

Abstract Submitted  
for the SES12 Meeting of  
The American Physical Society

**Vector Currents of Massive Neutrinos of an Electroweak Nature** RASULKHOZHA SHARAFIDDINOV, Institute of Nuclear Physics, Uzbekistan Academy of Sciences, Tashkent, 100214 Ulugbek, Uzbekistan — The mass of an electroweakly interacting neutrino consists of the electric and weak parts responsible for the existence of its charge, charge radius and magnetic moment. Such connections explain the formation of paraneutrinos, for example, at the polarized neutrino electroweak scattering by spinless nuclei. We derive the structural equations which relate the self components of mass to charge, charge radius and magnetic moment of each neutrino as a consequence of unification of fermions of a definite flavor. They indicate to the availability of neutrino universality and require follow its logic in a constancy law dependence of the size implied from the multiplication of a weak mass of neutrino by its electric mass. According to this principle, all Dirac neutrinos of the vector nature regardless of the difference in masses, have the same charge, an identical charge radius as well as an equal magnetic moment. Thereby, it opens the possibility for establishment of the laboratory limits of weak masses of the investigated types of neutrinos. Finding estimates show clearly that the earlier measured properties of these particles may testify in favor of the unified mass structure of their interaction with any of the corresponding types of gauge fields.

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

Date submitted: 11 Sep 2012

Electronic form version 1.4