

sri ganesha

Respected sir / madam

Subject: derivation of new fundamental universal field equation relating energy , space and time.

I have derived an universal field equation relating energy , space and time for first time.

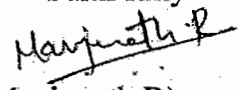
I wish to publish this equation in your magazine, so I need your help to perform this task . if you are satisfied with my equation ,you may reply about this regard . I will be waiting for your reply

Thanking u

DATE: 27/NOV/2009  
PLACE : INDIA  
(BANGALORE)

Your's

Faith fully

  
(Manjunath.R)

Note :  $a^2$  is represented as  $a^2$  ①

### PART-1

Consider a photon of relativistic mass ' $m$ ' moving with speed ' $c$ ' is associated with wavelength ' $\lambda$ ' given by  $\lambda = h/mc$  ( $h = \text{Planck's constant}$ ); according to wave theory speed of photon wave is given by  $c = \lambda/T$  ( $T = \text{time period}$ ); by substitution of value of  $c$  in the equation  $\lambda = h/mc$

we get  $m\lambda^2 = hT$ , as frequency of photon wave is given by  $f = 1/T$  then the equation  $m\lambda^2 = hT$  becomes  $f = h/m\lambda^2$

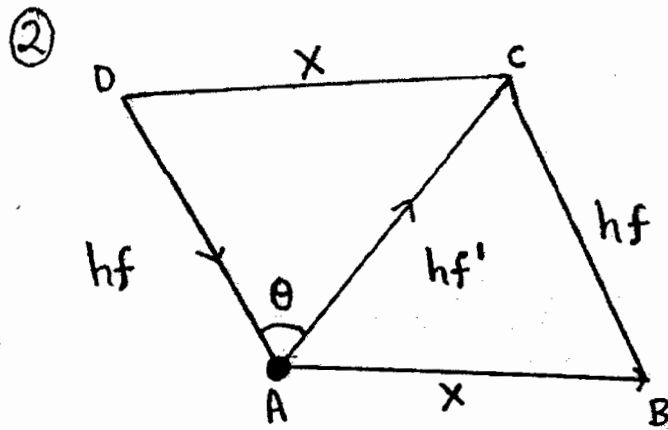
according to de broglie, wavelength associated with the photon is given by  $\lambda = h/p$  thus the equation  $f = h/m\lambda^2$

becomes  $f = p/m\lambda$ , as we know angular frequency is associated with photon given by  $\omega = 2\pi f$ ,  $\omega = 2\pi p/m\lambda$ , (as  $f = p/m\lambda$ )

this equation can be applied to both oscillating photon and electron also then wavelength associated with the electron is given by  $\lambda = h/mv$  ( $v = \text{velocity of electron}$ ) then the above equation  $\omega = 2\pi p/m\lambda$  becomes  $\omega = 2\pi p mv / mh$  i.e  $\omega = 2\pi p v / h$

### PART-2

CONSIDER A ELECTRON of mass ' $m$ ' at rest, total energy associated with the Electron is  $m_0 c^2$  suppose radiation of energy  $h f$  is incident on the electron, part of energy  $h f$  "is absorbed and part of energy  $h f$  " is scattered by electron, absorbed energy  $h f$  " is converted to motion of electron hence the electron travels a distance of ' $x$ ' from point A to B in time ' $t$ ', let  $\theta$  is the scattering angle



Consider a parallelogram ABCD is constructed AS SHOWN ABOVE

Let  $AB=CD=x$  ,  $AD=BC=hf$  ,  $AC=hf'$  (OPPOSITE sides in parallelogram are equal) , by applying law of cosine to triangle ADC we get

$$\underline{a^2 = b^2 + c^2 - 2bc \cos \vartheta} \quad \text{let } a=x, b=hf, c=hf', \cos \vartheta = \cos A$$

$$X^2 = (hf)^2 + (hf')^2 - 2(hf)(hf')\cos \vartheta \longrightarrow 1$$

By law of conservation of momentum of the photon

we get  $\vec{p}_\gamma = \vec{p}_{\gamma'} + \vec{p}_{\gamma''}$  , where  $\vec{p}_\gamma$  ,  $\vec{p}_{\gamma'}$  ,  $\vec{p}_{\gamma''}$  be momentum of incident, scattered and absorbed photon respectively

Let us assume absorbed momentum of photon is converted to momentum of electron thus  $\vec{p}_{\gamma''} = \vec{p}$

Thus  $\vec{p}_\gamma = \vec{p} + \vec{p}_{\gamma'}$  , where  $\vec{p}$  = momentum of electron

$$\vec{p} = \vec{p}_\gamma - \vec{p}_{\gamma'} \text{ , squaring on both sides we get } p^2 = (\vec{p}_\gamma - \vec{p}_{\gamma'})^2$$

as we know  $(a-b)^2 = a^2 + b^2 - 2ab$  , thus the above equation

$$\text{becomes } p^2 = p_\gamma^2 + p_{\gamma'}^2 - 2|\vec{p}_\gamma \cdot \vec{p}_{\gamma'}|$$

according to dot product rule  $|\vec{a} \cdot \vec{b}| = |a||b| \cos \vartheta$

(3)

Then we get  $p^2 = p_y^2 + p_{y'}^2 - 2 |p_y| |p_{y'}| \cos \vartheta$ , let us multiply above equation by  $c^2$  we get the expression (WHERE  $c$  = speed of light in vacuum)

$$P^2 c^2 = p_y^2 c^2 + p_{y'}^2 c^2 - 2 |p_y| |p_{y'}| c^2 \cos \vartheta$$

As we know frequency of photon is proportional to it's momentum

$hf = pc$  thus the below equation is obtained

$$p^2 c^2 = (hf)^2 + (hf')^2 - 2 (hf) (hf') \cos \vartheta \longrightarrow 2$$

by comparison of 1 and 2 we get the equation  $x^2 = P^2 c^2$

i.e  $x = pc$  (postion of electron is defined as a function of it's momentum)

after absorption of energy  $hf'$  from photon total energy of electron increases from ' $m_0 c^2$ ' to ' $m c^2$ '

then total energy associated with electron when at motion is

$E = m c^2$ , momentum associated with electron during it's motion is  $p = mv$ , thus  $m = p/v$

By substitution of value of ' $m$ ' in the above equation we get

$E = P c^2 / v$  THUS  $E v / c = P c$  (as postion of electron is defined as a function of it's momentum) i.e  $x = pc$

(4)

$$E v/c = x \quad \text{thus} \quad V/C = X/E \longrightarrow 3$$

angular frequency associated with electron is given by  $\omega = 2 \pi v/h$

(as position of electron is defined as a function of its momentum) i.e.  $x = pc$  then  $p = x/c$

Then the equation  $\omega = 2 \pi v/h$  becomes  $\omega = 2 \pi x/hc$

$$h\omega/2 \pi x = v/c \longrightarrow 4$$

by comparison of 3 and 4 we get the equation  $E = 2 \pi X^2/h\omega$

PART-3

CONSIDER A MATERIAL PARTICLE MOVING IN A CIRCULAR ORBIT with constant angular velocity ' $\omega$ ', then the total energy

associated with the particle is given by the equation  $E = 2 \pi X^2/h\omega$

\* Note: angular frequency of particle can also be defined as angular velocity, when it moves in circular orbit

Where  $x$  = position of particle in orbit, as orbit is circular

$\omega = \vartheta/t$  ( $\vartheta$  = angular displacement with respect to time 't')

Then the above equation  $E = 2 \pi X^2/h\omega$  becomes

$E = 2 \pi x^2 t/h\theta$ , let  $\theta = 2 \pi$  for one complete revolution, then equation

$E = X^2 t/h$  is obtained

Let ' $E$ ' BE TOTAL ENERGY OF PARTICLE at position ' $x$ ' with respect to time 't'

We can also tell that total energy is distributed at position ' $x$ ' with respect to time 't'

(5)

As we know total energy of universe 'E' is distributed along its space 'x' with respect to time 't' then this energy is given by

$$E = X^2 t / h$$

Fundamental equation of unified field theory is

$$E = \text{total } m(1+D) \longrightarrow 5$$

E = TOTAL ENERGY OF UNIVERSE, m = total mass, D = distance

$$E = X^2 t / h \longrightarrow 6$$

By comparison of 5 and 6 we get the equation

$$m = X^2 t / h(1+D)$$

According to Einstein  $E = mc^2$  where  $c$  is not just the velocity of a certain phenomenon—namely the propagation of electromagnetic radiation (light)—but rather a fundamental feature of the way space and time are unified as spacetime.  
According to equation,  $E = X^2 t / h$ , space and time behave as separate factors