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RESEARCH ARTICLE

Positively charged Hydrogen atom(H^+) different from Proton (p^+): Proposed model for constituent particles in positively charged Hydrogen atom(H^+).

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Abstract

Normally it is believed that when a hydrogen atom looses one electron, it can be termed as proton. Here it is suggested that though after the loss of electron from hydrogen atom a positively charge nucleus is left behind but that positive charge is due to positron. On the basis of literature available, a model is proposed showing constituent particles of positively charged H atom. This model states that a hydrogen nuclei consists of neutron, positron and neutrino. A neutron consists of a proton, electron and anti-neutrino. Therefore a positively charged Hydrogen atom(H^+) is different from Proton (p^+).

Introduction:-

Hydrogen atom consists of a positively charge nucleus and a electron in s-orbital around it. Hydrogen atom is electrically neutral. When hydrogen atom losses its electron, the positively charged nuclei is left behind. In present senario, this positively charged nuclei is termed proton. Here it is proposed that the proton is different from positively charged hydrogen nuclei. For this we have considered the available data of decay of proton and neutron into its constituent particles. There may be strong opposition supporting neutron and proton consisting of quarks but this model satisfactorily explains observed subatomic phenomenons like beta decay. This model directly incorporates whatever is reported in literature without any manipulations.

Particles in Neutron:-

Neutrons are found inside the nucleus alongwith nuclear protons. Neutrons do not carry any charge while nuclear protons carry unit positive charge. It is reported that neutrons are stable inside nucleus but a free neutron decays as per following equation:

$$n^0 \rightarrow p^+ + e^- + \nu_e$$

(neutron →proton + electron+ electron antineutrino)[1]

From above equation it can be concluded that neutron consists of a proton, an electron and an electron antineutrino. The same is represented in the fig 1.

Particles in Nuclear proton:-

Here it is distinguised that a proton is not same as nuclear proton. It is reported that in a well known phenomenon of beta decay, a nuclear proton is tranformed into neutron with the emission of positron and electron neutrino.

Nuclear proton change into neutron by

$$H^+ \rightarrow n^0 + e^+ + \nu_e$$

(nuclear proton →neutron + positron + electron neutrino)[2]

From here it can be concluded that nuclear proton contains neutron, positron and neutrino. This is shown in fig 2.

Electron capture by Nucleus:-

A phenomenon called electron capture describes that when a electron revolving around nucleus is captured by the nucleus, it combines with nuclear proton to give a neutron and neutrino as per following equation:

$H^+ + e^- \rightarrow n^0 + \nu_e$
(nuclear proton + electron $\rightarrow$neutron + neutrino)[2]
In the fig 3, we can see that electron annihilates to positron leaving behind neutron and neutrino. Thus the above equation can be explained on the basis of model being formulated here.

Results:-

Overall composition of positively charged H atom (H^+):-
Based on above observation, we can sum up the model as in Fig 4. A positively charged hydrogen atom should contain neuton, positron and neutrino. A neutron should contain a proton, electron and anti-neutrino.

Arrangement of constituent particles in positively charged H atom (H^+):-
This model only reflects composition of particles not their arrangement inside nucleus. Lets try to arrange these particles with reasons. As proton has larger mass amongst all particles in nucleus(as shown in model), center of mass should lie inside or nearby it. We can safely assume it to be in center while electron and positron revolving around it. Electron in the inner shell and positron in the outer shell. Inner shell along with proton can be termed neutron as shown in fig 5.

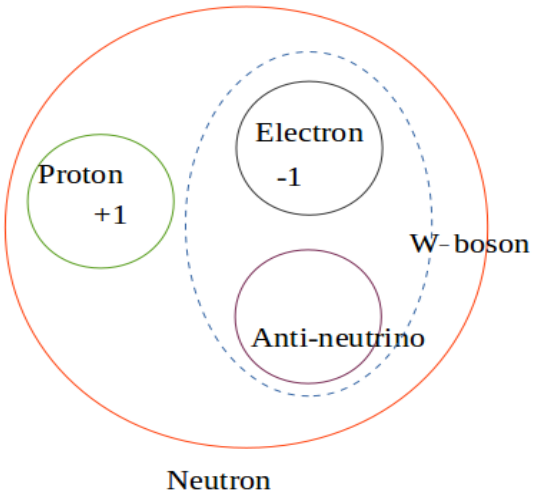
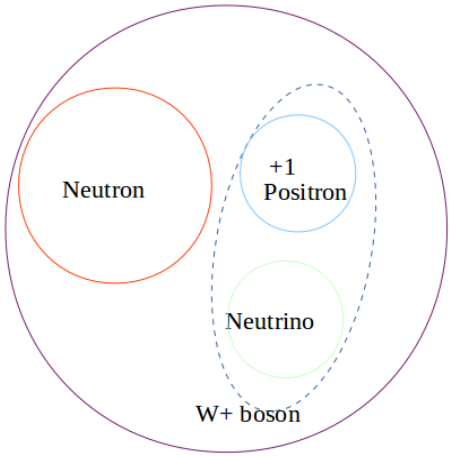


Figure 1



Nuclear proton or positively charged hydrogen atom (H^+)

Figure 2

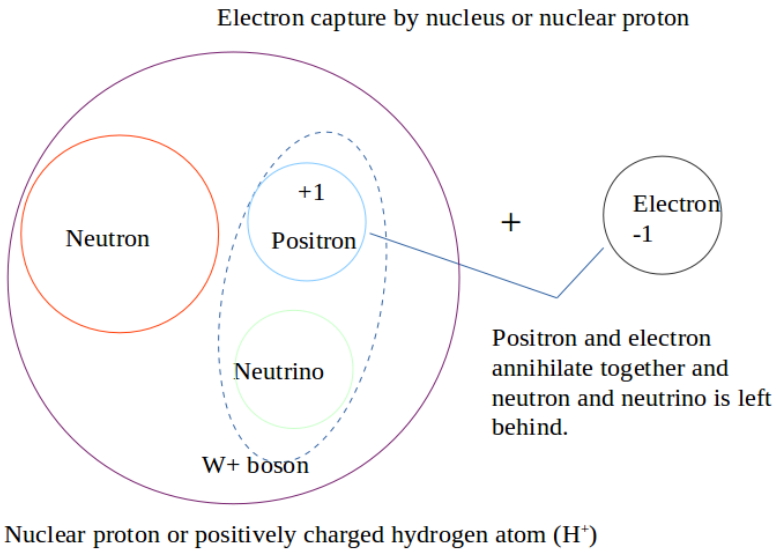


Figure 3

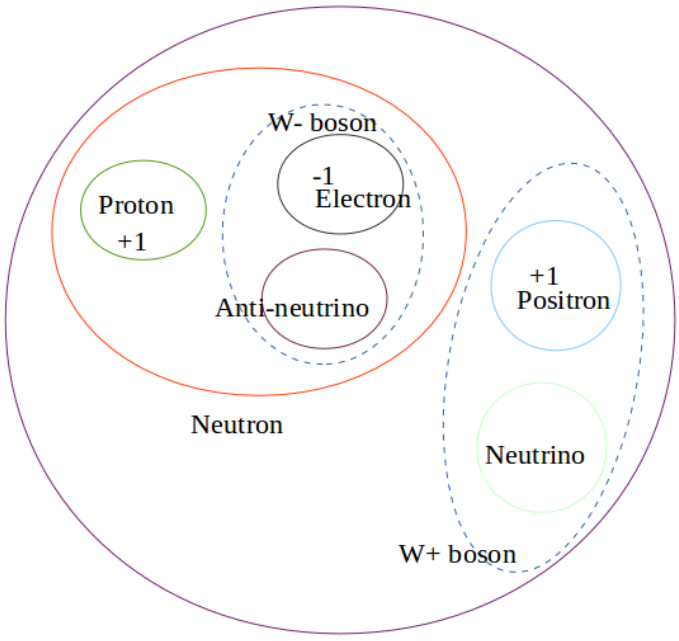


Figure 4

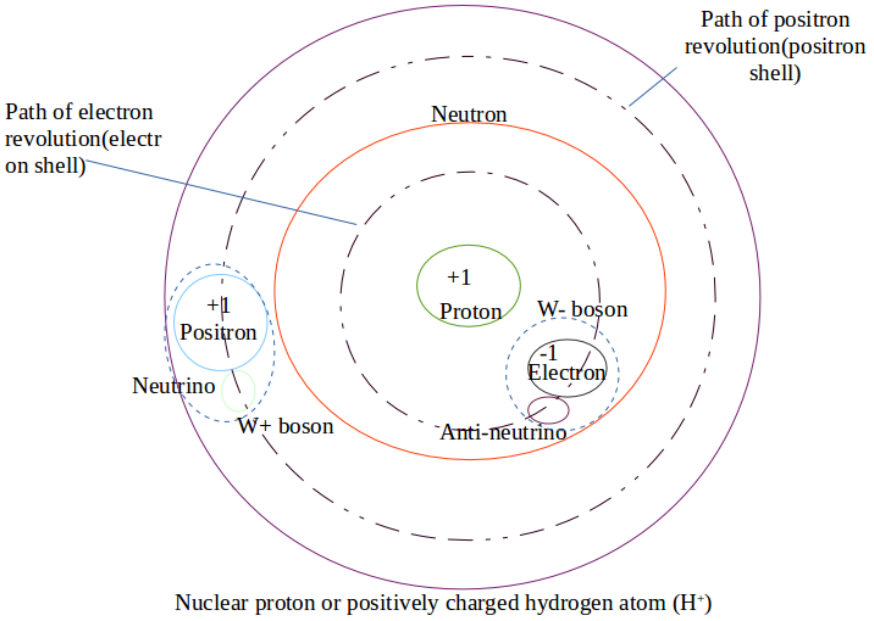


Figure 5

Conclusion:-

It can be safely concluded that a nuclear proton consists of neutron, positron and neutrino. A neutron in turn consists of a proton, electron and anti-neutrino. We observe that nuclear proton or neutron both contains three particles. The model need to be further investigated to consider its possible validation.

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