Neutron Cluster Explain The Distribution of Dark Matter

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Abstract

Atom passed by photon sphere can be lose all electrons and then its nucleus disintegrate into neutron cluster. It explains the distribution of dark matter and why positron exist in that area.

1 Photon-exchanging mechanism

For the bound neutrons, there are two possible mechanism of forming or disrupting atom structure. Mechanism of disrupting atom structure can be caused when the atom loss all electrons.

1.1 Mechanism of beta$^-$ decay and D$_p$ decay

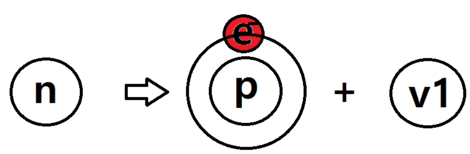

Figure 1: beta$^-$ decay/forming

Mechanism of forming atom structure is given by

$$n^0 \longrightarrow p^+ + e^- + \nu_1 \text{ [1]}$$

where ν_1 is the neutrino stored in atom until it decay. And for the energy conservation, energy of a neutron is given by

$$E_n = E_{p+e+\nu_1} \cdots f.$$

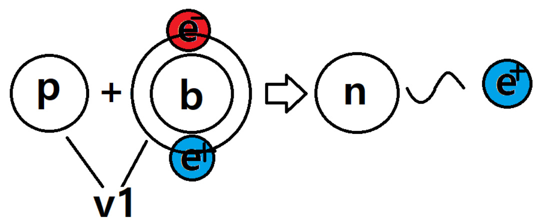

Figure 2: D_p decay/disrupting

D_p decay generally explains the case where all electrons in the atom are lost by photon sphere. Thus, e^- in figure 1 disappears in figure 2.

Mechanism of disrupting atom structure is given by

$$p^+ + \nu_2 \longrightarrow n^0 + e^+$$

where ν_2 is 1.02 mev + ν_1 because of f. $E_{1.02mev}$ from $\downarrow e^+ - b - \uparrow e^-$ and E_{ν_1} from a stored neutrino make possible of a proton turn into a neutron and a positron.

1.2 Mechanism of D_n decay and D_p decay

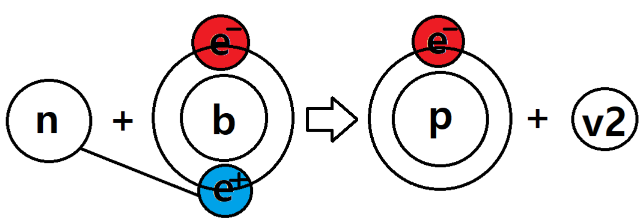

Figure 3: D_n decay/forming

Mechanism of forming atom structure is given by

$$n^0 + e^+ \longrightarrow p^+ + \nu_2$$

where ν_2 is the neutrino stored in atom until it decay.

D_n decay occurs as a neutron and a positron are combined into a proton where the positron is from electron-positron pair near neutron. In case of neutron-cluster, atom can be formed by this mechanism.

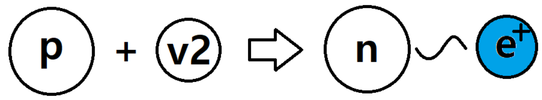

Figure 4: D_p decay/disrupting

Mechanism of disrupting atom structure is given by

$$p^+ + \nu_2 \longrightarrow n^0 + e^+.$$

E_{ν_2} from a stored neutrino make possible of a proton turn into a neutron and a positron.

This is the same D_p decay as in figure 2, except that in this case, the mechanism of atomic structure formation is assumed to be the D_n decay, not the negative beta decay, so it can cause decay itself without $\downarrow e^+ - b - \uparrow e^-$. But this decay - a phenomenon in which a proton decay itself in a short time - must not be observed, since this decay is observed only when the atom loses all electrons by absorbing energy from photon sphere and falls into the black hole. This self-decay is also likely to be misinterpreted as a proton decay whenever it receives energy, but in fact it requires conditions such as lost capacity of covalent bond due to the loss of all electrons, and severe charge instability.

2 Distribution of dark matter

Suppose that the big-bang emerged from the singularity of black hole and additional singularities inside of black hole made present huge galaxies. Define S_o as a black hole which is origin of our universe. A lot of mass pass into S_o are dense at a certain point and generate a singularity. Surrounding masses cause D_p decay by passing photon sphere and lose their electromagnetic interaction ability in atom scale because they turn into neutron cluster for stablity.

The light of 511 kev coming from the center of our galaxy is known to originated from the positron emitted by dark matter[2]. This positron originated from D_p decay. And the distributional relationship between the black hole in the center of the galaxy and surrounding dark matters originated from the singularity of S_o and surrounding masses.

2.1 Problems related to S_o

The phenomenon that galaxies have roughly the same direction of motion for a large scale[3], so-called dark flow is explained by think of S_o as a rotating black hole and also the generating mechanism of supermassive black hole at the beginning of the universe is explained by think of them as singularities of S_o. They were made before big-bang.

The recently discovered non-dark matter galaxy is known to be a loose combination of gas and dust containing a few stars rather than a typical spiral galaxy[4]. This galaxy is not the galaxy which is resulted from the singularity of original field. There was no photon sphere and no D_p decay so there are little dark matter.
The quasar is highly related to the dense region of dark matter[5]. It can be explained by think of quasar as a black hole in S_o. Since dark matter originated from the mass of S_o, the size of black hole and the amount of dark matter are generally proportional.
The asymmetry of matter-antimatter can be explained by the biased matter of S_o. Actually it can be explainded by CP violation but asymmetry caculated from CP violation is not enough to real asymmetry[6]. Bias of S_o can fill the deficiency of that.

3 Conclusion

The past candidates of dark matter(black hole, neutron star, or normal material)are also considered, but the quantities we know of them are inferior to the gravity of dark matter. However, when we apply the hypothesis that our universe is resulted from the black hole singularity, when the big-bang occurs, we start to feel the gravity of masses that originally existed in the black hole and those are irrelevant with after-big-bang material quantities. These masses become neutron cluster by D_p decay passing through photon sphere and surround the black hole which is the center of galaxy in future. Of course these neutron cluster will be dispersed when big-bang occurs. According to this, it is explained that why the distribution area of dark matter is connected to the black hole at the center of galaxy, why it cannot be observed, and why it emit positron[2].

Single neutron decay easily when it in a non-clustered state. On the other hand, there are possiblities of stable neutron cluster. Unfortunately, there are no confirmed data of neutron cluster but the tetraneutron[7] is presumed to be one of those possiblities.

It is difficult to detect neutron cluster through D_p decay because it requires the state of all electrons in atom are lost by photon sphere and only a nucleus remains. However, once we have succeeded in detecting neutron cluster in other ways, we could know whether it is stable or decay into other candidate particle.

4 References

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