

The Historical Limitations of Quark Model and QCD

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Abstract: According to the background of propose and establish, analysis and points the historical limitations of Quark Model and QCD.

Main Viewpoints & Conclusions:

In nuclear physics and particle physics, the nuclear force, is generated by π -mesons and play a role (whether it is "exchange" or "share"), therefore, π -mesons is the only intermediate small parameter or is the only basic and smallest parameter of the nuclear force, so, in the nucleus, there must be exist π -mesons (which is a must; otherwise, the nuclear force will not exist).

In nuclear physics and particle physics, an atomic nucleus composed only by two nucleons which of "neutrons" and "protons" (there is no third nucleons), in the nucleon's levels, there is no any others nucleon besides "neutrons" and "protons".

Basing on the above two points: in a nucleus, there must be exist π -mesons, but these π -mesons are not (not allowed) in the levels (scales) equals of nucleons.

Does not exist outside of space; so, inform the nucleons internal potential, development, and additional quark-level seats, and π -mesons and nucleons are defined by the decomposition of quarks, creating living space for π -mesons and neutrinos, then there is a Quark Model and Quantum Chromo Dynamics (QCD).

In the whole, The Quark Model and Quantum Chromo Dynamics (QCD), is a kind of exploration which in the unclear of the hadrons and nucleons structure and properties; the structure and properties of the π -meson; and the relationship between π -meson and nucleons in structure; in particular, a π -meson is a part of a neutron; as a shell and afterbirth in the form of Soft electric-charged matter, covered and wrapped with the proton ^[1] (a study shows a neutron has a positively charged core of radius about 0.3 fm surrounded by compensating negative charge between 0.3 and 2 fm).^[2; p156]

References

- [1] *The Basic Structure and Properties of Hadrons* <http://vixra.org/abs/1407.0015>
- [2] J.-L. Basdevant, J. Rich, M. Spiro, *Fundamentals in Nuclear Physics*, 2005, Springer.