Neutrino and nucleus interaction

According to Fermi's theory, the neutron decomposes into a proton, an electron, and an electronic neutrino. It's not certain that is an ant-neutrino as you can find on the web:

"As I said before though, it's not 100% certain that neutrinos aren't their anti-particles." Thus it's a Majorana fermion (Reference https://www.physicsforums.com/threads/neutron-proton-electron.5979/) which is a fermion that is antiparticle and obeys the Majorana equation. The form of Majorana representation of gamma-matrices:

$$i\Upsilon^{-\mu}\partial_{\mu}\psi - m\psi = 0$$

(1)

Where all coefficients are real, we can take Ψ as the real function (for the Majorana fermions we must take Ψ as the real function). "They were hypothesized by Ettore Majorana in 1937. The term is sometimes used in opposition to a Dirac fermion, which describes fermions that are not their antiparticles. Except for the neutrino, all of the Standard Model fermions are known to behave as Dirac fermions at low energy (after electroweak symmetry breaking), and none are Majorana fermions. The nature of the neutrinos is not settled, they may be either Dirac or Majorana fermions".

http://inspirehep.net/record/15706/files/v14-n2-p69.pdf

We make the supposition that the v anti-neutrino does not exist (its antiparticle).

In the reaction of Fermi's theory, we have neutron decay into proton, electron and anty electronic neutrino thus a v is a Majorana particle of energy 0.00038eV in the decay:

 $n + \tau \xrightarrow{decay} p + e + \nu + \mu$ (2)

The reactions from the sources nucleus and destination nucleus; An electronic neutrino v collides with a proton generating a neutron, a positron, and a µ neutrino and evolves according to the steps below at the nucleus the reactions are continuous and the transformations are as follows where the abbreviations are: the sign \hat{i} is emission and \check{i} is absorption and the brackets are for grouping decay:

 $p + [v \xrightarrow{transform} n + positron + \mu] \xrightarrow{decay} (p + e + v]) + positron = p + (e + positron) = p \quad (3)$ And τ neutrino will collide with proton generating the process of continuous migration of pairs protonsneutrons generating gravity, magnetron, and the µ neutrino that generates the hologram of space and A particle; We will analyze helium $_{2}$ He⁴ two pairs of binding spin proton-neutron. (4):

 $p + |\tau + n \xrightarrow{transf} 2n + posit + \nu + mag + A| + \mu| \xrightarrow{decay} (p + e + \nu|) + n + posit = p + \mu| + e + posit + n = p + n$ Thus there must exist at least 2 nucleons in a specific amount of time of around $\sim 10^{-7}$ seconds to interact (mag) with two pairs of binding spin proton-neutron that change state each other and exchange magnetron. As you can see from the initial proton in an atom nucleus emits a v neutrino and a μ neutrino absorbs a v neutrino and a τ neutrino to trigger the reaction and results in the pair of binding spin proton-neutron that change state each other and exchange magnetron. In this way, the generation of gravity is provoked by the absorption and generation of a v neutrino.

The gravity at the nucleus level between 2 nucleons is smaller than the electrostatic forces of rejection between the 2 protons of Helium but is applied for a shorter period about ten times less than the process of attraction between nucleons. The transformation of neutron when receiving an τ neutrino:

 $n + \tau \xrightarrow{decay} p + e + \nu$ is in a $4 \cdot 10^{-7}$ sec and the transformation. $p + |\tau \xrightarrow{transform} n + positron + \mu|$ take place in a $4 \cdot 10^{-7}$ sec while the attraction between nucleons is always. Thus, the nucleons are constrained into a shell and that explains the stability of the nucleus and the magic number of protons and neutrons. There's somehow a dance of nucleon into the nucleus that does create the gyromagnetic ratio of atom nuclear magnetic moment of the atom par-impair or impair-par. So the nucleons are most of the time neutrons and for a short period, some of them turn into protons. The nucleons that change v neutrino have quantum attraction forces that depend on constant distant R= $3.567 \cdot 10^{22}$ m and radius r:

$$F_{g1} \sim \frac{3R^2}{14 \cdot \pi} \cdot \frac{1}{r^2} - \frac{R}{4 \cdot \pi} \cdot \frac{1}{r} + \frac{1}{14 \cdot \pi}$$

Thus 1 Newton of trust (102g) means the attraction nucleons according to file: grav.mw

The gluons carry strong nuclear forces. There are 4 fundamental forces magnetic, electrostatic (Coulomb), gravity, and strong nuclear force. The strong nuclear force is responsible for the attraction between nucleons but with the aid of magnetic spin force that aids the stability of the nucleus. The electrostatic repelling between nucleons combined with the gravitational force, all 4 balances the pulsating electrostatic force of

repulsion that changes every ~ $4 \cdot 10^{-7}$ sec. The protons in the nucleus of Helium are ~ $4 \cdot 10^{-7}$ sec rejected by the electrostatic forces and attract strong nuclear forces, magnetic and gravitational forces. For distances ~ 10^{-15} m, the magnetic force of attraction for the particle that changes magnetrons is almost as electrostatic repulsion between protons as you can see in the plot of the magnetron file Flux.pdf; It's known that the proton has μ_p 2.793 and the neutron has μ_n -1.913 of the nuclear magnetron and electrostatic forces. Two nucleons that change magnetron are attracted with a force as in: <u>http://michaelvio.orgfree.com/Flux.pdf</u> Most of the time nucleons are neutrons for ~ $4 \cdot 10^{-7}$ seconds attracted by gravitational forces by the magnetic forces which for the distance between nucleons for r/2 < nucleon radius 0.55 +/- 0.09fm are significative.



The article: https://arxiv.org/pdf/2107.01441.pdf

In literature ^[2] we calculate the ratio of electrostatic force and gravitational force with the classical formula as 8.1·10⁻³⁷: Quantum Physics Vol IV- Berkley – Chapter 2-Magnitude of Physical Quantities (40a) page 73. $\frac{F_g}{F_{es}} = \frac{Gm_p^2}{4\pi\varepsilon r^2}$ where m is proton mass e is a charge of protons and G is Newton's gravitational constant. $F_{es} = \frac{e^2}{4\pi\varepsilon r^2}$ for distance radius $r_0 = 2.4 \cdot 10^{-15}$ m the rejected electrostatic force is around ~ 40 Newton from the classical point of view and for 4 fm the distance between two protons in Fe nucleus we have 14 Newtons. $Fm = \frac{RBesselY(0,kR)BesselJ(0,kR)BesselJ(0,kR)BesselJ(1,\frac{k}{R}))\pi r^3}$

And the Magnetic Force (http://michaelvio.orgfree.com/Flux.pdf) at t = 0 is Fm=H(r)/4 π r² plot for R=49 and r = 0.01..1:



We can see the Magnetic Force decrease very abruptly thus the magnetron is the particle of magnetic forces that helps strong nuclear forces for the stability of the nucleus. The electrostatic repelling between nucleons combined with strong nuclear forces and the attractive gravitational force and attraction quantic magnetic forces, 4 balances the pulsating electrostatic force of repulsion that changes every $\sim 4 \cdot 10^{-7}$ sec.

Thus, the quantic gravitational forces in Newtons between 2 nucleons that change v neutrino (gravitons) are: $\frac{1.85 \cdot 10^{-64}}{10^{-64}} \pm \frac{4.09 \cdot 10^{-64}}{10^{-64}}$

$$F_{g1} \sim \frac{1.85 \cdot 10^{-64}}{r^2} \div \frac{4.09 \cdot 10^{-64}}{r^2}$$

The weak nuclear force doesn't exist in the known form the β -decay of the neutron is the consequence of the standard model that says that a Down Quark is turning into an Up Quark, it is a misunderstanding of the process. The Quarks are the building blocks of the matter, and they are very stable, not changing from one type to another. The Quark Information Theory explains that all stable particles are made of 3 quarks and the information is not destroyed it simply transforms.

Time is related to a τ neutrino and the sun generate τ neutrino, time, and gravity; τ neutrino is responsible for the time evolution process and at the Time Ionization State of the atom all process will freeze in the same as the piece of cheese in the kitchen will last a couple of days, in the fridge will last a couple of weeks, in the freezer will last a couple of months and into the Time Ionization State will last undefinably as long as the energy is supported for all the atoms into the peace of cease will remain in that state. We talk about organic matter and processes in the living world, a rock will last for a long time if there are no or limited erosive factors. In theory, it seems like is needed about 3-5 wats/moll of substance for a beam of photons at the frequency ~313.5nm +/- 1% you need to vary into this marge of the error until the clock stops either a mechanical or better a small electronic watch or even a fly as you will see further in the message. The energy of the photons is E=hv and the Temporal Ionized Energy is E_T= 3.95eV...You may put in the beam a fly *Drosophila melanogaster* and paralyze it for a period longer than the life of the fly and recover it so the life of the fly is doubled also you can put a little mouse, a cat, or a dog there the only difference is the total amount of energy...

The μ neutrino generated by atoms will provoke the duality of space and matter which is a quantum of time wave and another quantum of time particle at the microscopic level.

The dual behavior wave-particle of the microscopic world is a consequence of the quantic space... yes, space is alternately bought wave and particle in consecutive quanta of time. Is a simple explanation of the fact that an electron entering through a double-slit experiment interfered with him. Quantum Space gives reality and all particles, the duality wave-particle which is generated in essence by quantum space particles. Space is one quantum of time is a wave and one quantum of time is a particle with mass. That's why an electron passing through a double split interfered with him in the time quanta in which it's a wave and also in the double split if the conditions are right the width of the split is the order of size with a wavelength of the incident particle, so the interference process appears, and the particle has an associated wavelength (de Broglie) in the order of width split.

The Troisk experiment at the link below shows that the mass of v electronic is $\sim 2eV$ (-95%)

https://www.researchgate.net/publication/51961903_An_upper_limit_on_electron_antineutrino_mass_from_ <u>Troitsk experiment</u> thus the Gravitonic Ionization Energy should be 3.259eV and Time Ionization Energy ~3.95eV.

As it says in the physics community the proton can be transformed into a neutron only inside the nucleus the transformation is circular starting from a proton and regenerating the proton.

Several experiments probing whether the neutrino is a Majorana particle are currently underway.^[1][1] A. Franklin, *Are There Really Neutrinos?: An Evidential History* (Westview Press, 2004), p. 186 Quantum Physics Vol IV - Berkley – Chapter 2-Magnitude of Physical Quantities (40a) page 73 [2]

10. Dec. 2023