

Dual nature of Energy and unique gradient composition of mass and energy

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Abstract— My hypothesis tries to explain the propagation of light and its massless phenomenon and its deviation in gravity at infinite distances. Further it also tries to explain origin of charges and particles.

Index Terms— differentiated particles, dissociated energy, dual nature of light, electro-magnetic nature of light, formation of subatomic particles, mass-energy gradient, propagation of light.



1 INTRODUCTION TO CENTRAL IDEA

According to me light/photons has (in general) no mass, as it does not become infinitely heavy as photons travels with speed of light, which could result in infinite moving mass, but that is not the case. But contrary to this we are also aware of the fact that light/photons are affected by gravitational waves.

So, we could think about a kind of fine balance between two forms of energy. Like according to Einstein every particle, which has mass will have some energy by the virtue of its mass. So, I think if a light is moving it won't manifest any mass as it tries to completely be dissociated in form of energy. But as soon as the light travels infinitely long distances some part of light/photon particles gets collapsed one inside the other, which in turn would convert massless energy into some sort of negligible mass and this mass would in turn would be attracted by gravitational force leading to slight deviation in trajectory of light.

This fine moment of light which is formed by a mix of completely dissociated energy and collapsed energy (extremely negligible mass = near to absolute zero) and has light travel infinitely long distance it would then start to compress/ collapse more frequently and intensively leading to some sort of negligible mass formation (mass slightly greater than zero = measured/detected with fine instruments or observations).

2 CONCLUSION OF CENTRAL THEME

So, I would like to conclude that my hypothesis of dual nature of energy is all about fine increasing gradient of collapsing energy leading to mass generation/formation at infinitely large distances.

So, when light is at relatively near to origin it would be gener-

ally composed of completely dissociated energy due to which it is mass less but when it travels very large distance (relative to universe) it would start showing different properties which includes mass leading to influence of gravity on trajectory of light.

According to me no object can be of infinite mass (contradicting the mass and speed relationship of Einstein). As one object would attain speed of light it would try to dissociate its mass in complete energy resulting into its massless nature.

The movement of light(propagation) could be visualised as non-uniform movement of longitudinal wave, where compressions generate negligible mass and rarefactions indicates completely dissociated energy. As the light propagates very large distances the frequency of compressions increases leading to formation of some negligible mass leading to its slight deviation due to gravitational field.

As complete energy is a form which is same or indivisible form of energy for all particles/entities in universe, it can be a sixth state of matter or the basic building block which forms all sub-atomic particles and universe.

The formation of a comparable mass from this completely dissociated energy can be done only at absolute zero temperature (0 K), which would absorb all its energy and collapse it forming a mass chunk. Due to some energy provided to system (small mass chunk) it could easily do fusion and build particles, which in turn would make universe.

According to me Einstein's mass and speed relation holds good for particles having speed nearly equal to speed of light, but not exactly equal to speed of light. When a particle is accelerated to near speed of light its internal subatomic particles would come extremely near/collapse leading to very large mass. But at absolute speed of light the collapsed mass would suddenly dissociate into complete energy leading to sudden drop in mass. As the particle would be completely dissociated it would follow the path/movement described by me above.

Concluding to it I would like to state there exist a supreme state of matter CDE (completely dissociated energy) which is building block for all states/elements/particles/etc. and could explain all natural phenomenon related to light, formation of universe, propagation of particles, etc.

3 EXTENSION: ELECTRO-MAGNETIC NATURE OF LIGHT

As discussed in above theory the composition of light is a unique gradient of mass and CDE (completely dissociated Energy). So as the mass is formed (here mass is very-very small) it by nature is an integral multiple of DE (differentiated electron) so the propagation of light forms current (very small or negligible). The DE is highly unstable and is formed for very few seconds and almost instantaneously gets converted into CDE. The conversion of DE to CDE is not always in one direction. Which means light intensity is not constant in one direction (direction of emergence) as the DE would be dissipating energy around it.

If one travels with speed of light the change in time for the person would be zero as time could be defined as cycles of DE and CDE. So according to me perception of time is not constant it is dependant on surroundings of the universal light. If there are rapid transformations/cycles of DE and CDE perceived time will flow according to our general notion, but if the cycles are more rapid or very slow then time could also move more rapidly or slowly compared to general notion.

We could also think of dark space far from our universe, which is completely dark. The temperature of dark space is absolute zero. Due to the temperature in dark space the cycles of DE and CDE are slowly reduced to form a mass chunk emitting / transferring energy to surroundings. So, time perceived here would be tending to zero or absolute zero as there are no cycles of DE and CDE.

So, this nature of time makes it necessary for the creation of some sort of universal time unit ' t_u ' which could be equated with general notion of time on earth (t_e). Therefore $t_u = t_e$ for ease.

4 EXTENSION: CHARGE FORMATION

While I concluded the composition of light as DE and CDE. The fundamental particle is DE (formed by collapsed CDE) but DE is not very stable. At high temperatures DEs combine to form an electron such that "Electron = (Constant)DE" for ease let's name constant as Naik's integral combination constant for electrons (N_{ICE}).

Now for the formation of fundamental positive charge / dif-

ferentiated proton (DP) we would try to assume some kind of particular method of combination of DEs. Let the combination method be called Universal Primitive Combination Cycle (UPCC)

So, from the above trends of combination I would like to say that every combination of 3 DEs is DP and 4 DEs is DN (Differentiated neutron). The combination of 2 DEs is highly unstable due to which it is converted into DP by addition of one extra DE.

The above stated combination cycles also give reasons for high mass of positive charge and low mass of negative charge. As mix of NICE (DE) will result in one electron but NICE (3 DE) will result in one proton. Note: The addition of DEs is endothermic as CDE will be consumed to form/combined DEs this will result in some additional mass $M_C = \text{Mass by combination for DE pairs}$.

M_{C1} = formed mass by combination of a pair of DE

M_{C2} = formed mass by combination of a triplet of DE

M_{C3} = formed mass by combination of two pairs of DE

So, let us assume some mass of DE = M_{DE} and some charge of DE = Q_{DE} :

Therefore, mass of electron = $M_{DE} (N_{ICE})$

And charge on one electron would be = $Q_{DE} (N_{ICE})$

And N_{ICE} would depend on an equilibrium generation forming a geometrical arrangement of maximum possible DEs to make an electron. So, if a DE is pushed inside the arrangement of DEs in Electron the new DE would be pushed away due to like charges. This explains integralness of N_{ICE} .

Now Mass of DP:

$$M_{DP} = 3(M_{DE}) + M_{C2}$$

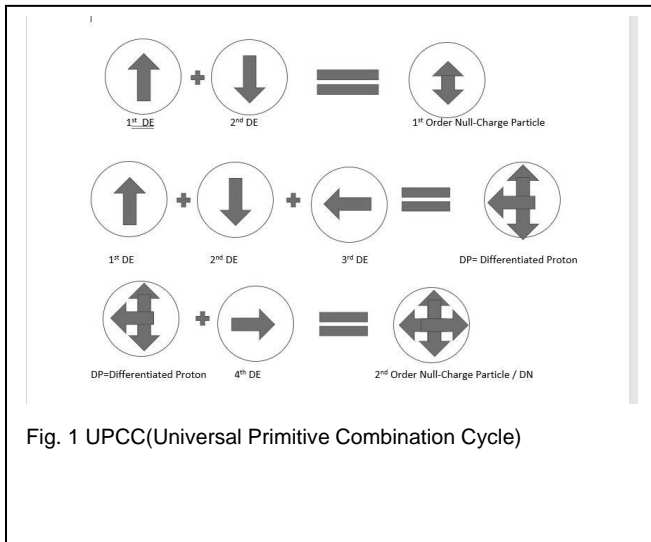
$$\text{Mass of Proton} = M_{DP} (N_{ICE}) = (3(M_{DE}) + M_{C2}) (N_{ICE})$$

$$\text{Charge on Proton} = -(Q_{DE}) N_{ICE}$$

Mass of DN:

$$M_{DN} = 4(M_{DE}) + M_{C3}$$

$$\text{Mass of neutron} = M_{DN} (N_{ICE}) = (4(M_{DE}) + M_{C3}) (N_{ICE})$$



5 EXTENSION: BIRTH OF UNIVERSE/MULTIVERSE

According to me the only thing which ever existed before everything, will be some sort of super atom, which is extremely dense and stable, but when temperature exceeds it initiates chain reactions dissipating some of its mass to energy leading to expansion of the super atom. So according to principle it will expand spherically, and each spherical shell is one universe.

TERSMS USED IN HYPOTHESIS

CDE: Completely Dissociated Energy

DE: Differentiated electrons

N_{ICE}: Naik's Integral combination constant

UPCC: Universal Primitive Combination Cycle

DP: Differentiated proton

DN: Differentiated Neutron

M_{DP}: Mass of Differentiated proton

M_{DE}: Mass of Differentiated electron

M_{DN}: Mass of Differentiated neutron

Q_{DP}: Charge of Differentiated proton

Q_{DE}: Charge of Differentiated electron