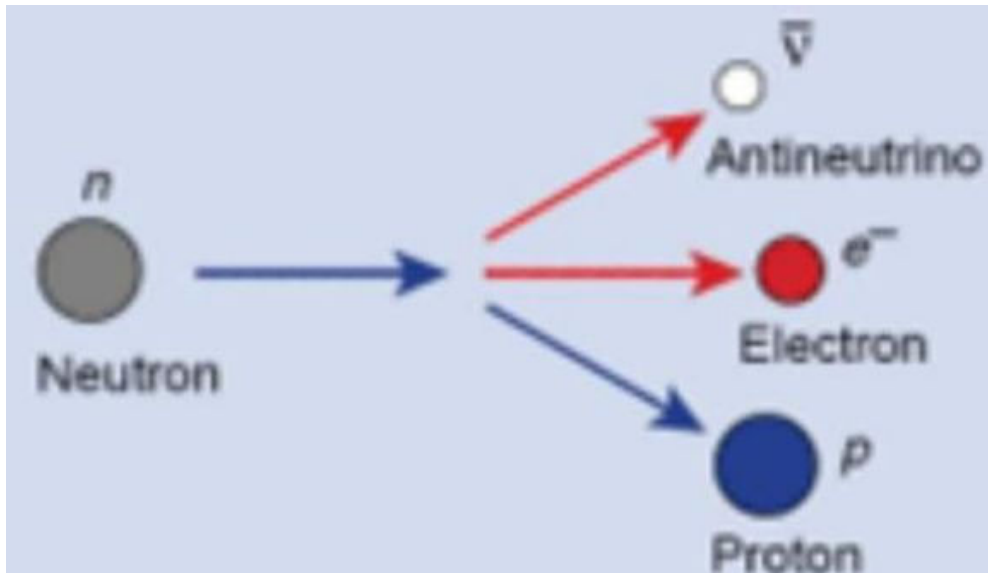


Determining the Mass of a π -Meson and a Neutrino

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Abstract: Determine the mass of a π -Meson and a Neutrino



The picture from the network, and not for any commercial purposes, thanks to authors

Main Viewpoint & Result:

We know,^[1] there be

a Neutron = a Proton + an Electron + a Neutrino (or an Antineutrino)

a π -Meson = an Electron + a Neutrino (or an Antineutrino)

$M_n = 1.008665u$; $M_p = 1.007276u$; $M_e = 0.00054858u$; and $1u = 1.660565 \cdot 10^{-27}kg$

And we have

$$M_\pi = M_e + M_\nu; \quad M_n = M_p + M_\pi = M_p + M_e + M_\nu$$

Then, there be

$$M_\pi = M_n - M_p = 1.008665u - 1.007276u = 0.001389u$$

and

$$M_\nu = M_n - M_p - M_e = 1.008665u - 1.007276u - 0.00054858u = 0.00084042u$$

Comprehensive above, we have, the mass of a π -Meson is $0.001389u$, or $1.3m_0c^2/MeV$; the mass of a Neutrino is $0.00084042u$, or $0.78131576069125 m_0c^2/MeV$; and the mass of an Antineutrino also is $0.00084042u$, if there be exist Antineutrinos.

Reference

[1] A New Model of a Neutron Based on π -Meson <http://vixra.org/abs/1405.0206>