Abstract Submitted
for the APR15 Meeting of
The American Physical Society

Anomalous Electric Charge of a Neutrino of True Neutrality
RASULKHOZHA S. SHARAFIDDINOV, Institute of Nuclear Physics, Uzbekistan Academy of Sciences, Tashkent, 100214 Ulugbek, Uzbekistan — Any dipole arises as a result of a kind of charge. Therefore, if each neutrino having a C-even or a C-odd charge possesses a mass of a vector (V) or an axial-vector (A) nature, from the point of view of mass-charge duality [1], the steadiness of an axial-vector electric charge distribution in all C-noninvariant leptons ($l^A = e^A,\ \mu^A,\ \tau^A, ...$) must be accepted as the intralepton harmony of axial-vector types of forces. Then it is possible, for example, to present the anapole ($i = 1$) and electric dipole ($i = 2$) form factors G_{il^A} depending on the momentum transfer square q^2 in the form

$$G_{il^A}(q^2) = g_{il^A}(0) + R_{il^A}(q^2) + \Phi_{il^A}(\vec{q^2}) + ..., \qquad (1)$$

where g_{il^A} define the static anapole and electric dipole, R_{il^A} characterize the dependence of form factors G_{il^A} on the lepton axial-vector radius. The functions Φ_{il^A} describe the anomalous behavior of axial-vector currents. Thus, a neutrino of true neutrality similarly to all other the axial-vector leptons must possess the anomalous electric charge of C-noninvariant nature. Such a type of charge says about the existence in neutrino of a kind of inertial mass.

[1] R.S. Sharafiddinov, Bull. Am. Phys. Soc. 59(5), T1.00009 (2014).

Rasulkhozha S. Sharafiddinov
Institute of Nuclear Physics, Uzbekistan Academy of Sciences,
Tashkent, 100214 Ulugbek, Uzbekistan

Date submitted: 02 Jan 2015 Electronic form version 1.4