

The Origin and Its Meaning

The Neutrino

The neutrino was first proposed in 1930 to solve the problem of missing energy and momentum in certain nuclear radioactive decays.

The neutrino was then developed theoretically; however, a neutrino was not detected until 1954, and only by immense effort.

The problem in detecting, and studying, neutrinos is that they can completely penetrate matter with ease.

- The Sun's nuclear processes, which generate our sunlight, also produce a continuous flow of neutrinos.
- Almost all of those that encounter the Earth pass completely through without any interaction at all.

The reason for this behavior and the detailed nature of the neutrino are still a puzzle to 20th Century physicists.

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does for physics what Euclid did for geometry -- it supersedes mere empirical conclusions with derivation of all of physics.

In brief simplified summary, the nature of the neutrino develops as follows.

- When atomic orbital electrons fall to inner orbits their lost energy and momentum go to an emitted photon.

When atomic nuclear (or free) neutrons decay into a proton - electron pair the lost energy and momentum go to an emitted neutrino.

- The photons have angular momentum because their cause includes a change in angular momentum.

The neutrinos lack angular momentum because their cause lacks an angular momentum change.

- Photons can interact with orbital electrons, an event that requires angular momentum

Neutrinos cannot interact with orbital electrons, because they lack the requisite angular momentum.

A neutrino is a photon with negligible or no angular momentum and consequently is so difficult to detect.