

# The Neutrino Has No Its Own Antiparticle

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Abstract: showing the viewpoint of neutrinos has no its own antiparticle and the basis

## Main viewpoints and conclusions:

The idea of the antiparticle came about in 1928 when British physicist Paul Dirac developed what became known as the Dirac equation; Dirac predicted that, almost every particle has an antimatter counterpart: a particle with the same mass but opposite charge, among other qualities.<sup>[1]</sup>

Besides, in 1937, Italian physicist Ettore Majorana had developed another theory: neutrinos and antineutrinos are actually the same thing. The Majorana equation described neutrinos that, if they happened to have mass after all, could turn into antineutrinos and then back into neutrinos again.<sup>[1]</sup>

Now, continue discussing the issue that regards to the antiparticles of neutrinos in here,

Since the only difference between a particle and its antiparticle just is with in opposite charge.<sup>[1][2]</sup> and the neutrino has neither positive charges nor negative charges, then, we get the antineutrino of the neutrino has neither negative charges nor positive charges – it also is an electrically neutral particle. This result shows there no exists a kind of particles which with the same mass, opposite charge, among other qualities suitable for and match with the neutrino.

Simultaneously, if neutrinos and antineutrinos are actually the same thing—a neutrino is its own antiparticle, then, it would be annihilated with its self or annihilated with another neutrino which touching it, and there exist no any neutrinos in the Universe now.

So, the neutrino is the kind of electrically neutral elementary particle that has no its own antiparticle (antimatter counterpart).

## References

[1] *Is the neutrino its own antiparticle?*

*<http://www.symmetrymagazine.org/article/is-the-neutrino-its-own-antiparticle>*

[2] *Antiparticle*

*<https://en.wikipedia.org/wiki/Antiparticle>*