Consequences of Matrix of Mass

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ABSTRACT: The invalidity of two-component Weyl's equation and the necessity of using of full Dirac's equation is the consequency of nonzero rest mass of neutrinos and it implicates the existence of right handed neutrinos. This next meant the necessity of introduction of the generalized state of neutrino, described by matrix of mass, the particular state of which the known neutrinos are. Similarly the matrix of mass has been used for Higg's boson and gravitons.

1. Neutrino

If neutrino has only one value of spin, it should be described by only two Dirac's equations for particle and antiparticle. So Dirac's equation should be reduced to Weyl's equation with matrices 2 x 2 [1] .
But it isn't so, becouse the neutrino has nonzero rest mass [2] . It means that the full Dirac's equation described by matrices 4 x 4 is needed.
So the states neutrino, antineutrino are special cases of the more general state corresponding with the mass expressed by matrix 4 x 4 .
The Dirac's matrices 4 x 4 mean that there are two polarizations of neutrino, so, in general case the superneutrino particle exists, the mass of which is described by matrix 4 x 4.
Both states of neutrino are the manifestation of bigger generalized state, for which they are only special cases.

2. Higgs' boson and graviton

Higgs' boson - similarly as generalized neutrino - can have the generalized matrix state.
These matrices are matrices n × n, where n is the number of dimensions of the space in which generalized boson Higgs' propagates.
Mass of graviton can be expressed by the matrix 4 × 4 (or more generally n × n - as earlier) and so graviton is difficult to discover.
The graviton has mass described by matrix, it is the matrix of the effective mass.
There is the mixing of interactions, becouse all particles interact gravitationally.
So the pure graviton doesn't exist, which theoretically could appear only at the case of absence of other interactions.

3. Consequences

The matrices $\begin{bmatrix}1&0\\0&0\end{bmatrix}$ $\begin{bmatrix}0&1\\0&0\end{bmatrix}$ $\begin{bmatrix}0&0\\1&0\end{bmatrix}$ $\begin{bmatrix}0&0\\0&1\end{bmatrix}$ [3] representing the quanta electroweak interactions may create matrix being linear combination of these four matrices with any coefficient.
This matrix is an analog of generalized Higgs' boson and generalized neutrino.
The right-handed neutrino exists even without the referring to the conception of mass matrix from the article [4].
It results from the invalidity of Weyl's equation becouse of the nonzero rest mass of neutrino.
8 component spinor in the Dirac's equation for proton and neutron - together nucleon - confirms the conception of 8-dimensional space.
The right handed neutrino and left handed antyneutrino can propagate in 4 additional dimensions perpendicular to our 4 dimensions.

The generalized neutrino, described by matrix, propagates in all 8 dimensions.
The total neutrino is the sum of left-handed neutrino and right-handed neutrino [5].

$$u = u_L + u_R$$

The complex photons are the analogs of right-handed neutrinos.

The matrices of mass $n \times n$ must have n equal to the classical number of dimensions of the Universe, so $n = 4, 8, 10, 11, 26, 44, 52, 104$. [6].

References:

[1] Björken J.D., Drell S.D., 'Relativistic Quantum Mechanics'

[2] Nobel's lectures - internet

[3] Close F., 'The Cosmic Onion, Quarks and the Nature of the Universe'

[4] Morawski Z., 'Implications of Complex Mass' - this website