Sub-Structure of Electron Based on Gravitational Interaction

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Abstract—prediction of the sub –structure is made based on the gravitational interactions.inner structure is made up of small quantized dots called alpas.there are 20 alpas in each electron and positron,each alpa carrys a charge of 0.084x10-1c and amass of 4.746x10-32kg which constitute for the charge and mass of electron.with the help of these alpas the gravitational interaction of electron is explained successfully.Electric potential and Electric field for each alpa is found out and schrodinger equation is reduced for the trapped and probability of finding out an alpa inside an electron and probability density is found out.

Index Terms— Alpas,electric potential,Electric field,Energy of alpas,Probability of alpas.

1 INTRODUCTION

As it is always said that the net charge of the electron is –1.6x10-19c.Net in theSense there are also some other particles inside the electron which may carry Positive and negative charges which cancel on the whole giving the net charge -1.6x10-19c. It is known that there is no possible sub structure of the electron and it is always known to be a point charge. . Based on the gravitationalinteraction and other properties relating to the potentials of the electron, the prediction of the sub structure is made here.

Inside the electron there are no. of quantised dots or quantised point charges.These quantised point charges can be called as alpas(meaning:small in Sanskrit).these alpas may be positively or negatively charged. The charge and mass of the electron is equally distributed among these alpas.

There are 20 alpas inside an electron. The charge of the electron is equally distributed among 19 alpas, Each alpa gets a charge of -0.0848*10-1c. and mass of 4.46x10-32kg. The remaining one alpa also gets the same charge, mass -0.084x10-1c and 4.746x10-32kg .The charge and mass of the remaining one alpa can be neglected . We call the above system as fundamental particle system which has 20 alpas on the whole ,out of which only 19 alpas constitute for the charge of the electron .It is also called as 20 particle system.

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2 In-Active Alpa

The alpa which is neglected in the fundamental parti cle systemIs called inactive alpa. The inactive alpa can have both positive and negative charge

(1) A+=+0.084*10-1c

(2) A-=-0.084*10-1c

An electron can have the both inactive positively charged alpa and negatively Charged alpa.
Figure 1:

3 Gravitational Interaction

3.1 Interaction of Antimatter with Matter.

Consider the case of a positron which has in-active negatively charged alpa That interacts with electron with electron which has a positively charged in- active alpa .Here the negatively charged in-active alpa in the positron attracts the positively charged in-active alpa in the electron. In this way antimatter

3.2 Interaction of Antimatter with Antimatter

The negatively charged inactive alpa in one positron attracts the positively Charged in-active alpa in the other positron. In this way antimatter interacts with the antimatter .In this way the CPT theorem is also satisfied.

4 Virtual Particles Annhilation

The inactive positively charged alpa present in the electron attracts the in- active negatively charged alpa present in the positron so these appear inpairs in free space and rapidly an nihilate with each other.

5 ELECTRIC POTENTIAL OF ALPA

The electric potential (v) between two alpas is

$$V = \frac{1}{4\pi\,\epsilon_o} \times \frac{q}{r}$$

Where q= -0.0846 × $10^{-1}C$

r = distance between two alpas

$$V = \frac{1}{4\pi\,\epsilon_0} X \frac{-0.0846 \times 10^{-1}}{r}$$

V=5.987x10+22v
The spacing among these alpas can be cited as shown in Figure 2

The diameter of the electron is given by 5.6358x10-15m, out of the four Diameters shown in the figure each diameter gets 5 alpas with equally spaced among them . Now the spacing between two alpas is given by 1. 2716x10-15m

6 ELECTRIC FIELD ACTING ON EACH ALPA

$$E = \frac{1}{4\pi\,\epsilon_0} \times \frac{q}{r^2}$$

$$E = \frac{1}{4\pi\,\epsilon_0} X \frac{-0.0846 \times 10^{-1}}{(1.2716 \times 10^{-15})^2}$$

E=4.708x10+37 N/C

7 ENERGY OF ALPAS

Consider the alpa to be motion less, In other words alpa is in one dimensional trap. Energy of each alpa when tarpped is

$$E_n = \left(\frac{h^2}{8mL^2}\right) n^2$$

Here L can be taken as 1.2716*10-15m. Thus for a fundamental particle system We will have the values of n from 1 to20
Eg: :- for 1st alpa $E_1 = \left(\frac{h^2}{8mL^2}\right) X\ 1$

8 PROBABILITY AND PROBABILITY DENSITY OF ALPA

. Since the alpa is tarpped in one dimensional medium Schrodinger wave Equation for one dimension can be reduced to

$$(8)\ \omega_n(x) = A.\sin\left(\frac{n\pi}{L} \times X\right)$$

where as n=1, 2, …20
Similarly the probability density function is given by

$$(9)\ \omega_n{}^2(x) = A^2.\sin^2\left(\frac{n\pi}{L} X\right)$$

where n=1, 2, …20

9 CONCLUSION

Many attempts have been made to find out the inner structure of the electron.I came out with the prediction which explains the gravitational interactions of antimatter with antimatter successfully. Electric field and Electric potential for each alpa has been found out. Probability for each alpa inside an electron is also found out.

9 RESULTS AND DISCUSSION

There are small quantised dots inside the electron called alpas,The arrangement of these alpas is shown in the figure 2.These alpas are equally spaced among them along the four diameters of the electron. The electric potential and Electric field of these alpas is found out in the equations (3)(4)(5)(6) respectively. The interaction of the antimatter with matter is explained in the sections 3.1, 3.2.the probability and probability density is found out in the section 8.

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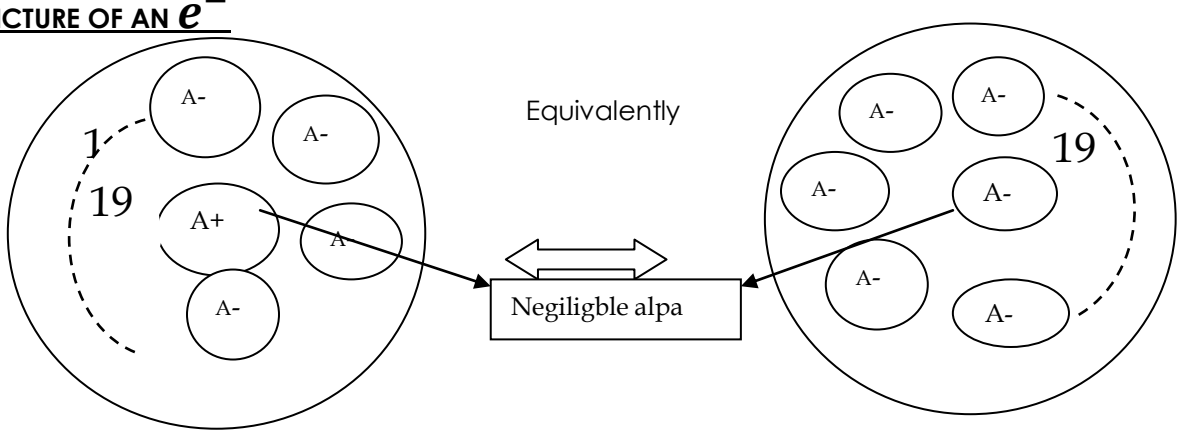
Figure 1

PICTURE OF AN e^-



Picture of positron:

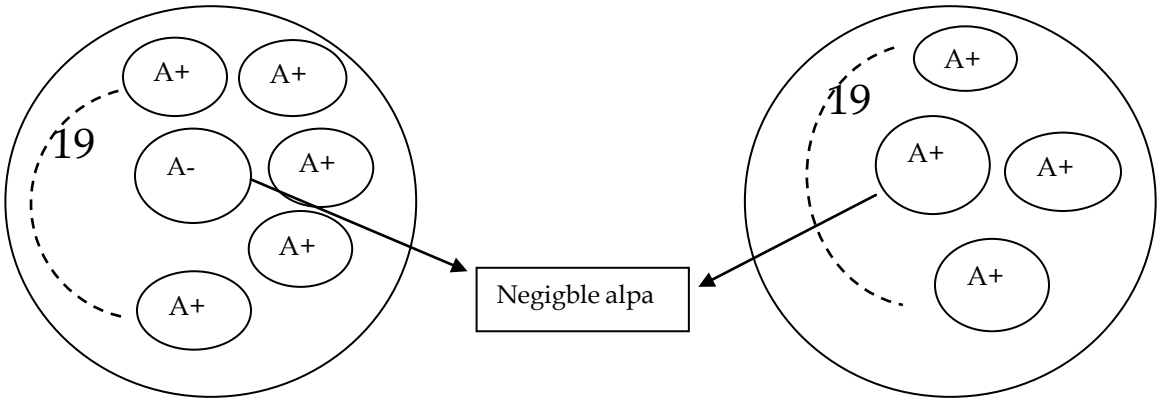


Figure-2

Spacing among these alpa particles can be cited as