

How Protons are Attached with Neutrons

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It has always been a mystery how the protons of an atom manage to stick together in an atom. Protons should repel each other. The strong force has been proposed as the mechanism for holding protons together, however, it isn't clear how such a force could work which is extremely strong at close range, but doesn't exist at all at larger ranges. The strong force also doesn't explain why neutrons are present in the atom and what purpose they serve in making the atom stable. This paper proposes that it is actually the neutrons which provide the electrostatic "glue" that is necessary to hold the protons together.

1. First, you have to forget everything

To understand how the atom is constructed out of protons and neutrons and why the neutrons are the glue of the atom, you have to forget everything you think you know about the atom. Specifically, this means that you need to forget about the nucleus consisting of nothing but protons and neutrons and that the nucleus is tiny in comparison to the total size of the atom. Completely forget this idea that the nucleus is in the center with electrons orbiting around the nucleus. Seriously, you need to completely remove that concept from your mind, otherwise you will never understand how atoms are actually constructed. We really don't have very good evidence for the atom being constructed like this and if you think about it for a minute, how can that kind of atom possibly be stable? How can all those protons stick together? The neutrons are "neutral", so all those protons should still repel each other. Furthermore, how can all those electrons maintain their stately orbits and shells. Such an atom should just fly apart instantly.

2. What is a proton?

Have you cleared your mind of all your preconceived notions? Let's start from scratch to figure out what a proton is. Experimentally, there appear to be 3 point objects in a proton. What are these 3 points? Are these fractionally charged Quarks? This is another thing you are going to have to forget about. Quarks have never ever been seen in isolation. If they aren't quarks, then what are they? We do know about the fundamentally charged particles called the electron and positron. The positron is exactly the same thing as an electron except it has the opposite charge. This should NOT be confused with a Proton. Both the positron and proton have the same positive charge, but the proton is 1800 times more massive than a positron. If we were to make a proton out of positrons and electrons, how could we do it? The simplest thing to do would be to make a proton out of two positrons and one electron. Could it be this simple? The proton would have the correct charge and would consist of three point objects, so it does seem possible.

3. What is a neutron?

If a proton is just 2 protons and an electron, then what is a neutron? The simplest arrangement would be a single positron and a single electron. Could it be this simple? The charge would

be "neutral" and so this could represent a neutron. One major objection would be that positrons and electrons are not stable because they "annihilate" in a matter/anti-matter reaction. However, this is yet again, another per-conception that you have to forget. There are many incorrect conceptions which are preventing the proper understanding of the atom and positron/electron annihilation is one of them. Just picture a positron and an electron attached to each other like two magnets. They are attracted to each other and there is no need for them to disappear.

4. How do you glue Protons together?

If a proton is 2 positrons and 1 electron, how do you glue these together in a stable arrangement using only the electrostatic force? You might think of a proton as consisting of a chain of charges such as Positron + Electron + Positron. This is stable because there are two positrons surrounding a central electron. This is a simple array of alternating charges, nothing mysterious about that. So how do we glue together 2 protons? We could just add an additional electron between the two protons:

(P+E+P) E (P+E+P)

Here, we show an electron gluing together two protons. So, we have the concept that protons can be glued together by electrons and only use the electrostatic force. However, there isn't any evidence that atoms consist of long chains of protons and electrons. They form spherical shapes which means that create loops. If we add another electron, then we can glue together the ends of the protons into a ring with alternating charges. It would look like this:



In this picture, the 2 small red circles and 1 small red circle represent a proton. The larger black circle represents an electron which is gluing together the protons. In this picture, the electron gluing the protons together is as large as the proton. This is because the proton is considered to be a "unit" and emits a positive

charge which is the same “size” as the free electron. On the sub-atomic level, it is the magnitude of the “charge” that determines the actual physical size of a particle. So the free electron is the same physical size as the proton in this case. This is another different concept that the size of an object depends upon its charge, not how many particles make up an object. So we can see that electrons can be used to glue together protons into a compact format. However, electrons do not glue together protons, neutrons do. So how are neutrons involved? Remember a neutron is a positron and an electron, so it has the electron that is needed to glue together the protons.

5. Accounting for the free electrons

If the electron that is gluing together the protons is part of a neutron, this means that there is another matching positron that has to be accounted for. These would be located directly below the electron shown in the previous diagram. This would mean that the atom would have 2 extra positive charges. In order to neutralize these 2 extra positron charges, we just need to add 2 more free electrons. The layer of charges below the previous diagram would look like:

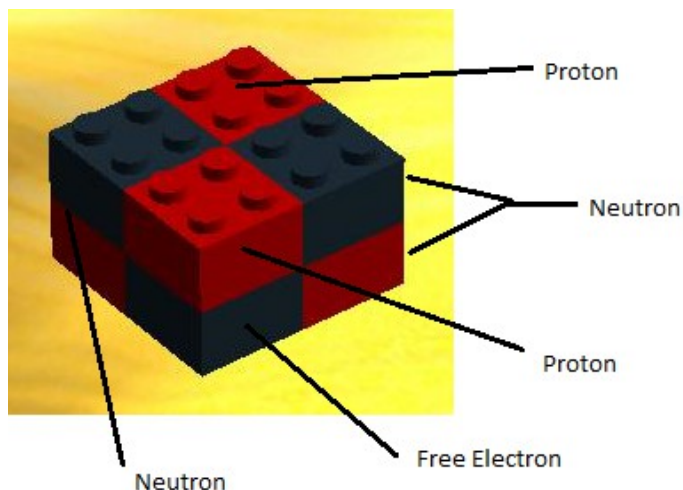


The red circles represent the positron belonging to the neutron. The neutrons are tightly bound like the proton, but the electrons actually aren't tightly bound to anything. Therefore, these 2 free electrons can be removed from the atom while the protons and neutrons remain in the atom and are tightly bound to each other.

6. Does it all add up?

If we add up all the pieces, we have 2 protons, 2 neutrons and 2 electrons. Guess what? This is exactly the composition of a helium atom. This forms a pattern in which only opposite charges are directly touching and is therefore electrostatically stable. The complete helium atom is electrically neutral and exhibits the property that there are 2 unbound electrons which can be ionized from the helium atom. This model of the atom has all of the characteristics that we would expect of a helium atom. It explains why the neutron and its electron is needed to bind together protons. It also explains why there are 2 free electrons needed to neutralize the positron elements of the neutron.

7. What does this look like in 3D?



If we take the two previous diagrams and we stack them on top of each other, we would get something that might look like black and red Lego bricks stacked together. This diagram labels each of the components that make up this Helium atom.

8. Conclusions

This paper has presented a very simple model of how protons in the atom can be attached together with neutrons. New definitions of the proton and neutron as being made up of only positrons and electrons are given which allow the model to only use ordinary electrostatic forces to hold the protons of the atom together. This is a very simple picture, but it does require you to abandon several anti-intuitive concepts such as:

1. The planetary model of the atom which has a tiny nucleus orbited by external electrons.
2. Protons and neutrons are made out of 1/3 fractionally charged quarks
3. Positrons and electrons annihilates and are converted into energy

Do any of these concepts make any intuitive sense? What solid evidence do we have for any of these? Have we ever experimentally seen electrons around a positively charged nucleus? Have we ever isolated a quark? Does it make sense that tangible matter can be converted to energy? Each of these phenomenon have simpler and better explanations. Isn't it more intuitive that oppositely charged particles attract and that is why atoms are stable and have the form that they do? Eventually, I believe that each of these concepts will eventually be found to be wrong and it is exactly these concepts that prevent further advances in atomic science. Can it be this simple? Yes, it can, but you must let go of all that makes atomic physics complicated. This model can be extended to explain all of the larger atoms, the number of neutrons that can attach to an atom and explain how atoms actually attach to form molecules. For a complete description of this atomic model, see the paper “The Cubic Atomic Model” https://www.academia.edu/6193429/The_Cubic_Atomic_Model