Superposition

The principle of superposition is one of the fundament laws of nature in contemporary physics. superposition principle is mostly defined in terms of applicability of additive logic to set of linear equations. The linear equation itself is defined as

$$f(x_1 + x_2 + x_3) = f(x_1) + f(x_2) + f(x_3) \quad \ldots \ldots \ldots (1)$$

Superposition Reconciliation

To bring the definition in line with arguments of PicoPhysics, let us look at dictionary definition for superpose "to place or lay over or above something", it is interpreted to mean occupy space, that is already occupied by something else. This provides two cases of superposition;
Case 1: When the newly laid identity is same as identity occupying space before
Case 2: When the newly laid identity is different than identity occupying space before

The space is congruent to identity of object composed of identity. The function $f(x)$ represent a property of such object that depends on contents of the object, the superposition principle transfers the commutative, associative and summation properties of the identity to objects characteristics for Konserved identities.

The linearity of $f(x)$ signifies linear dependency of object characteristics to amount of contained identity.

Let us consider charge as the identity and its field at a distance as the property. Here x = q the charge, and

$$f(x) = E = q / 4\pi\varepsilon r^2 \ldots\ldots\ldots 1$$

and Energy density due to electric field is

$$f^{'}(x) = E_{nd} = \varepsilon E^2 = \varepsilon q^2 / 16\pi^2 r^4 \ldots\ldots\ldots 2$$

- In equation 1, the field varies linearly with electric charge (Object identity). Hence field at a distance from different charges can be superimposed.
- In equation 2, the Energy density due to electric charge at a distance is not a linear function of charge. Thus energy at a distance from charge can not be obtained by superposition.

Superposition principle provides a classification of object properties based on how they change (in magnitude) with respect to identity defining the object.

Field describing characteristics two charges overlays at a distance r follow superposition principle (additive) which is a result of linear variation of field with charge.

Let us consider motion of unit Knergy object in non-Konserved space. Kambhar is consumed inside the unit object, it is generated outside the object, from where it moves into the object due to its affinity to posses Knergy. The volume of unit object is $1/K_d$, Cross section area of unit object $= 1/(H_S C_S)$. As Kambhar density increases, so does the consumption rate of Kambhar by the object $= C_s K_d$.

To be continued - - -