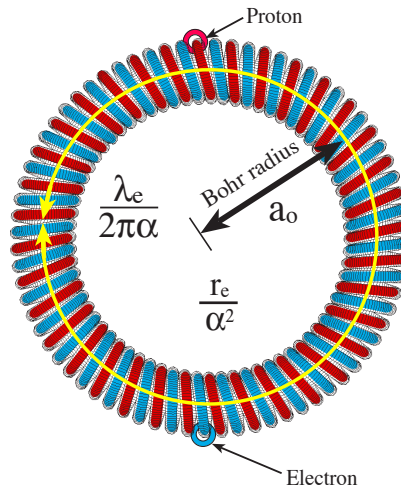
In the mechanics of gravity the masslength of Hydrogen interacts with the masslength of the photon $M\lambda$.

The Electron/Proton size and mass ratio

$$E/P = 1/1836.152701$$

The electron/proton size and mass ratio E/P is the difference in Compton wavelengths between the electron and proton and the difference in their masses. This ratio has long been considered to be one of the fundamental constants of nature, but as we will see, it is the slow and constant change in its value that drives the evolution of the universe. Today the mass of the electron is $M_e=9.1093897 \times 10^{-31}$ kg and the mass of the proton is $M_p=1.6726231 \times 10^{-27}$ kg. A pair of Compton wavelength photons is produced when a positron and electron or a proton and antiproton are annihilated. The wavelength of the electron's Compton photon is $\lambda_e=2\pi\alpha a_0=2.42631058 \times 10^{-12}$ m and the proton's is $=1.32141002 \times 10^{-15}$ m.

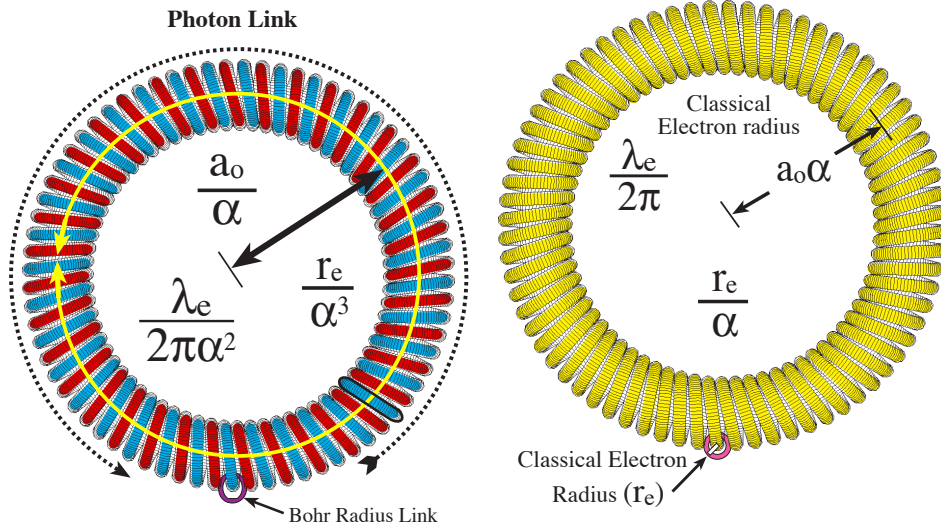
The Bohr Radius Link of the Hydrogen Atom



The Electron-Proton Charge Energy

$$iE = 13.5935 \text{ eV}$$

The electron proton charge energy iE is the ionization energy of the hydrogen atom. It is the energy given off in photons when a ground state atom is formed or the energy needed to separate the electron from a ground state atom. The photon with this energy is called the intrinsic hydrogen photon and has a wavelength of $\lambda_\infty = 4\pi a_0/\alpha = 9.11267052 \times 10^{-8} \text{ m}$, an energy of $2.179 \times 10^{-18} \text{ J}$ and a mass of $2.4254 \times 10^{-35} \text{ kg}$.



An equilibrium exists between the centrifugal force of the spinning electron and the centripetal charge force between the electron and the proton.

Classical Electron Radius

$$r_e = 2.81794092 \times 10^{-15} \text{ m}$$

The classical electron radius r_e is the radius of the smallest circlon coils making up the structure of the electron.

Fine Structure Constant = $\alpha = 1/\theta^2 = .00729735308$ $1/\alpha = 137.03605$

Matter is constructed in many concentric layers. It is the fine structure constant that is the dimensional constant between these individual layers in the internal structure of matter and photons. The inverse size and mass ratio between the different layers of matter is $\theta = 11.707$. Both of these numbers, 11.707 and 137 play a role in the structural interactions between particles of matter and photons.

The True Unchanging Constants of Nature

The Speed of Photons $C = 299,792,458$ m/sec

The speed of photons C is different from the speed of light c in that it is the velocity of all individual photons relative to one another. The speed of light c is always the velocity of photons relative to an observer (+/- C).

In the interaction between the speed of photons and the velocity of mass the speed of light is always measured to be c . It can only be measured at C when the absolute velocity of mass is zero.

The speed of light c is a general term used in several interactions. The speed of light C is just photons all travelling at the same velocity of C through a single inertial reference frame. All photons are emitted at photon rest. The inertial motion of the emitting body will cause Doppler shifts in the photons. Photons are not accelerated when they are emitted. They obtain their velocity from the opposite circular velocities of the two circlon shaped bodies that formed them (proton and electron) that formed them. The inertial motion of the atom that emits it has no effect on a photon's velocity of C .

Planck's Constant $h = \lambda MC = YC = 6.6260755 \times 10^{-34}$ J sec

When we measure Planck's constant, it becomes apparent that it is not a true constant but rather the combination of two constants: the speed of light C and the masslength Y of a photon $Y = \lambda M$. The idea of Planck's constant is based on the false assumption that the photon is a point particle and that it has no mass. When we divide Planck's constant h into photon constant Y and the speed of light C , the Heisenberg uncertainty value of $h/2\pi$ becomes $\lambda MC/2\pi$ and is no longer uncertain.

Photon Masslength $Y = \lambda M = 2.21022088 \times 10^{-42}$ kg m

The photon masslength constant Y is the wavelength of any photon times its mass. The mass of a photon is equal to $M = Y/\lambda$. In the interactions of electrons

$$Y = 2\pi M_e \alpha a_0$$

Y equals 2π times the mass of the electron M_e times the fine structure constant α times the Bohr radius a_0 .

Photon Angular Momentum = $h/2\pi = YC/2\pi = 4.2182907 \times 10^{-34}$

Photon momentum $p = mv = MC$ is a value of momentum unique to each photon. Photon angular momentum $\lambda MC/2\pi$ is a value common to all photons. It is also the quantity of angular momentum possessed by an electron at its ground state within an hydrogen atom. Electron angular momentum $I_w = mvr = M_e \alpha C a_0$ is equal to the mass of the electron times the fine structure constant times the speed of light times the Bohr radius.

Dimensional Constant of Matter = $\theta a_0 = \sqrt{\alpha} a_0 = 4.5204726 \times 10^{-12} \text{ m}$

The dimensional constant of matter θa_0 is a true universal constant that remains the same over the period of cosmological time, even though the values of both θ and a_0 slowly change at an inverse rate with the passage of time.

Photon Masslength Constant Y

$$Y = M_\lambda \lambda = 2\pi M_e \alpha a_0 = M_e \lambda_e = \frac{4\pi_1 M_\infty a_0}{\alpha} = \frac{2\pi_1 M_\infty \lambda_e}{\alpha^2}$$

Fine Structure Constant α

$$\alpha = \frac{2\pi r_e}{\lambda_e} = \frac{\lambda_e}{2\pi a_0} = \frac{4\pi a_0}{\lambda_\infty} = \frac{2\lambda_e}{\lambda_x} = \sqrt{\frac{2\lambda_e}{\lambda_\infty}} = \sqrt{\frac{r_e}{a_0}} = \sqrt[3]{\frac{4\pi r_e}{\lambda_\infty}} = \frac{Y}{2\pi M_e a_0} = \frac{1}{137.036}$$

Hydrogen Constant Equations

Intrinsic photon	$\lambda_\infty = \frac{4\pi a_0}{\alpha} = \frac{2\lambda_e}{\alpha^2} = \frac{4\pi r_e}{\alpha^3} = 9.11267052 \times 10^{-8} \text{ m}$
Bohr radius	$a_0 = \frac{\alpha \lambda_\infty}{4\pi} = \frac{r_e}{\alpha^2} = \frac{\lambda_e}{2\pi \alpha} = 5.29177249 \times 10^{-11} \text{ m}$
Bohr X-ray	$\lambda_x = 4\pi a_0 = \frac{2\lambda_e}{\alpha} = \frac{4\pi r_e}{\alpha^2} = 6.64837432 \times 10^{-10} \text{ m}$
Annihilation photon	$\lambda_e = 2\pi a_0 \alpha = \frac{\alpha^2 \lambda_\infty}{2} = \frac{2\pi r_e}{\alpha} = 2.42631058 \times 10^{-12} \text{ m}$
Classical radius	$r_e = \alpha^2 a_0 = \frac{\alpha^3 \lambda_\infty}{4\pi} = \frac{\alpha \lambda_e}{2\pi} = 2.81794092 \times 10^{-15} \text{ m}$