EXPANDING RELATIVE THEORY TO INCLUDING SUPPER-C-NEUTRINO

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Abstract. This article expands the classical velocity to surpassing that of light and does not vary the formula of Relative Theory, to construct a theory well explains the current measures like the velocity and energy of neutrinos tested between Gran Sasso and Cern.

The Relative theory says

$$x = Rx'$$

R is a rotation in flat-straight Einstein Space, and Einstein adds: the rotation does not lead to surpassing velocity of light for classical objects. Now we discard the saying of his.

Think about a ν with a momentum

$$p, E$$

The ν is emitted from a neutron hence

$$p_n = p_p + p_\nu + p_e$$

It's of course the gross static mass is conservative

$$m_\nu = m_n - m_p - m_e = 0.092MeV$$

The pure harmonic wave of ν is

$$e^{ipx+iEt}$$

in which

$$E = p + m_\nu$$

The velocity of its front is

$$v = E/p$$

By the recent measure of ICARUS [2]

$$E = 7.4GeV$$

and the little earlier result of Gran Sasso-Cern[1]

$$v/c = 1 + 5 \times 10^{-5}$$

the balance of this formula is like

$$5 \times 10^{-5} == m_\nu/E = 0.092M/7.4G = 1.24 \times 10^{-5}$$

The feelings seems tolerable. The only problem is

$$p > E, m < 0$$

but this is unavoidable.

References

[1] OPERA Collaboration, T. Adam et al., Measurement of the neutrino velocity with the OPERA detector in the CNGS beam, arXiv:1109.4897

[2] M. Antonello et al. A A search for the analogue to Cherenkov radiation by high energy neutrinos at superluminal speeds in ICARUS. arxiv.org/abs/1110.3763

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