

THE EMERGING NEW PHYSICS MYTH OF QUARK FUSION



Images via [CERN](#)

The emerging new physics myth of quark fusion is far more complicated than the myth of thermonuclear furnace that believed to exist at the core of our star. However, the fantasy notion of quark fusion is supposed to involve the fusion of elementary particles known as quarks.

These elementary particles (quarks) are considered to be the building blocks of matter. This quark model is, of course, one of the most widely accepted physics theories. It assumed that protons and neutrons are made up of quarks which have fractional $1/3$ charges. Nothing, however, could be further from the truth.

The quark model is not even wrong, and I will come back to it later, but first, it is worth mentioning that under the current particle physics, the most important subatomic particles, electron, and proton are still mysteries. Although, the electron constitutes the foundations of our industrial technologies its shape is the only feature that we know with a high degree of certainty. Experimental data from state-of-the-art labs have shown the shape of the electron, to be a perfect-or almost a perfect-sphere. And according to my understanding, since the force that rules over the electron is the same one that rules over all subatomic particles, then the spherical shape should be a common feature of these entities. Future research with highly sensitive devices will confirm this fact. In fact, even current scattering experiments have shown the shape of the proton to be indeed spherical, taking into consideration these experiments were not designed to study this specific property of the proton.

Nevertheless, under the current standard model, there are many theoretical concepts associated with subatomic particles that have neither physical reasoning nor empirical evidence. For instance, the concept of "infinite self-energy" associated with the electron and with the so-called charged point-like particles, in general, is an embarrassment issue, rescued or rather covered by a mathematical notion, which is known as renormalization.

But, there is nothing normal about renormalization other than the distortion of physics facts. In addition, to the wrong theoretical notions connected with the electron that started to be exposed, other precise measurements from highly sophisticated experiments have revealed the defects of theoretical concepts associated with the proton. The recently recognized variation of its charge radius is a new and another serious problem facing the standard model of particle physics. The variation of the proton radius is clear evidence that refutes the fundamental assumption which assumes particles interact with each other in the same way. In physical reality and as it can be observed particles do not interact with each other in the same way as QCD claims. Besides that, the so-called proton spin crisis which was first observed in 1987, still without a real solution. Spin is an important property of particles, but the underlying theory is not adequate for explaining it.

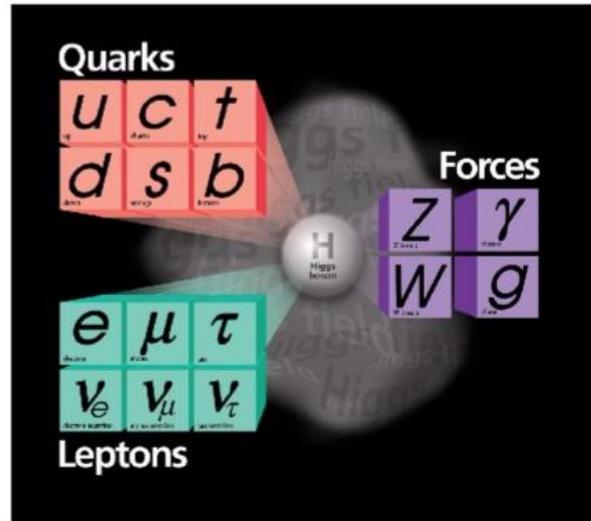
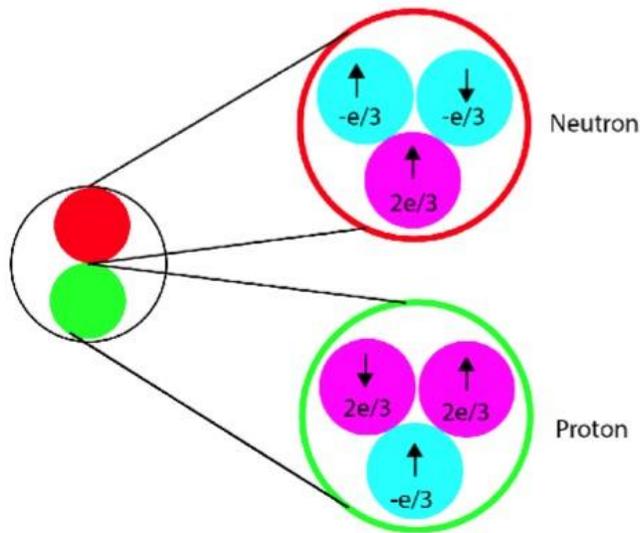
In the last three years, the unrealistic aspects of the standard model of particle physics have become more obvious. Researchers at CERN have used LHC and smashed protons at 13 trillion electron volts, trying to see if new particles would appear at these energies. "We had a long time without data, and during that time many theorists thought up very compelling ideas. And those ideas have turned out to be wrong."

The absence of new particles from the latest data of LHC and the accurate measurements showing a perfectly spherical electron are both dead blows to the hypothetical notion of Supersymmetry. In fact, even before these latest revelations, no one has found any evidence of Supersymmetry despite decades of searching. These experimental findings and lack of them are empirical truths that show the obsolescence of not only the Standard Model of Particle Physics (SMPP) but also the Standard Model of Cosmology (SMC). Without a doubt, the SMPP cannot possibly be considered as a physical model, just like the SMC, and the root cause for the invalidity of the two models is exactly the same.

However, the muon anomalous magnetic moment ($g - 2$) and the proton spin crisis have long been good indications to the obsolescence of the SMPP. Moreover and independent of any experimental finding, the lack of physical reasoning of the Quark Model (QM) is abundantly clear. It depends entirely on mathematical symmetries and non-physical entities. The so-called Feynman diagrams are the cornerstones of the model and they depend on virtual particles. The mass-energy equation and the hypothetical space-time are the root causes that led to the fallacious concepts of virtual particles.

Feynman assumed that photons, after the annihilation of electrons and positrons would decay into electrons and positrons. "The interactions of neutral particles create charged particles." He also assumed that the repulsion force between two electrons is due to the reason that one electron emits one virtual photon and rebounds, while the second electron absorbs the photon and gains its momentum. That means the impact of the second electron with the photon and the rebound of the first one cause the electrons to move away from each other.

Also, according to Feynman, the positron is nothing more than an electron propagating backward in time. You can see in his diagrams that the so-called antiparticles are represented as moving backward along the time axis. On the other hand, he assumed that the attraction between electron and positron can be explained in the following way. The electron emits a virtual photon with momentum directed away from the positron and rebounds towards it. But, this concept is in a direct contradiction to the well known Universal law of attraction. Feynman's diagrams are based on the wrong believe that photon carries the electromagnetic force. In other words, Feynman assumed that when electron and positrons move they are able to emit photons without charge-charge interaction. But, in physical reality, the photon is emitted not as a result of moving electron, but rather as a result of magnetic charge interactions (charge-charge interactions).



Featured image: Quantum diaries Credit: Getty Images

Additionally and more importantly, the unphysical nature of the model can be seen in the fractional electric charge of the quarks. First of all, there can be no physical entity that has fractional electric charge. This fact alone shows that the model is absolutely wrong. If the model was correct, then the electric charge of the building blocks of matter should be integer numbers, not fractional ones. Besides that, these hypothetical fractional electric charges have not been observed, since quarks and gluons cannot be isolated. There is absolutely no direct evidence—since 1960s— in any experiment showing a fractionally charged particle of any kind.

Moreover, inelastic scattering experiments did not show $2/3e$ or $-1/3e$ fractional charges at all. Instead, a theoretical concept (hypothetical notion) known as "sea quark" was introduced with the assumption that gluons inside the proton create new pairs of quarks and anti-quarks, which possess small momentum. Due to these "sea quark", each quark's momentum becomes less than $1/3$. Thus, one wonders why it is assumed that the quark model has been experimentally verified.

Physicists, of course, consider jets in particle accelerators as proof of the quark model. But, that cannot possibly be considered as real experimental evidence of the existence of the quarks. Hard and soft collisions are used as a primary indication whether the particle is composed or not. For example, the protons have soft collisions, while the electrons have a hard one. But, this should not be interpreted as evidence that the electron is an elementary, while the proton is not. Why not the reason that the electron is strongly bound and the current accelerators are not strong enough to smash it? In fact, this is exactly the reason. Particle accelerator

with magnetic field intensity several orders of magnitude higher than the current ones are needed in order to isolate the sub-particles that make up the electron and other strongly bound entities that are currently believed to be elementary.

Thus, it is obvious that the fractional electric charge concept is a valuable proof that the triplet model of quarks composition is absolutely wrong. There can only be three different types of electric charges in nature $+1e$, $-1e$ and 0 accompanied by three different types of particles. And the electric charges of the real building blocks of matter are $+1e$, $-1e$. The observations that convinced physicists about the existence of the quarks are only fraction of the truth about the real constituents of subatomic particles. A theory with the partial truth is worse than a totally wrong theory because it makes it much harder to be able to tell the difference between the two. Therefore, it is obvious that the new theory of quark fusion is pure nonsense and physically baseless.

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