

THE FINAL FORM OF ATOMIC THEORY

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Abstract: We will find the centripetal force that we will apply to atomic physics, which is very different from the accepted physics. We will find the speeds and accelerations hidden in a circular smooth motion. We formulated some of why atomic physics was misformulated, and we proved the area and volume of spheres, different from the existing ones.

We set principles, like the ancient Greek philosophers, to formulate the theory.

We formulated the two different magnetic fields, which produce a circularly rotating charge.

We have formulated the existence of the ether. An ether with low viscosity does not contradict the Mickelson-Morley experiment and much more, it does not contradict the geocentric system of the universe, where the earth is almost stationary.

Keywords: Atomic Theory, atomic physics, geocentric system.

INTRODUCTION

Atomic physics was not formulated correctly, many mistakes were made, and some of them are mentioned.

There is a constant velocity, when the particle rotates in a circle, that falls towards the center. We will find the velocities and accelerations of a body circling, as well as the area and volume of a sphere.

We will formulate the law of inverse radial distance cube of a circularly rotating body, proven by solid mathematics, and formulate the new atomic theory.

When two particles circulate with each other across, then logic and the laws of nature say that the two particles must have the same mass in order to move in stability and form the hydrogen atom.

As we demonstrate, there is a constant force of impulse in the direction of travel of the particle to the hydrogen atom, which is balanced by the friction caused by the surrounding ether in the particle.

There is electrical power consumed by the atom and it is supplied from zero, from the sources of immaterial zero, which is something, being being and non-being at the same time.

METHODOLOGY

In the work, induction and abduction are widely used in the sense of logic applied to theory and mathematics.

The new thing that the work brings is the formulation of principles, like the ancient Greek philosophers, who made theories. Principles are prerequisites, so the paper presupposes the strength of Balmer's empirical formula for the wavelengths emitted by the hydrogen atom at electric potentials and low pressure. And the unit of measurement of distances met is kept the same for the hydrogen atom.

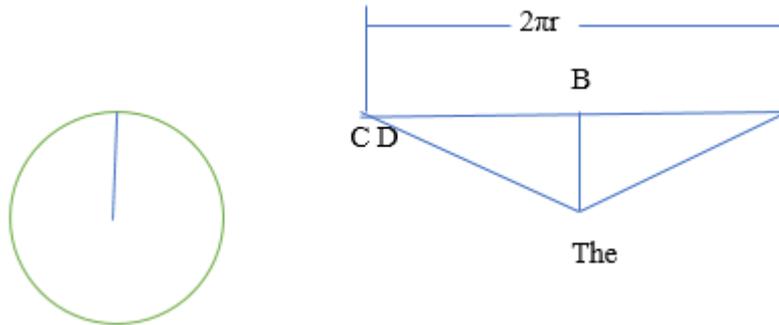
Prerequisites are both the pre-existence of zero and the ultimately indivisibility of matter.

A prerequisite is the acceptance of the validity of logic itself by the researcher, when properly applied, as we think we have applied here.

In order to formulate an atomic theory of small and invisible bodies, clairvoyance (not metaphysics) and imagination are prerequisites. And even imagination that is trained from a young age to create realistically.

CIRCLE AND SPHERE AREA AND CIRCLE VOLUME

In a circle, it is centered at a point with zero dimensions and a circumference of dimensions of $2\pi r$. The average of the two dimensions of the circle is $Z=(2\pi r+0)/2=\pi r$. The radius is r , so the area of the circle is, $S_{circle}=(\pi r)r=\pi r^2$.



Circle on the left and spread its circumference $2\pi r=CD$ on the right. The triangle

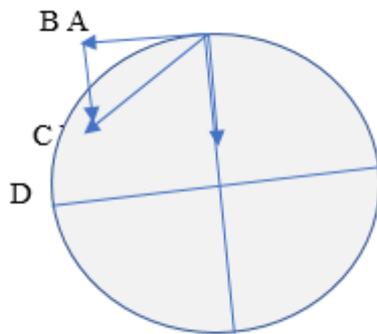
$OCD=2OCB=2OBD$. has an area A equal to the circle $A=\pi r^2$, $OB=r$

The mean of the circumference of the circle and the point at the center of the circle is $1/2 (2\pi r+0)=\pi r$, but also of an equal circle that intersects with the first, is, $S_{circle}=\pi r^2$ (of the intersecting circle), so the area of the sphere is,

$$S_{sphere}=(\pi r)(\pi r)=\pi^2 r^2$$

And the area of the sphere, multiplied by the radius of the circle, gives us the volume of the sphere, that is, $V_{sphere}=(\pi^2 r^2)(r)=\pi^2 r^3$

CENTRIPETAL AND ORBITAL ACCELERATION AND SPEED



We consider a mobile vehicle, travelling at a constant speed v_p , on a circumference of a circle and counterclockwise. When at point A, it has centripetal force $F_{centripetal}$, orbital force $F_{orbital}$ and resultant force F_x .

The period of the orbiting vehicle is T , the circumference is $2\pi r_{max}$, $r_{max}=\text{radius of the circle}$. So the velocity on the circumference is $v_p = 2\pi r_{max}/T$ and $T = 2\pi r_{max} / v_p$. And it follows from the two equations that the acceleration on the circumference will be,

$$a_p = 2\pi r_{max}/T^2 = v_p^2 / 2\pi r_{max} = \omega^2 r_{max} / 2\pi.$$

The velocity times the circumference, is clockwise. The counterclockwise is $-v_p = -2\pi r_{max}/T$.

The orbital speed at point A is parallel to the diameter DE and different from the speed on the circumference. On DE and from E to D a time of period T will elapse. So the average speed times DE will be, because $R=R_{max}\cos(\omega t)$,

$$\Delta R/\Delta t = (R_{max}/\Delta t)\Delta\cos(\omega t)$$

And because $\Delta T=T/2$ (and $T=2\Delta T$),

$$v_o = v_{max} \Delta \cos(\omega t) = (2r_{max} / T) \cos(\omega \Delta t) \quad \kappa \alpha t$$

$$v_o = v_{max} \cos(\omega T/2) = -v_{max} = -2r_{max} / T = -v_p / \pi$$

It is, according to the first method of differences that we introduced in the OVERTURNING OF INFINITESIMAL CALCULUS¹,

$$\Delta \cos(\omega t) = \frac{\sin(\omega \Delta t) \sqrt{\Delta^2 \{ \cos(\omega t) \}^2} \sqrt{\Delta^2 \{ 1 - \sin^2(\omega t) \}}}{\sqrt{\Delta \{ (1 - \sin(\omega t)) \Delta (1 + \sin(\omega \Delta t)) \}} \sqrt{-\{ \sin(\omega \Delta t) \}^2}} = \sin(\omega \Delta t)$$

But v_o (orbital) at point $\pi/2$ is maximum at the center of the circle, times the diameter and is,

$$v_o = r_{max} / (T/4) \sin(\omega \Delta t) = (4r_{max} / T) \sin(\pi/2) = 4r_{max} / T$$

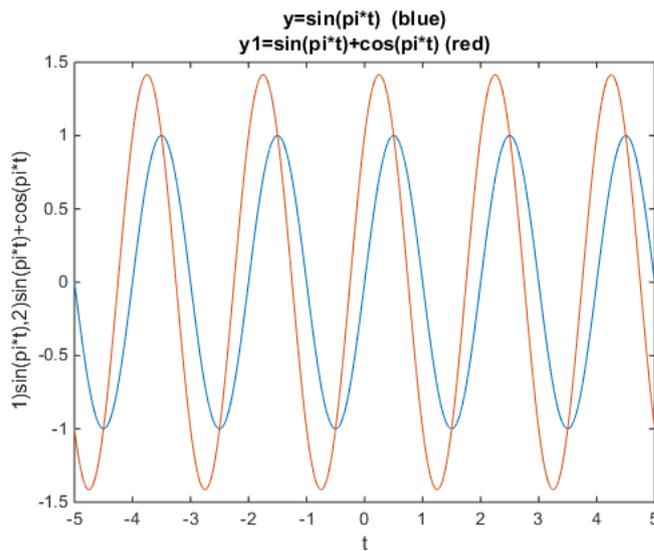
(is the maximum velocity times the diameter ED). This and the velocity on the circumference ($v_p = 2\pi r / T$) are not equal, they differ by $\pi/2i$.

According to the second method of differences,

$$\Delta \cos(\omega t) = \cos\{\omega(t+\Delta t)\} - \cos(\omega t) = \cos(\omega t) \cos(\omega \Delta t) - \sin(\omega t) \sin(\omega \Delta t) - \cos(\omega t)$$

Since $\Delta t = T/4$

$$\Delta \cos(\omega t) = -\sin(\omega t) - \cos(\omega t), \text{ and,}$$



With a blue line $y = \cos(\omega t)$ and with a red line $y_1 = \sin(\omega t) + \cos(\omega t)$

With a suitable initial phase condition, the second starts from zero

$$v_o = -(4r_{max} / T)$$

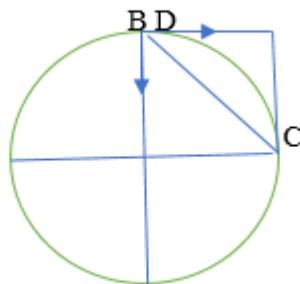
for $t = kT + T/4$

So there is a resultant velocity V_v perpendicular and directed towards the center of the circle.

FIND SPEEDS AND SPEEDS IN SMOOTH CIRCULAR MOTION

We consider mobile with constant velocity on the circumference $v_p = 2\pi r / T$, to bring circles with center O and radius, $r = OB = CD = OC = BD$

¹ ALEKOS CHARALAMPOPOULOS, OVERTURNING OF INFINITESIMAL CALCULUS AND RESTORATION OF THE MATHEMATICS IN CONNECTION WITH THE COSMIC THEORY "THE IDION" International Journal of Mathematics and Physical Sciences Research, Oct2020-Mar2021



It shall have orbital velocity v_o and centripetal velocity v_v . In the quadrant as in the figure, the mobile will travel a distance in time $\Delta t = T/4$. If the mobile had a BD orbit, it would be valid, $BD = r = v_o \Delta t = v_o T/4$. Also, if it traveled the radius, it would hold, $OB = CD = r = v_v \Delta t = v_v T/4$ again.

So, $v_o = v_v = 4r/T = 0.636(2\pi r/T)$.

Again, the phone would have a centripetal acceleration and an orbital. The radius r would be travelled, $BO = r = a_v \Delta t^2 = a_v T^2/16$. And $DC = r = a_o \Delta t^2 = a_o T^2/16$. Valid,

$$BC^2 = 2r^2 = BO^2 + DC^2 = (a_v T^2/16)^2 + (a_o T^2/16)^2 \text{ και, } a_o^2 + a_v^2 = 512r^2/T^4.$$

$$a_c = a_v = 16r/T^2 = 0.4 \omega^2 r = a_o$$

and, $a_c = a_v = \text{centripetal acceleration}$.

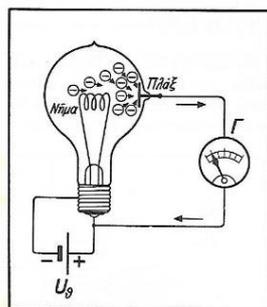
The centripetal acceleration that gives the force $F = ma_c$ that the orbiting body has, is equalized by the force of attraction which is gravitational or electric and the body then falls towards the center of the circle, at speed v_v . The permissible acceleration imparts a force $F = ma_o$ to the body and this is equal to the friction force of the ether it crosses, $F = -bv_o$ and $v_o = ma_o/b$.

The traction force is $F = 0.4m\omega^2 r = 0.4m\omega^2 r^4/r^3 = 0.4e^2/r^3$.

THE HYDROGEN ATOM AT LOW PRESSURE

We took the spectra of the elements, as well as hydrogen, and the gaseous elements were at a pressure of less than 0.008 bar. The spectrum of hydrogen was described by Balmer with his empirical formula, $\lambda = \lambda_0 \{ (1/n_f^2) - (1/n_i^2) \}$, where λ is the wavelength of radiation with initial λ_0 wave and $n_f = \text{final level of the electron}$ and $n_i = \text{initial level}$.

The existence of electrons was "proved" by Edison when he built an incandescent lamp and between the filament and another pole he put a capacitor, created an electrical voltage and observed a small current flow.

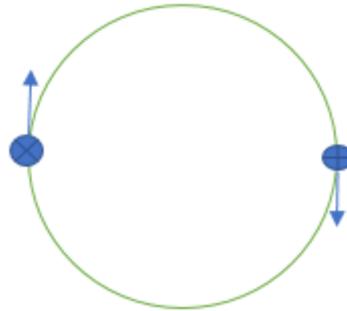


Σχ. 438. "Όταν ή πλάξι συνδέεται, μέσω του ελακιστήτου γαλβανόμετρου, προς τον θετικόν πόλον πηγής συνεχούς τάσεως, τα ηλεκτρόνια κινούνται εκ του διακόρου νήματος προς την πλάξι.

He considered that the incandescent filament emits electrons, which make up the observed current. But only photons are emitted in the lamp, which become carriers of the small current. There are no electrons and protons!

Hydrogen is the simplest element, consisting of two smaller "particles", which must be equal and similar in charge and mass, in order for the particle to perform harmoniously the movements and its center of mass. This is a prerequisite for it to happen.

These two particles are bubbles of dilute ether in the surrounding denser. They move circularly about their center of mass, create a magnetic field B each and an electric current I=ef, f=rotation frequency and the interaction of their electric charges with the magnetic field, create the mass of the bubble $m_b = 1/2 kBe^2$, k=dimension constant. The hydrogen atom is a bound photon, at the speed of rotation is c, of the particles.



A hydrogen atom with the two bubble-particles rotating around their center of mass at speed c, it is a bound photon.

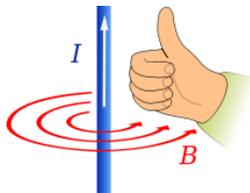
The radius between the bubbles is r and r/2, their distance from their center of mass. There is one electric attraction due to electric charges that is inverse to the cube of their radius and another, due to the electrical attraction of opposite charges-carriers electrical, as when parallel conductors are attracted. The two forces are equal and that is a prerequisite. The analysis is done in the privileged system of one bubble and the radius between the bubbles is r in the law of inverse cube of radii. And rotational speed c, so the pulling force,

$$F = \frac{1}{2} \frac{0.4e^2}{r^3} + \frac{1}{2} \frac{\mu_0 I^2 (2\pi r)}{2\pi r} = kB_p e^2 \frac{0.4v^2}{r} = kB_p e^2 \frac{0.4d^2}{r^3}$$

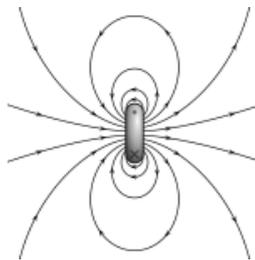
$m = kB_p e^2$ and d results from $F = 0.4m\omega^2 r = 0.4m\omega^2 r^4 / r^3$, is $d = (\omega r^2)^2$.

THE MAGNETIC FIELDS OF THE HYDROGEN ATOM

The magnetic field of a straight conductor is $B_p = \mu_0 I / 2\pi r$



The magnetic field at the center of a circular current conductor is $B_c = \mu_0 2\pi I / 2\pi r = \mu_0 I / r$.



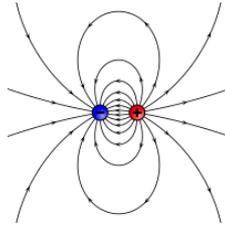
The magnetic field at the center of the hydrogen atom will be the sum of one orbiting charge in a circle of radius r with respect to the other, both have a phase difference π , i.e. both,

$$B_p = \mu_0 2I / 2\pi r = \mu_0 I / r.$$

But each moving charge has a magnetic field and affects the other, and the magnetic field of the two is,

$$B_c = 2\mu_0 I / 2\pi r = \mu_0 I / \pi r$$

and $r = 2R$ = distance (radius) of the two charges, orbiting in a circle of radius r, opposite each other.



Influence of one magnetic field on the other particle

THE HYDROGEN ATOM

In measuring systems, many measures are arbitrary. In System International, one meter of distance, unit of force and mass, time, electric current, are arbitrary. This means that one does not imply the other, since they do not arise from a logical sequence. Here we will find the logical system of units, with only acceptance of length in meters, as in System International.

We have accepted Balmer's formula as explaining the spectrum of the hydrogen atom. Thus, $1/\lambda = (1/\lambda_0) \{ (1/n_f^2) - (1/n_{in}^2) \}$, is the formula and $\lambda_0 = c/f_0 = 91.1 \text{ nm}$.

λ_0 is the wave that wraps the hydrogen atom, which for stability reasons has two equal smaller particles, of equal and opposite electric charge. The two particles orbit in a circle opposite each other with the same frequency f and because they are opposite orbiting, they have a phase difference, and have opposite charges. The two particles are bubbles of thinner ether with granules inside. The granules hit the rubber crust, like gas, and a bulge is formed that propagates in the surrounding ether and is the propagation of ether pressure, the dynamic electric field lines of the charge. The encounter between the two orbiting particles of dynamic lines becomes the cause of gravity.

If we assume e the electric charge, according to what we have explained, the force of attraction of the rotating opposite electric particles is $F = 0.4e^2/r^3$. And $r = \text{distance (radius) of the two charges, which circle within radius } R \text{ about the center of mass } (2R=r)$. Then, because the mass of one particle is the result of the influence of two electric charges and the electric charge of one particle, is located within the magnetic field B_p that forms the moving charge of the other particle ($m_p = kB_p e^2$).

At the same time, each charge forms an electric current $I = ef$, $f = \text{frequency of rotation around the center of mass}$, and because the two currents are opposites, electrical attraction of parallel opposite conductors develops, so that,

$$F_k = \mu_0 I^2 L / 2\pi r = \mu_0 I^2 2\pi r / 2\pi r = \mu_0 I^2 \text{ and,}$$

$$F = \frac{1}{2} \frac{0.4e^2}{r^3} + \frac{1}{2} \frac{\mu_0 I^2 (2\pi r)}{2\pi r} = kB_p e^2 \frac{0.4v^2}{r} = kB_p e^2 \frac{0.4d^2}{r^3}$$

Καί $d = vr$.

But $\lambda_0 = 2\pi r$, and $r = 1.45 \times 10^{-8} \text{ met}$. This is the fundamental radius of the hydrogen atom, when it is at a pressure of 0.008 bar and gives its spectrum to an electrical discharge of the tube containing it.

For the equation to have a solution, it is required, $\frac{1}{2} \frac{0.4e^2}{r^3} = \frac{\mu_0 I^2}{2}$.

FIND ATOMIC SIZES

Then it is, $F = \frac{0.4e^2}{r^3} = kB_c e^2 \frac{0.4v^2}{r} = kB_c e^2 \frac{0.4d^2}{r^3}$.

Αλλά $d = vr = \omega r^2$, $r = 1.45 \times 10^{-8} \text{ οπότε}$,

$$\omega = 4.75 \times 10^{15} (1/0.4kB_c)^{1/2} \text{ rad/sec}_A = 7.47 \times 10^{15} / (kB_c)^{1/2}$$

and, $f = \omega / 2\pi = 1.19 \times 10^{15} (1/kB_c)^{1/2} \text{ Hz}_A$

The index A, means that the unit of time and frequency is the consistent unit measurement system of the atom with respect to the unit of measurement of distance met.

But for the atom's measurement system to be consistent, the electric current $I = ef = 1 \text{ Amp}_A$, so, $e = 8.41 \times 10^{-16} (kB_c)^{1/2} \text{ Cb}_A$.

ι, $c = \omega r = 108.29 \times 10^6 (1/kB_c)^{1/2} \text{ met/sec}_A$

$\kappa\alpha$, $c\tau=1.57 (1/kB_c)^{1/2} \text{ met}^2/\text{sec}_A$.

The mass of a particle will be, $m_p=kB_c e^2=7.07 \times 10^{-31} k^2 B_c^2$

The magnetic moment of a hydrogen particle is,
 $\mu=I\pi r^2=6.605 \times 10^{-16}$

The magnetic moment times the magnetic field at the center of the atom ($B_c=\mu_0 I/2\pi r$), which has one rotating charge, is magnetic energy

$$E_m=\mu B_c= \mu\mu_0 I/2\pi r$$

This is equal to the electric potential energy, $E_d= \frac{1}{2} e^2 \cdot 0.4/r^2 = \mu\mu_0 I/2\pi r$, then,

$$\mu_0=e^2/2r\mu I= 3.69 \times 10^{-8} kB_c$$

It is, $E_m=\mu B_c= \frac{1}{2} 0.4e^2/r^2 \kappa\alpha B_c= 1 kB_c$ then,

$$\text{Because } kB_c=1 \text{ k}= 1 \kappa\alpha B_c=1 \text{ TA}$$

We knew that the rotational speed is, $c=\omega r= 108.29 \times 10^6 \text{ met}/\text{sec}_A$. This is equal to the quotient of the electric field E of one charge divided by its magnetic field B_p acting perpendicular to the electric charge on the other charge, i.e.

$$c=E/B_p=(0.4e/r^3)/B_p=108.29 \times 10^6 \text{ met}/\text{sec}_A$$

ELECTRICAL VOLTAGE AND POWER

Between the two charges of the atom, an electric voltage V develops,

$$V= 0.4e/r^2=1.6 \text{ volts}_A$$

Power P is consumed,

$$P=VI=1.6 \text{ Volt}_A \text{ Amp}_A=1.6 \text{ Watt}_A$$

This electrical power is provided by Zero (God, ultimate higher reality) which is something and immaterial, just as immaterial is energy and power. There are energies, kinetic, dynamic, thermal, magnetic, electric, within Zero.

RELATIONSHIP OF ATOMIC AND INDIVIDUAL MEASUREMENT SYSTEMS AND OF SYSTEM INTERNATIONAL

The ionization of the hydrogen atom is achieved at an electrical voltage $V=13.56 \text{ Volt}$.

So, $1.6 \text{ volts}_a=13.56 \text{ volts}$, and,

$$\text{Volt}_a=8.47$$

The speed of light, measured in System International, was found $c=3 \times 10^8 \text{ met}/\text{sec}$. So we have, $c=3 \times 10^8 \text{ met}/\text{sec}=108.29 \times 10^6 \text{ met}/\text{sec}_A$. And,

$$\text{sec}_A=0.36 \text{ sec}$$

In and for System International, $I_A = e/\text{sec}_A = e/0.36 \text{ sec}$ and,

$$\text{Amp}_A=2.77 \text{ Amp}$$

And the atom has power, $P=8.47 \text{ Volt} \cdot 2.77 \text{ Amp} =23.47 \text{ Watt}$.

$\text{A}\rho\alpha$, $\text{Watt}= 1.6/23.47 \text{ Watt}_A=0.68 \text{ Watt}_A$, $\kappa\alpha \text{ kgr} \cdot \text{met}/\text{sec}^3=0.07 \text{ kgr}_A \cdot \text{met}/\text{sec}_A^3$. And, $\text{kgr}_A=0.68 \text{ kgr}$.

Then the mass of the bubble is, $m_p=7.07 \times 10^{-31} \text{ kgr}_A=4.83 \times 10^{-31} \text{ kgr}$

And the hydrogen atom has twice the mass. We see that the mass of the hydrogen atom is very small and approximately equal to the acceptable mass of the electron. So, there is no problem in experiments. When they assumed that the particles emitted by the thermionic cathode were electrons with low mass so that they would not be measured in experiments. Where the mass of the hydrogen atom is approximately equal to that of the electron they found, it is still not measured in

experiments. All atoms consist of a synthesis of hydrogen atoms or molecules, and the thermionic cathode of tungsten emits an ionized hydrogen atom. It is a free ionized photon, since the hydrogen atom is a bound photon.

PROPULSION FORCE AND RESISTANCE FORCE OF ETHER

As mentioned, the rotating particle of hydrogen in a circular path has approximately a velocity of decline towards its center of mass, the

$$v_v = 0.636 \times 2\pi r / T = 0.636 v_p$$

and in the atom examined, $v_p = c = 108.29 \times 10^6$ met/sec_A, so, $v_v = 68.87 \times 10^6$ met/sec_A, for the atom. It is, $e = 8.41 \times 10^{-16}$ Cb_A, $B_c = 1$ T_A, so a propulsion force is developed from one particle to another, propulsion towards the circular path,

$$F = e v_v B_c = 5.79 \times 10^{-8} \text{ Nt}_A$$

This force results from the vertical drop of the magnetic field to the charge, and which comes from the movement of the other particle.

This is the propulsion force of the particle, which meets the resistance of the ether

$$F_A = b v_o = F$$

$$K\alpha_1, \quad b = 8,41 \times 10^{-16}.$$

This constant also comes out in the centripetal force. And the centripetal force is neutralized by the resistance of the ether.

In the analysis of body accelerations circling circularly, we found centripetal acceleration

$$a_c = 0,4 \omega^2 r = 3.23 \times 10^{23} \text{ met/sec}_A^2.$$

And the particle has, $m_p = 7.07 \times 10^{-31}$ kgr_A, so the centripetal force is,

$$F = 0.4 m_p a_c = 9.1 \times 10^{-8} \text{ Nt}_A = e v_v B_c$$

As it approaches the surface of the bubble particle of the hydrogen atom, the ether becomes denser and b.

GAS GRAINS

You know that all elements pass through the three states of matter depending on the heat imparted to them, solid, liquid and gas.

Water passes through the three states. When it is gaseous at 100 degrees Celsius, it becomes water vapor. Water vapor consists of grains of water, and each grain consists of millions of molecules of water. This is indisputable.

And the elements, when in gaseous form, are made up of grains of molecules or atoms, possibly millions of them.

In our work, we found that the hydrogen atom has a mass of the order of 10^{-31} kgr. And therefore the mass of its grain, consisting of millions or thousands of hydrogen molecules, is in the order of 10^{-27} kgr.

In the mass spectrographs where the masses of the elements were found, those elements at normal temperature that were not gases, the solids sublimated them into gases or the liquids evaporated them to become gases and make measurements. The gases consisted of atom-molecule granules and found the masses of charged grains of elements. It is possible that in the future the periodic table of elements will change, if we do not accept a fixed number of molecules or atoms that make up the grains. And because they found isotopes, the number of grains is not fixed. But in mass spectrographs, they found the masses of grains, not atoms. This means that in particle accelerators, they accelerate grains of elements and in collisions they break.

EPILOGUE

We found the centripetal force to apply to atomic physics, which is very different from the accepted force of physics. We found the speeds and accelerations hidden in a circular smooth motion. We formulated some of why atomic physics was misformulated, and we proved the area and volume of spheres, different from the existing ones.

We set principles, like the ancient Greek philosophers, to formulate the theory.

We formulated the two different magnetic fields, which produce a circularly rotating charge.

We found a consistent system of units required by atomic theory and showed that System International is inconsistent.

We have formulated the existence of the ether. An ether with low viscosity does not contradict the Mickelson-Morley experiment and much more, it does not contradict the geocentric system of the universe, where the earth is almost stationary.

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