Look at Bases of Physics

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ABSTRACT: It has been explained what difficulties should be overcome while looking for tachyons (machyons). The role of Cherenkov effect has been presented in this process. Starting with 'Pythagorean theorem' the dependence m(v) has been discussed. It has explained why the relation q/m is different for different objects. Analysing the experiment with two slits the potential coupling the particle with the Dirac see has been introduced.

1. It is difficult to discover tachyons (machyons) becouse they move in 8 dimensions. We can see only the projection of their movement on 4-dimensional space-time.

   Morover, if:

$$v^2 = v_1^2 + v_2^2 + v_3^2 + \ldots + v_7^2 > c^2$$

   then it may be

$$v_1^2 + v_2^2 + v_3^2 \leqslant c^2$$

   So an object interpreted as 'normal' can be in the reality machyon (tachyon).

   At first one should discover 4 additional dimensions and then look for tachyons and machyons.

2. In the case of the Cherenkov effect we have the situation when the velocity is bigger than the velocity of light and here one can look for particles with complex mass. That's true that c/n isn't the limit velocity in the dependence m(v) but the vacuum isn't empty either and the velocity of light is the velocity in a certain medium.

   That's a problem if the velocity of light is a limit velocity - it means if the rest mass of photon is precisely equal zero.

3. In the equation

$$E = \pm \sqrt{m_o^2 c^4 + p^2 c^2}$$

Dirac didn't reject the negative solution. It means that one should take under consideration all solutions of the equations and reject none.
In the equation

$$m = \frac{m_o}{\sqrt{1 - \frac{v^2}{c^2}}}$$

one should take m, m_o and v real, negative, complex, radically complex, quaternions, generalized quaternions, 2^n - nions.
It is only the relation between m, m_o and v . One can't exclude any solutions for m, m_o and v connected by this formula.

4. We have the equation $m = \alpha q$, so mass and charge are equivalent. But the question arises why the same charge is equivalent to different portions of mass in the case when it isn't particle-antiparticle pair.
The answer is easy. Each particle participates in the gravitational interaction, some of them in the electromagnetic one, some of them in the strong one.
The charge is connected with every interaction, so the mass as well. Mass, being the sum of the contributions of different interactions, is different becouse the number of interactios in which different particles take part, is different.
We have

$$m = \sum_i^N \alpha_i |q_i|$$

and it may be even $N = \infty$, but i may mean different indices.

So mass is different for different particles, although electric charge is the same, becouse it isn't the only charge.

5. The question arises why we lose the interference pattern in the experiment with two slits if we observe an electron. It seems that it shouldn't be so if the electron and the Dirac see exist separately.
This fact supports the idea that there exists certain binding potential, similar to the potentials limiting a bit free journey backwards the time. So we have next fetters.
Certain potential coupling electron with the Dirac see exists.