Problem of Superluminal Neutrino

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Abstract

Because the muon neutrinos which OPERA Collaboration launched were given an impulse more than "πmc/2", they entered into Minus world and did superluminal motion in there without going against the special theory of relativity. After losing energy in there, they appeared in our world and were observed. The superluminal interpretation of OPERA Collaboration is very reasonable.

OPERA Collaboration measured the speed of high energy muon neutrinos [1]. They launched high energy muon neutrinos from CERN. They got the result of measurement that the muon type neutrinos arrived at the detector of Gran Sasso in the central part of Italy earlier than expected in the speed of light for 60 nanoseconds. This shows that the speed of the muon type neutrinos is faster than the velocity of light only in approximately 0.0025%.

I would like to explain this result by my theory. My theory of Minus world and imaginary numbers shows following conclusions.

Assume mass of a certain matter is "m". "c" is the velocity of light. According to "Road to Star Ocean"[2], if this matter is given an impulse more than "$\pi mc/2$", the matter enters into Minus world and does superluminal motion in Minus world without going against the special theory of relativity. And it returns to Plus world of our world, after it loses some energy in Minus world and slows down.

According to "Theory of Worlds"[3], this Minus world holds three space dimensions of 11 dimensions that the M theory predicts. The dimensional compactification does not exist, and Minus world is the vast world like our world. But it is thought that Minus world is the world of the antigravitational matter.

My explanation by my theory is as follows. Neutrinos have mass, too. Assume the mass of a neutrino launched at CERN is "M". This neutrino was given an impulse more than "$\pi Mc/2$" and entered into Minus world and did a superluminal flight in Minus world and it lost some energy in Minus world and slowed down and appeared in our world. Afterwards it arrived at the detector of Gran Sasso.

The problem that neutrinos generated by the supernova explosion [4] arrived at the earth almost simultaneously with light is explained as follows. Because the sizes of impulses given to the neutrinos by the supernova explosion were not enough big, it is thought that a great difference was not developed.

I would answer about the question pointed out by Sheldon Glashow and Andrew Cohen [5] of Boston University. In our world, even a matter given an impulse more than $\pi mc/2$ cannot get faster than the velocity of light. It does superluminal motion in Minus world and we in our world cannot observe a slowdown phenomenon in Minus world. If matters are given an impulse more than $\pi mc/2$, all of them enter into Minus world and do superluminal motion. But, in our world, none of the matters can get faster than the velocity of light.

References

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[4] KAMIOKANDE-II Collaboration, K. Hirata et al., “Observation of a Neutrino Burst from the Supernova SN 1987a,” Phys.Rev.Lett. 58 (1987) 1490–1493.

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