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Properties of Strong Force and Spin of Quarks and Nucleons

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Abstract:- If the distance increases the interaction strength increases and if the distance decreases then the interaction strength decreases with energy. Further That is why, The quarks are not remove from atomic nucleus?.That the colors forces are leak out from quarks .The strong forces are still exist when the colors are inside the quarks and force carrying particle. It means that the color force depends on the color emission. It should be noted that Higgs Boson(the mass less particle) is emitted or absorbed by the quarks

I. INTRODUCTION

If the energy increases to the quarks. On the other hand if the retarded force applied as a form of energy, The quark go to the closer another quarks so the interaction strength decreases with energy. Now Here Einstein famous energy mass relation frequently applied, We have the rest massEnergy of quarks, $E=mc2$

In this relation, We can see that,C = dr/dt,

Here, m =mass of quarks of Protons or Neutrons

$$C = \frac{\text{velocityof light}}{\text{Life time of Resonances}} = \frac{\text{Range of Nuclear Force,}}{\text{Life time of Resonances}}$$

Here, If the distance increases the interaction strength increases and ifthe distance decreases then the interaction strength decreases with energy. Further That is why,the quarks are not remove from atomic nucleus?

*The strong force depends on the two type of distances between quarks of same path.

- The strong force depends on the two type of distances between quarks(along the line joining of the quarks.)
- Distance of travelling quarks(along the line joining of the quarks.)

That the colors forces are leak out from quarks .The strong forces are still exist when the colors are inside the quarks and force carrying particle. It means that the color force depends on the color emission.

It should be noted that Higgs Boson(the mass less particle) is emitted or absorbed by the quarks Or Gluons. The Higgs field found extreme atomic nucleus. All systems (living or non living) in the universe are organized by Higgs Boson. When this mass less particle extinct from the nucleus, then theAtoms destroyed.

II. THE SPIN OF AGGREGATE QUARKS

The proton has isotopic spin +1/2 as the neutron has isotopic spin -1/2, but in case of a proton the spin is pointing upwards and the neutron spin is pointing downwards .

Let us understand quarks properties of protons. Protonshave two up quark and one down quark such as the isotopic spin of up quarks are +1/2 and -1/2 respectively and isotopic spin of down quarks -1/2.

The vector sum of isotopic spin is = +1/2+1/2-1/2= +1/2

So the isotopic spin of prorton is +1/2 . Because quarks can not be removed from atomic nucleus , so the quarks combine aggregate is +1/2.

Prudently we can observe that aggregate spin of quarks in Proton is +1/2.

Similarly, In Neutron the isotopic spin of down quarks are -1/2 and -1/2 respectively and isotopic spin of up quarks are -1/2.and the spin of bundle of protons are clockwise and hence spin of Prtoton is also clockwise.

The vector sum of isotopic spin is =-1/2-1/2+1/2= -1/2

Prudently we can observe that aggregate spin of quarks in Neutrons is_-1/2,because quark can not be removed from atomic nucleus, So three quaqrks combine aggregate spin is -1/2.

Therefore We can understand , why and how the isotopic spin of quark in proton is +1/2 and in Neutron it is -1/2. And spin of down quarks are anticlockwise, hence the spin of Neutrona are also anticlockwise.

III. CONLUSIONS

- From these assumption, we can understand that how if energy increases to the quarks the interaction strength decreases with energy.
- From another assumption , we can understand why and How the isotopic spin of quarks in proton is +1/2 and in Neutron it is -1/2 ?

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