

# The Charge Non Conservation in The decay of A Neutron Made of Quark Model

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**Abstract:** Showing the charge non conservation in the decay of a neutron that made of quarks according to quark model.

## Main Viewpoints & Conclusions:

In the [1], we know, a free neutron is unstable, having a mean lifetime of just less than 15 minutes ( $881.5 \pm 1.5$  s) from a radioactive decay known as beta decay, and:

**a neutron  $\rightarrow$  a proton + an electron + a neutrino ( or an antineutrino) (i)**

And there be: a proton charges +1; an electron charge -1; and a neutrino (or an antineutrino) no charge.

By the *Law of charge conservation*[2] and ( i ), we have know a neutron should be charge +1 and -1.

In the quark model, there be: neutron = udd, u charge  $2/3$ ; d charge  $-1/3$ ; and dd charge  $-2/3$ . and  $2/3 + (-2/3) = 0$ . [3; page.11] It is able to meet the neutron is not significant feature of the electrically.

And for the neutron charge  $+2/3$  and  $-2/3$ , then, there be:

**a neutron(charge  $+2/3$  and  $-2/3$ )  $\rightarrow$  a proton (charge +1)+ an electron (charge -1) + a neutrino ( or an antineutrino and no charge).**

The total number of the charges occurred proliferation in the process. Then we get, there be exist non conservation of charge in the decay of a neutron that made of quarks according to quark model.

## References

[1] Neutron <http://en.wikipedia.org/wiki/Neutron>

[2] Charge conservation [http://en.wikipedia.org/wiki/Charge\\_conservation](http://en.wikipedia.org/wiki/Charge_conservation)

[3] J.-L. Basdevant, J. Rich, M. Spiro, *Fundamentals in Nuclear Physics*, Springer, 2005