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Empirical research nuclear decay, in general, with an explanation of the phenomena of "cold fusion and fission cold
. and cold nuclear transmutation.
The research is divided into two parts,
, underlying the research is the hypothesis that the decline may be driven by axion field,
, that depending on the speed of execution or of excitement,
. may produce different decay modes.
For example, decay times of the order of 10 ^ -10 seconds. May
. photons produce many broad-spectrum de-energization of the nucleus.
times of the order of 10 ^ -23 seconds, producing a single photon range ..

. first part of analysis of weak decays.
. followed by another article, the analysis of alpha decays, and analysis of the various decays, based on the density of nuclei.

. Energy density, which involves the same phenomena.

and explanation of electron capture in nuclei, and beta decay

1 --- Abstract
Classical semi-empirical analysis of beta decay, decays to electron capture and the phenomena of "cold fusion"

. This article dealt with a statistical empirical decays β + β -., with empirical formulas semiclassical. derivate da semplici osservabili macroscopiche. derived from simple macroscopic observables.

. In this way, we can find and "isolate" sensitive variables which determine the rate of decay of nuclei." and we can begin to understand how to intervene "to artificially change the natural rate of decay, and find ways to invalidate, fission and fuse nuclei in terms of energy" cool "

We can identify the underlying mechanism that allows this type of decays, and we can understand why the decay times, for $\beta^{\pm}$, electron capture and decay α are the same when the decay modes occur simultaneously.

We can understand the mechanisms of the mysterious so-called Cold Fusion. and explain how weak mergers occur in environments with very low energy density.

, We can understand how the nuclei, exploiting energy "environmental concentration is not high, may have behaviors that seemed to be possible only at high energies,

, The electroweak statistics are based on the assumption that every phenomenological weak decay, or electroweak, must be mediated by bosons Z ° and W ∓ through a strange phase,

The quark flavor change under the interaction of Z ° bosons created by the excitement of the local vacuum, and changing the stangeness of quarks, which decay in down and up with the issue of W bosons and ∓ change of electric charge.

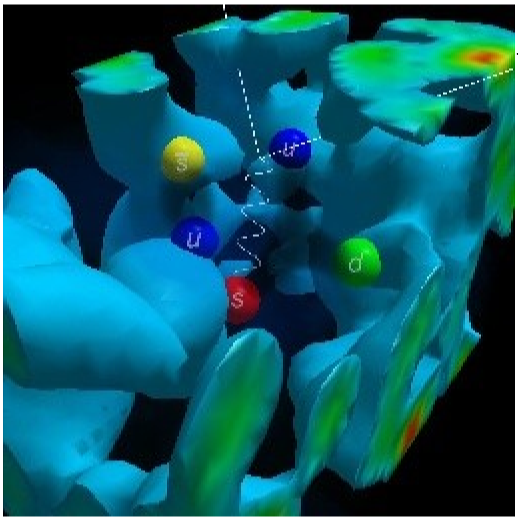

fig 1-painted image of the inside of a proton. with phase strangeness

2 ---- Introduction

At the base of the decay, we assume a physical mechanism of illumination and detection of areas with defined radius and at or below the range of the weak force, 10-18mt. (circa 1 Tev di ampiezza d'onda) (About 1 Tev of wave amplitude)

The hypothesis states that by illuminating an area with a radius less than 10-18mt,,, the probability of production of virtual Z ° bosons become very high, and bosons products can interact with the quarks, and then repay the debt with a vacuum energy annihilation process very special.

. On their way, the Z ° bosons interact with the quarks of the nuclei, and change the quark flavor, a process that ends with the issuance of ∓ W boson and a change in electric charge of quarks.

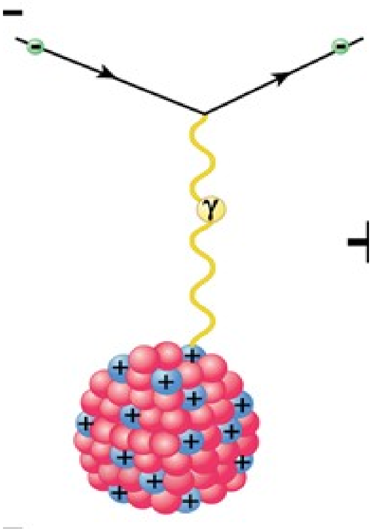

Fig2-illustration of interaction between the electron and proton in the nucleus, with a virtual photon and the distance over 10-18mt

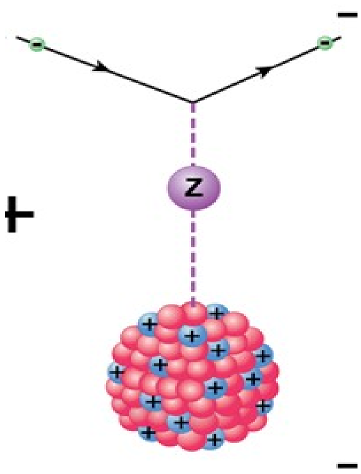

Fig3-pictorial illustration of interaction between the electron and light nucleus with boson Z °, when the distance between the electron and the nucleus is less than 10-18mt

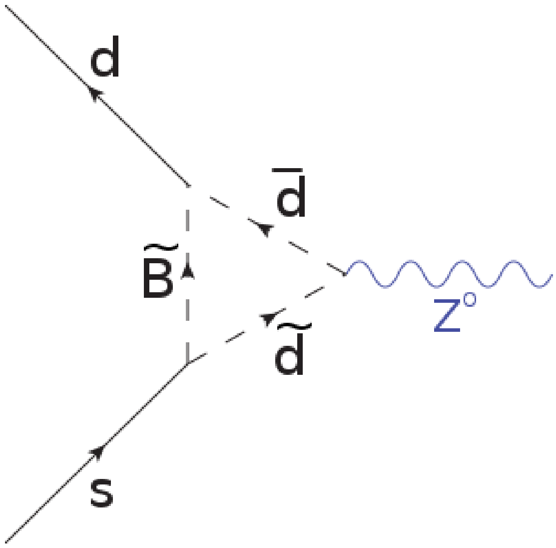

Fig4-Z °-boson interaction diagram and quark flavor changing

The Z ° production begins with the lighting or the determination of

. space between electrons and quarks of the nucleus., or the same process can occur with sudden jumps of density and temperature of the mixture of quark core binding energies for imbalances.

. In energy conditions typical of electron-capture the 'wave amplitude of the electrons can reach more than 90 Mev.

. The electrons reach these energies by exchanging virtual photons with the electromagnetic fields produced by the quarks inside the nucleus, the electrons take power temporarily with an exchange of photons and near the nucleus, and ricedono and away from the nucleus.

. If the electron that has received a photon from about 90Mev, is approaching the center of mass of the nucleus, about 1femtometro , 10-15m, holds it for less time <10-26 sec, and then ricede, we hardly phenomena lighting phenomena that appear when the electron ricede the photon at a time between 10-25sec and 10-23 sec.

. This process is changed, and leads to the decay of these nuclei for electron capture whether there are conditions with natural imbalances in the composition of the inner core energy ties with relatively rich unstable nuclei of protons than neutrons.

In the case of alpha and beta decays, the quarks are those that are able to jump in density between them, to produce the lighting of the space needed for the formation of Z ° bosons.

).. We can produce artificial electron capture, with chains of electrons in artificially brought right energy conditions, with energy input from external electric fields, which induces spin chains of millions of electrons interacting with electromagnetic fields of the quarks inside the nucleus and is captured electronics and the decay of the nucleus (usually "stable" in this case) ..

Electrons whirl around the nucleus, can produce an exchange of photons with quarks of the nucleus, and bring them to higher energy levels, lead the definition of the spaces between the quarks with production of Z °.

Interestingly, the Z ° bosons are produced by lighting of the space of less than ∓ pairs of W bosons, but while the bosons W ∓

immediately cancel each other, to restore the energy levels of the vacuum

Xi bosons can also vanish into the void virtual individually, which makes it possible to disarticulates tion of pairs of bosons Z ° and the possibilities that are able to interact individually with the quarks, the strangeness changing.

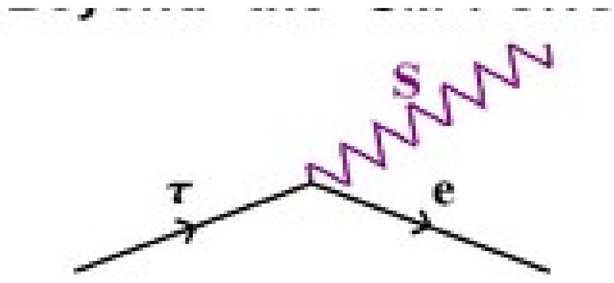

Fig5-chart change in flavor by tau interaction of electron with S = Z ° boson

. A similar mechanism occurs in the decay β, in unstable neutron-rich nuclei compared to protons or vice versa, in this case the space of at least 10-18mt is detected by vibration of the quarks of the nucleons with the core components of Z ° production and subsequent decay β .

. Similar behavior, albeit with half-lives longer end, are the basis of the decay of individual protons.

All these cases have in common the identification of an area under

10-18mt (wave amplitude of a Tev) and the formation of virtual Z ° bosons from the vacuum.

. We can think of illuminating an area of 10-18mt, such as the formation of rings of "light heavyweight" that surround the nuclei, composed of light heavy virtual Z ° bosons with energy of about 90Gev.

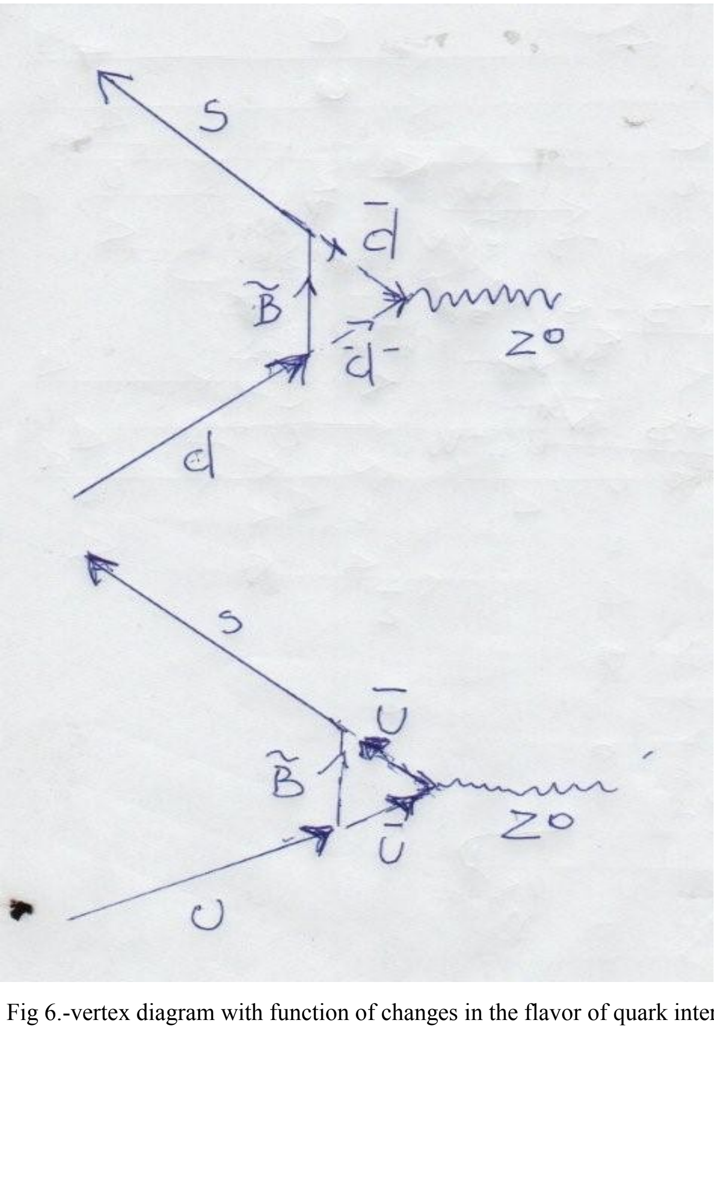

Fig 6.-vertex diagram with function of changes in the flavor of quark interaction with the bosons Z °

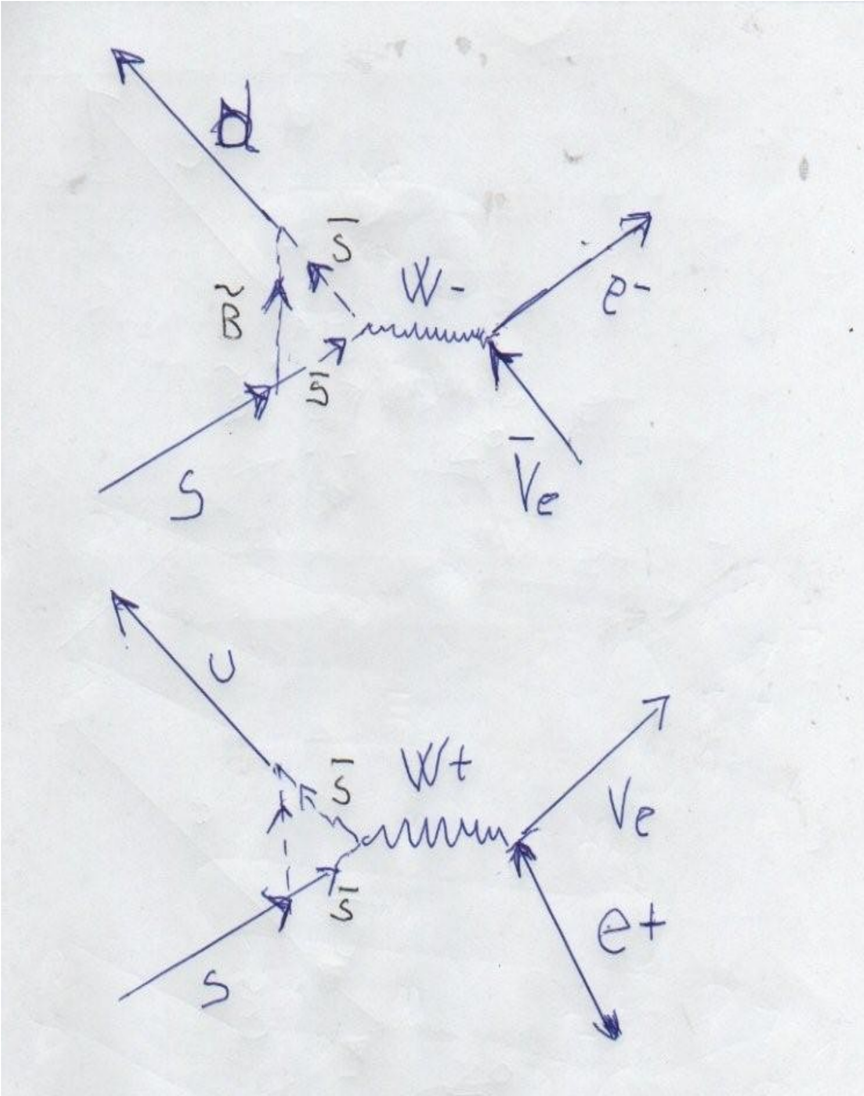

Fig 7 - to stage strange quark decay with emission of W + boson

. The mechanisms of the decays can identify the behaviors that are the basis of merger induced weak, with transmutations "amazing" associated with low energy nuclear effects and surprising, which might be called inverse Meissner type in the nucleus, and surprising effects of elimination of radiation with γ Indeed, allowing the release of a cascade of photons release excess energy, without "normal photon emission γ relaxation energy.

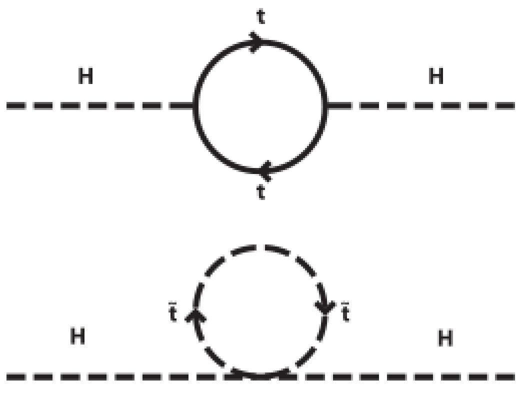

Fig 8--diagram-cancellation mechanism in the vacuum of the Higgs boson

. Similar mechanisms clear the gamma photons and pions, and neutrinos in the decay of the strange quark.

With these data, we can infer a golden rule of conduct probability decays

A decade-quark with a strange phase in down if he was in was up, and vice versa .-

- For example-

In a single proton, if the strange phase, relates to an up quark, we have a phase lamda or sigma

. The proton decays into a neutron.

, If the phase relation at the same time a strange quarks and one down quark,

. Xi we have a stage, and proton decays into a proton.

. If the strange phase covers all three qurk, we have an omega-phase in neutron and proton decays.

If we, for example, a cold fusion reaction between

Fe56 + proton-phase lambda ——> Fe57

- Fe56 + xi-phase proton ——> Co57

Fe 56 + omega phase proton ——> Fe57

.

Part 3 ----- General statistical decays single nuclei with high atomic number, or at least more than two.

To prove the formulas of electron capture in statistical form, semi-classical

begin by identifying the frequency equation of electron capture General Statistics

* The equations are deemed to refer to the CGS system of measurement

The formula can be described by extension

Fc = N°el/nucleo N°nuclei/cm3 sez urto/(Kdp^+2)+8 A Rfermi^+4/D^+4 C

$$Fc = \frac{N° el}{1\ nucleo} \frac{N°\ nuclei}{cm^{+3}} \frac{Ro\ Fermi^{+4}}{D^{+4}} \frac{\sigma}{(Kdp^{+2})^{+8}} A\ \ C$$

Where

Fc = frequency of electron capture / sec

N ° el = total number of electrons / 1 core

No. nuclei/cm3 = density or number of cores in cm +3

RoFermi = radius of a proton (1.2 10 ^-13cm)

D = average distance range of the electroweak force (10 ^ -16 cm)

Kdp = factor probability density = number of chances between 10 ^ - 10 ^ 5 10 ^ +0 +5 to have the necessary distance between nuclei and electrons

σ= Electron-proton cross section (10 ^ -43 cm2)

A = atomic nucleus

C = light speed

From this formula we can derive an equation for a single nucleus,

elementi and we can come to define two equations, one that relates only to H and D, all other factors remaining

equation is the rate of electron capture of the generality of nuclei with atomic number greater than 3

$$Frc= N°el \frac{10^{-53}\ cm3}{10^{-22}\ cm3} A \quad (Kdp^{+2})^{+8}\ /sec$$

Equation in the case of H and D

$$Frc= N°el \frac{10^{-62}\ cm3}{10^{-22}\ cm3} A \quad (Kdp^{+2})^{+8}\ /sec$$

Where

Frc = frequency electron-capture

N°el = number of electrons in the Bohr radius

A = atomic number element

Kdp is a factor of probability density between 10 ^ 10 ^ +0 +5 and 10 ^ -5

The equations are derived from

$$Frc = N°el \frac{\sigma}{Vrb} \frac{TdW^{+4}}{TRp^{+4}} \frac{16\,\pi{+}2\ Rp^{+4}}{RazW^{+4}} A° \quad (Kdp^{+2})^{+8} \quad cm/sec$$

Where

Frc = number of electron-capture rate / sec

N°el ° = number of electrons in the Bohr radius

A ° = atomic number element

Kdp is a factor of probability density between 10 ^ -5 10 ^ 10 ^ +0 and +5 cm on the second

) Vrb volume = Bohr radius (measured in 10-22cm ^ +3)

Twd = W decay time (10 ^ -26 sec)

Trp= time-distance speed is the radius of a proton (10 ^-23sec)

Rp = radius of a proton (10 ^-13cm)

) Raz W= bosoni range (10 ^ -16 cm)

σ = electron-proton cross section calculated in 10th-43cm2

π = constant pi greek

la We note that in these equations we have many variables, but we can assume many practically constant, and

. Kdp is more variable.

. Kdp is the factor of probability of detection of a range of 10 ^-16cm, near the nucleus on a second.

. The factor is equal to 10 + 0 when the electrons on average are 10 ^-16cm from the nucleus. The factor has an exponential increase and / or decrease exponentially in direct proportion to change much even relatively "small" distance of detection of 10 ^-16cm.

. The density factor is discussed in cm / sec, which is not strictly a speed, but covers a range found in a second., And takes account of the strange properties of the Z ° to dramatically increase the probability of interaction, when you arrive at energies of lighting by more than 1 TeV, where the Z ° boson self propagate until they find the target. consequently increase exponentially the likelihood of capture and the cross section, and therefore the factor KDN has squaring and then to the eighth power.

,. In the case of electron capture probability of the event are enormously sensitive to small changes in the order of fractions of 10 ^-16cm of the normal range of the electroweak force and even slightly decreasing or increasing the distance illuminated by 10 ^-16cm ., it greatly increases the possibility of electron capture.

At distances greater than 10 ^-18cm we have a huge frequency of capture, even with very short times of illumination. con fattore Kdp che arriva 10^+32. KDP factor that comes with 10 ^ +32.

- Calculation example of Kdp-

: Hypothesized illumination of radius 10 ^-18cm, we have:

potenza distance range / distance lit = 10 ^ = 10 +2 -16cm/10-18cm squared and the eighth power

. we get a total factor of 10 ^ +32.

… if we instead 10-19cm, we are at 10 ^ +48, if we set 10 ^ -15 cm, we are at 10 ^ -16, etc. ...

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General equation shows that, under normal energy conditions, with an average electron Bohr orbit, with stable nuclei, we would have a frequency of

10 ^ -111/sec of electron capture in cases of complex nuclei

. An average lifetime of a stable core of about 10 ^ +104 years, consistent with what we observe.

In the specific case of H and D, with cross section of 10 ^ -52 cm2, we get 10 ^ +113 years, which is always compatible with what we observe

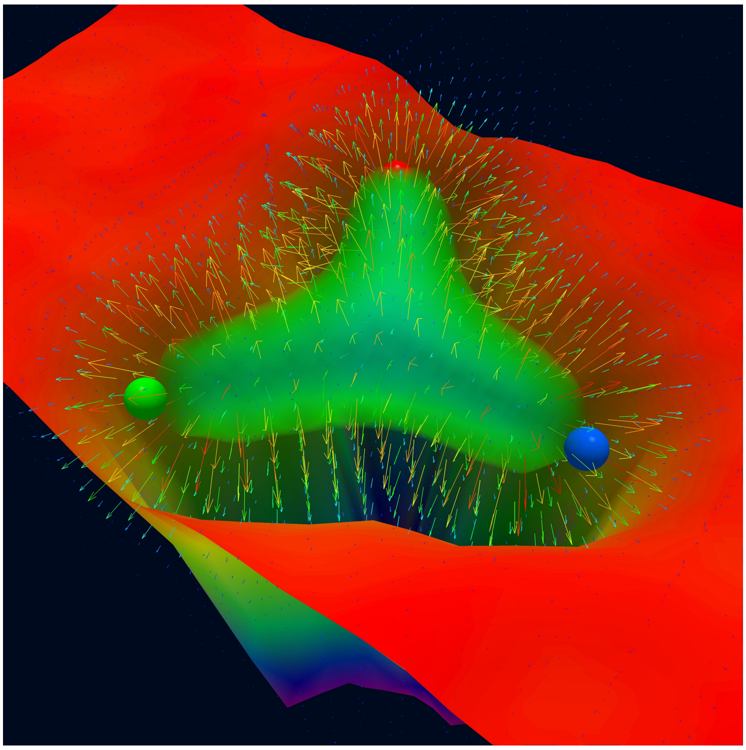


Fig 9-core .immagine pictorial and force fields

3 -- Electron capture into individual nuclei with atomic number> 3

Formula frequency of capture in individual nuclei with at least four components

$$Frc = N°el \frac{10^{-53}\ cm3}{10^{-22}\ cm3} A° \quad (Kdp^{+2})^{+8}\ /sec$$

With A = number of atomic nucleus

The electron capture occurs normally in unstable nuclei, with the number of protons to neutrons relatively too high and we can assume that the electrons orbit the nucleus normally

. can "meet, in temporary energy with relatively stable orbit around 90Mev around the nucleus and be able to time enough to illuminate the range of at least 10-16 cm from the quarks.

. This possibility could also be induced "artificially externally on nuclei naturally stable.

In the case of stable nuclei, electrons, achieved an energy of 90 Mev and a little further, are able to define distances of 10-17cm with the quarks of protons forming the nucleus

This. Distance or "illumination of virtual space always produces bosons Z °

In stable nuclei, the excitation of the quarks of protons enlightened reach levels that produce a state with a strange kind Meissner effect opposite that we discuss extensively in later chapters, with the exchange of many photons of electromagnetic fields induced by the outer electrons. senza avere catture elettroniche dirette. without direct electron capture.

The production of Z ° bosons, produces the strangeness phase, which decays with emission ∓ DIW, according to the types of decay

., All non-classical charts that follow are not to scale, offer the general pattern of reactions.,

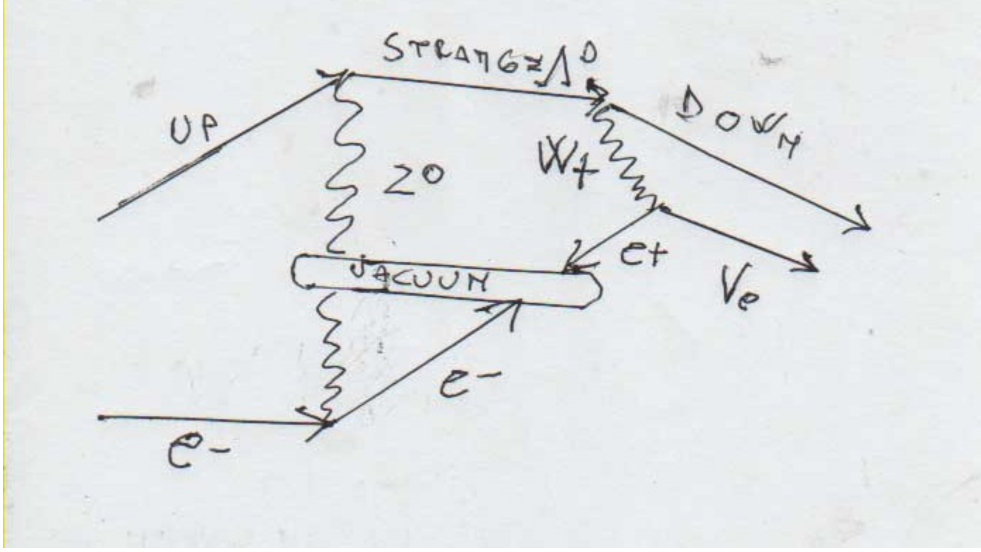


Fig 10-Diagram (not to scale) with electron capture decay phase Λ °

Electron capture in an up quark, in interaction with a boson Z °, Λ ° it becomes strange, and with the emission of a W + decays into down.

, The interesting thing is that after the decay of W + in positron and neutrino, the positron annihilates with the electron product is responsible for lighting the original . and we have no issue of the two γ, because they are absorbed by debt of energy produced in a vacuum.

4 - Frequency decay of the single proton and electron capture for H nuclei with atomic number <3

10^-62 cm3

Frc= N°el -------------------------- A (Kdp^+2)^+8 /sec

10^-22 cm3

In the equation, the electron-proton cross section, and is seen in the case of nuclei with atomic number greater than a cross section of 10th-43cm2, and in the case of H and D in 10^-52cm2 in 10th-52cm2 , we have extended the almost constant, with variable factor probability density, which varies from 10 to 10 ^ ^ +0 +5 octave higher and the number of electrons, which also includes the possibility that they are "injected electrons artificially into the Bohr radius, ..

. The equation of H and D requires a narrowing of the electron-proton cross section.

narrowing the range from 10 ^-43cm2 of nuclei complex of the 10th-52cm2 single proton + proton or neutron.

The "narrowing of the cross section implies an interesting physical phenomenon.

the nuclei of H and D, consisting of a single proton or a proton and a neutron in special circumstances "artificial"

vortices are surrounded by electrons, millions of electrons gathered in spin chains, which wrap around the tornado as nuclei.

.. We have, consequently, very strong electromagnetic fields produced by the vortices of electrons, which gain energy by absorbing photons produced by electromagnetic fields in the environment ..

. The chains of electrons interact strongly with the electric charges of quarks, and force them to absorb energy, with an enormous amount of photons exchanged.

. The quarks in the process of absorption of 'energy, they are forced to "restrict" the wave amplitude, and size of the nucleus, and hence the cross section.

. In addition, the electrons in turn are forced to follow the shrinkage, and to have less and less wave amplitudes, and reach more and more energy.

. nuclei consisting of many protons and neutrons, have higher electric fields of the individual protons and electrons less transmit electromagnetic energy and are forced to remain in wave amplitudes with energies of about 90Mev.

. In the nuclei of H, with a single proton, the electrons fall into orbits, or wave amplitudes below 10 ^ -13 cm, about 10 ^-12cm, with energies near to medium 800Mev.

The electrons, when they reach the 800 Mev, are able to illuminate a gap between them and the quark core, 10 ^-16cm, radius of action of the Z °, and thus produce

Z ° from the virtual vacuum. And bring the total energy of the three components of the quark at about 1600 Mev proton .. and beyond to meet and exceed the limit of 1672 MeV.

. the electrons in the vortex cores of D, can energize the internal quark, which exceeded the threshold of about 1300 MeV per nucleon, are able to change the state without strange interaction with electrons., In short we have an "effect" with local increase of the magnetic field "within the nuclei or protons of H and D.

. We could, for simplicity, refer to this effect of shrinkage and increase local energy of the internal components of nuclei subjected to very strong local electric fields of electrons in the vortex, as a kind of Meissner effect reversed.

. In the case of individual nuclei of H and is surrounded by vortices of electrons, and hence a strong electromagnetic flows, we assume that within the nuclei, quarks are strongly influenced by the external electric field, and increase the intensity of the internal magnetic field.

. In complex nuclei, quarks, under the influence of external electromagnetic field induced by vortices of electrons, increase in mass-energy, we can get beta-without any interaction with the outer electrons. Al nucleo At the core

In the case of individual protons H, the vortices of electrons are able to illuminate the space necessary for the production of Z °,

. and we have a different mechanism of electron capture from complex nuclei.

, in this case we have the production of virtual Z ° bosons interacting with an electron capture for up quarks while the other up and down quarks of the proton,

. excited by electromagnetic vortex, interacting with the transformation of the proton in strange particle with negative charge. or with neutral charge.

In this mechanism, the Z interact with a virtual u quark and an electron outside, and then between the quarks up and down the interior and transform the two up and three down in strange

, We get the creation of a particle omega - Ω^- with a mass of 1672 MeV, charge -1, the average life of 0.8 10 ^-10sec,

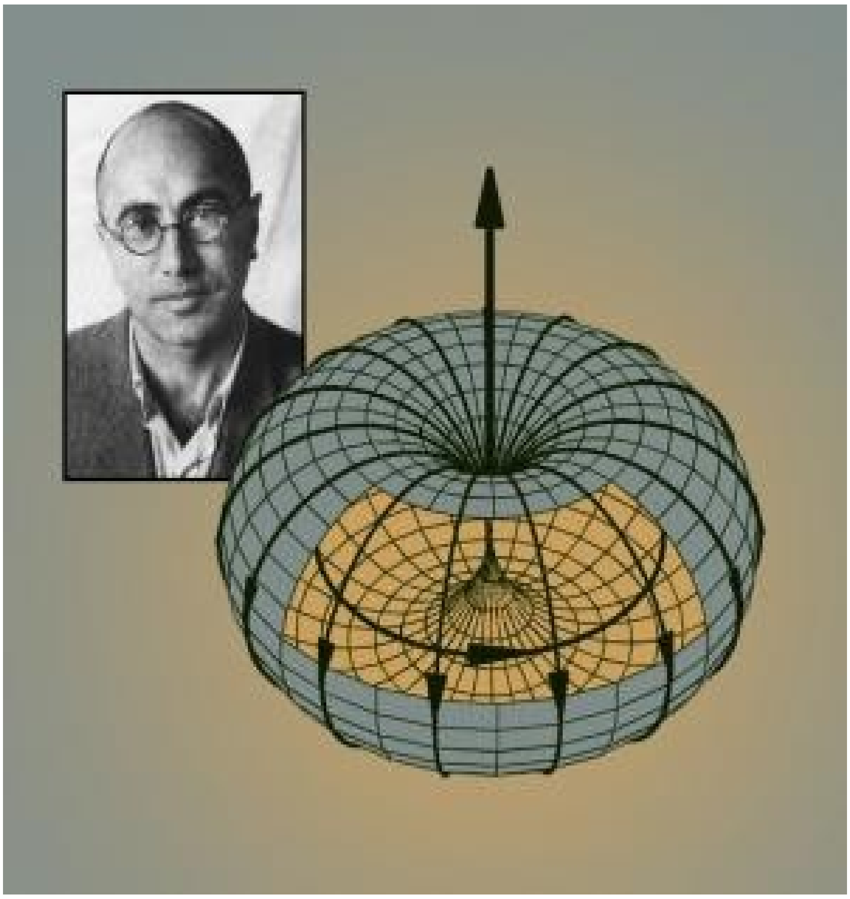


Fig. 11 - Yacov Zel'dovich has proposed a model where the weak force induces electric currents in the nucleus, as the flow of currents in a tokamak..Anapol this time has been identified in the value of the nuclear protons, but not yet in valence neutrons.

The single proton uses the total energy of the electrons in tornado, hurricane or electronic, reaching high energies in excess of that medium, such as hurricanes bring its total kinetic thermal energy of an entire area, to put it in a smaller area , and thus increase the total energy of air molecules that form the destructive vortex of the hurricane.. Likewise, collect energy from the electrons together by the magnetic fields that absorb photons in the area, then exchange energy by sending photons to quarks of the nucleus concerned, which increases the internal energy.

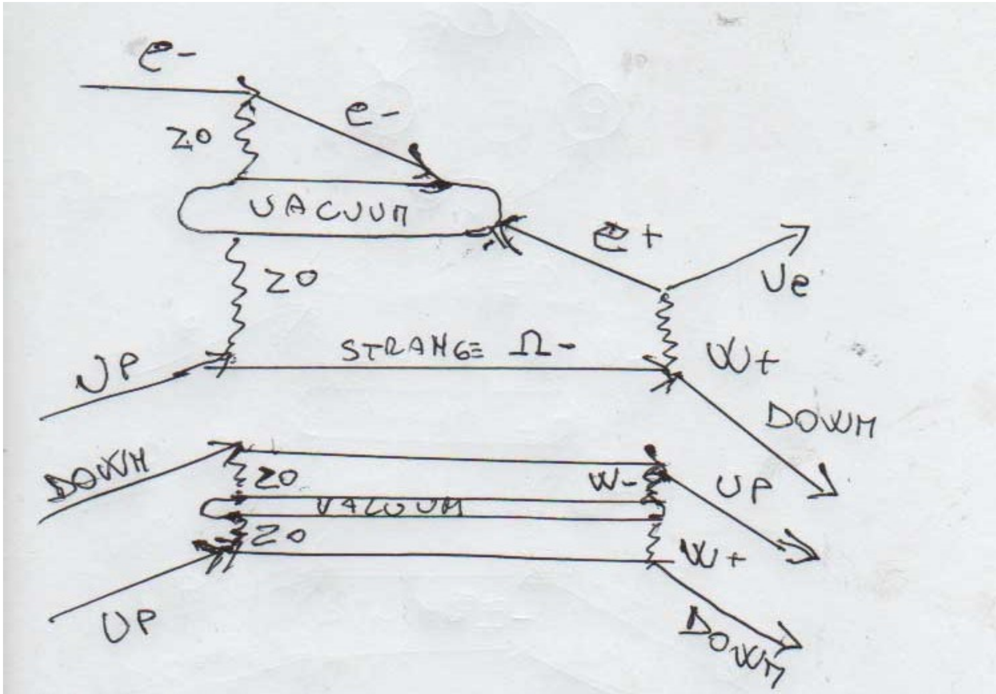


Figure 12- Diagram of core H with electron capture and simultaneous processing in Ω–

* Not to scale

Hyperon **Ω–** has a negative charge - and has a huge cross section compared to other normal protons, in this case the Coulomb barrier promotes the fusion of two protons, if it can be done on the decay times of about 10 ^ -10 seconds.

. The particles thus produced form a strange particle in two-component neutral charge, with very large cross section, which can easily merge with normal nuclei or decay in time at around 10 ^-10sec.

$H+3(Z^*) + e^- \longrightarrow \Omega^-$

Omega- ,nucleo negativo,fonde con estrema facilità e con enorme sezione d'urto con protone positivo H Omega-, negative nucleus, blends easily and with great cross section with a positive proton H

$2Hns^* \text{--------}> D + \nu\varepsilon + 1{,}397\ Mev$

. 2Hns * stands for neutral strange particle.

.. This particle could either merge with other nuclei, or isolated decay quickly in times of about 10 ^ -10 sec ..

$H+\Omega^{-*} \longrightarrow D + \nu\varepsilon + \Sigma\gamma\,(1.397\ \mu\varepsilon\varpi)$

, The energy is emitted in a cascade of photons,

The two W produced by the decay of an up and down they annihilate each other and the positron emitted by the decay of W + the up vanishes with the electron that produced the light. And with the final release of a neutrino

. energy resulting from the mass defect of deuterium dall'incollaggio product makes a positive energy balance of the merger.

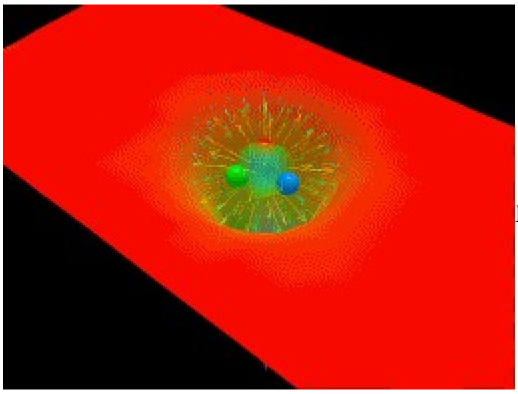
$H + \Omega^{-*} \longrightarrow D + \nu\varepsilon + \Sigma\gamma\,(1.397\ \mu\varepsilon\varpi)$

In this process, we have the decay della omega- in circa 10^-10 sec in of omega-in about 10 ^ -10 sec

$\Omega^- \longrightarrow N + \nu\varepsilon$

Φιναλ ρεαχτιον

$2Hns^* \longrightarrow D + \nu\varepsilon + \Sigma\gamma\,(1.397\ Mev)$



F

ig13--painted image of the nucleus with quark

in this reaction is the sum of photons that is returned to the electronic vortex is not understood, because the budget is exactly what the return of 'energy intake above.

less likely other branching

we also have the rations of fusion

2Hns*+D ----> 4He*

Reaction that we discuss later, and that emissions of summations of photons of about 23 Mev.

The most notable is the return of energy with photons, which does not occur as in the classic case of the merger "with strong single-photon emission range, which is the most likely form of relaxation of the nucleus.

In the case of these weak interactions, mergers or weak, we issue cascades of photons, with very broad spectrum.

It seems that the particles "remember that were energized at the beginning, many photons produced by electrons in the vortex, and then returns the energy initially taken in the same way with decay times much larger than the normal time of reaction" strong " We are an average time of 10-10sec of "weak against the average 10-23sec" strong.,

.. The electrons in the vortices are able to intercept, absorb and then re-emit at a frequency in very wide range .. i fotoni emessi dal nucleo. the photons emitted from the nucleus.

The strange behavior of neutral particles is very complex and may also merge with nuclei at high atomic number, with many possible permutations.

- . The reaction of a proton with the production of omega-H. produrrebbe in fase finale un neutrone. would produce a neutron in the final stage.

This reaction defines the golden rule

. Each quark-led to a strange phase, decays into its opposite, from down to up. o da up in down. or up to down.

, Interestingly, in the case of the proton, another strange reaction that could happen is that of Xi neutral

. with involvement of an up quark and a down quark.

In this case, as the empirical observations, the proton at neutral strange Xi, fell again in the proton, no neutron production.

P + (2Z° *) ——> Ξ°

Ξ° ——> P

Important to note that, in this case, the XI has the possibility of merging with virtually only a nucleus with many protons, and in this case produce different reaction products.

If, for example, Fe56 we, as end products

Fe56 + omega- ——> Fe57

Fe56 + Xi° ——> Co57

. Interestingly, like the proton, in the state of XI, neutral, it is difficult to melt, and if not done any fusion reaction, in a time of 10.10 sec, see again the proton.

. The omega-state protons, being negative, unable to merge with all the nuclei, and therefore has little chance of being "free, and in this particular case, after 10.10 sec, decays into a neutron.

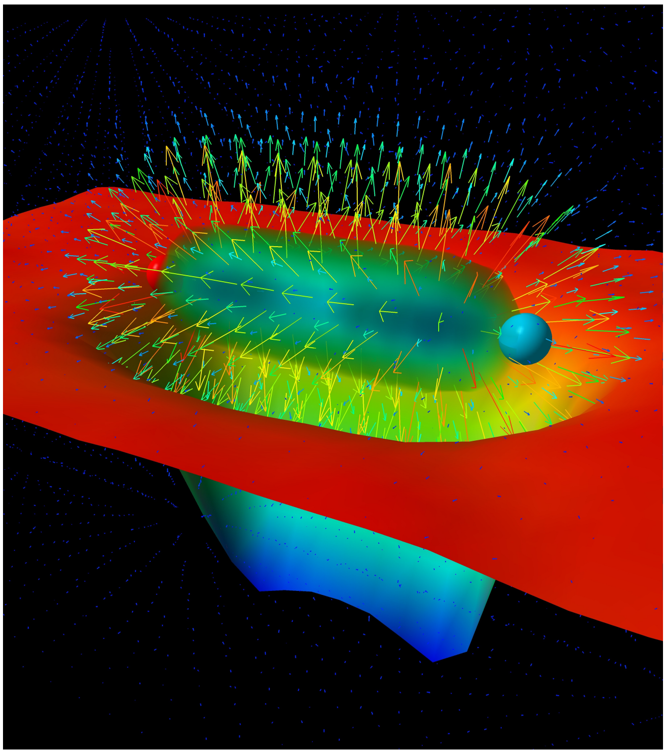


fig14- pictorial imagine of nucleo and radiation of photons

5 ----- Capture and fusion in Deuterium

$$Frc = N°el \frac{10^{-62}\ cm3}{10^{-22}\ cm3} A\ (Kdp^{+2})^{+8} /sec$$

The case of deuterium is very complex,

We have electron clouds at the same time to energize the protons and neutrons make up the D, which interact with each other and can create the ring of faint light heavyweight 10 ^-17cm, that turned into strange hyperon core Ξ intoDeuteron "normal.

. In this case, the vortices of electrons producing the energy needed to excite the quarks inside the deuterium, which interact with one another, with no other interactions with the outer electrons.

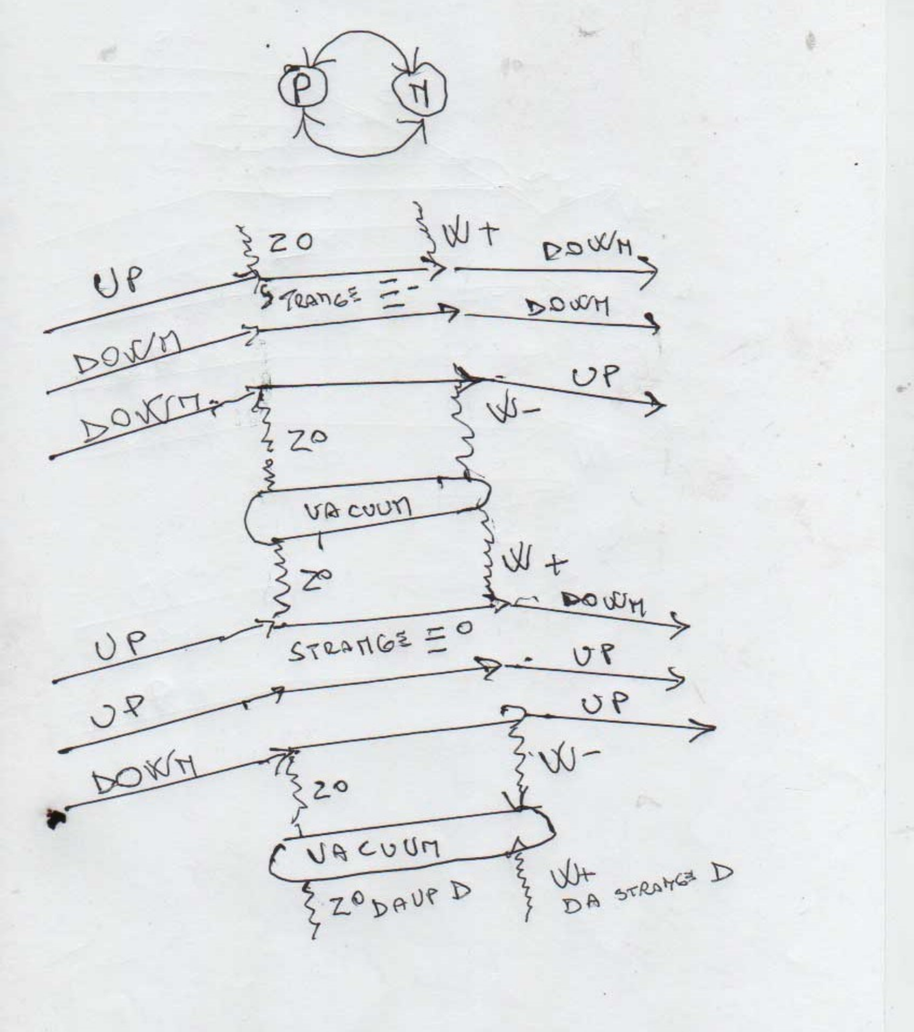


Fig15--diagram exciting car chain with the formation of P + N Ξ

N + (2Z° *) ——>- $Ξ^-$

P + (2Z° *) ——> $Ξ^°$

Ξ° + $Ξ^-$ ——> D ε*

the negative strange particle decays, in times of 10 ^-10sec in

D ε*(4 W∓) ——> D2i

in particular

4 W ∓ cancel a debt repayment of the vacuum, in times of 10 ^-10sec and get back D2

decay

(Ξ° + Ξ– +4 W∓) ——> D2

.con

Ξ° ——> P

Ξ– ——> N

Of course, the core Negative product, with low kinetic energies of formation, has large cross sections and can easily merge within the decay times.

The strange particle has negative high probability of merging with normal D

2Ds*- + D ——> 4He s*n neutral strange particle -

This core has many neutral to blend with other modules within the decay times in the order of 10-10 sec.

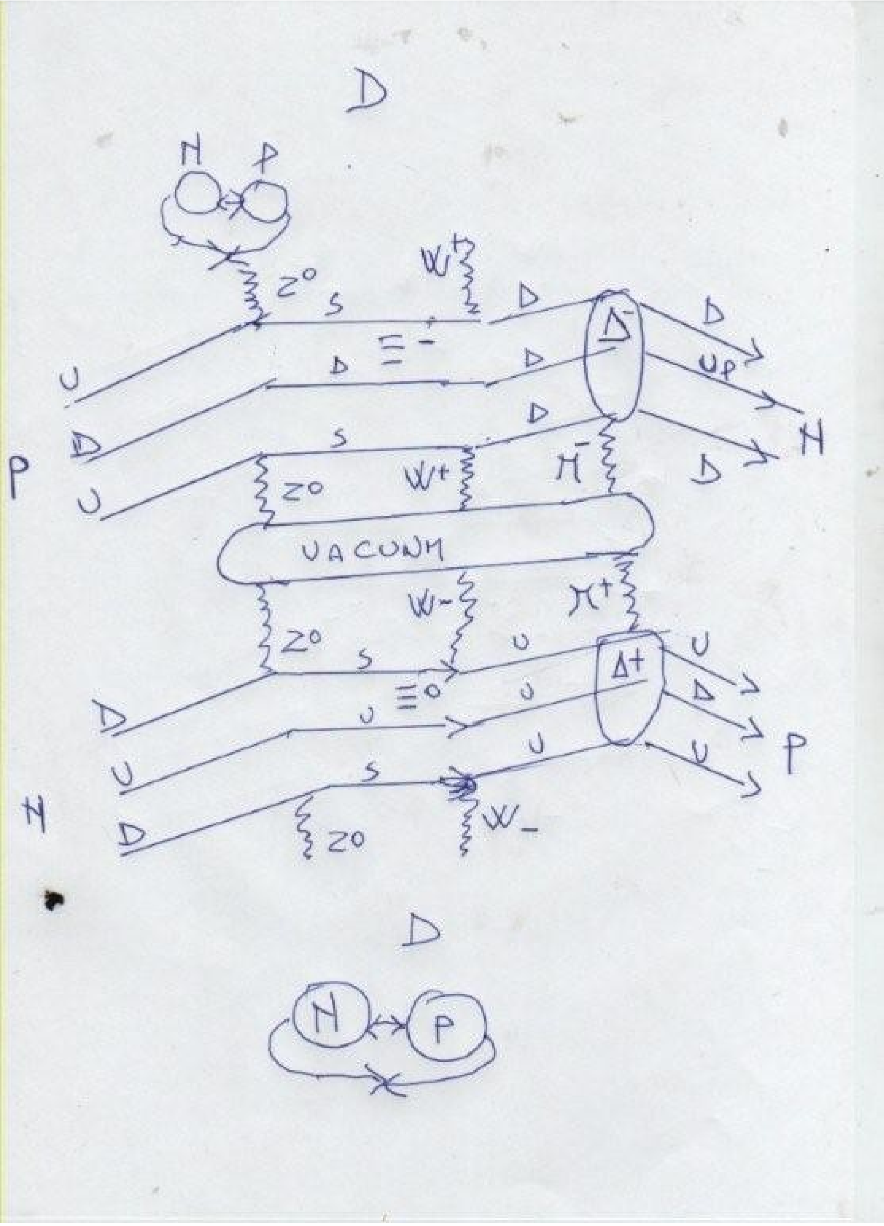
. In practice, glue so weak particles to form D 2 Ξ 4 He, respectively, and the decay into protons and neutrons we get the strange part, the formation of a nucleus of normal 4He, emitting the excess energy mass defect, about 23Mev, with a huge cascade of photons with very wide energy spectrum.

final reaction bonding-decay

4He*sn ——–> 4He + Σ ψ(23 μεϖ)

formation of neutral particles 4He * ns, implies a huge opportunity to various transmutations

Another possible process, the less likely



. Fig16-. decay phase delta –Δ

, In this case, the interactions between the two constituent quarks nucleons of the deuterium,

produced by a proton Ξ°and the neutron nucleon Ξ – X-nucleon

. The two nucleons, if you do not interact and fuse with other nuclei, decay in 10-10 sec, in Δ - and Δ +, and in times of about 10-23 sec decay into neutrons and protons with the emission of pion + -. that cancel each other out in a vacuum.

. Interestingly, the stage produces strange 2Ξ–, which can melt, within the decay times of 10-10sec, with two nuclei of deuterium negative strange, strange to form a core of 8 nucleons neutral, which could merge with two other D to produce a nucleus of C12. finale, e con emissione di energia. final, and power output.

Mixtures of deuterium and tritium, D and T, we have interesting reactions

If the particle is excited in strange D *, we have the reaction

D* + T ——> 5He

5He decays into 4He + N

. In this case, the reaction produces free neutrons.

If we have T * strange, we might have the reaction

T* + D ––-> 5Li

5Li ––-> 4He + P

Or

T*+T ––-> 6Li stable

6---- FREQUENCY decay β–

-DECAY IN NUCLEI with atomic numbers> 3

. In β–decay neutron-rich nuclei than protons, the density fluctuations inside the nucleus, are able to define an area of about 10-19mt of two neutrons and one proton.

protoni, The definition of spaces Z ° bosons produced with a change in strange quark down and up interested and concerned with the two neutrons become protons,

. the proton initially illuminated by the two neutrons, has a phase delta -, and decays with emission of a W-in neutron.

neutrino Final budget, we have a proton in the nucleus and a neutron plus less, and the emission of an electron and an anti-neutrino

. .. Equation on the probability of beta decay in a nucleus with atomic number> 3.

$$F\beta^- = \frac{N°ndc}{N°ne} \; \frac{10^{-22}\ cm^{+2}}{10^{-39}\ cm^{+3}} \; (Kdp^{+2})^{+8}\ cm/sec$$

Where

F β– = rate decay beta

N°ne = number of neutrons of the nucleus

N°ndc = neutron number above the level of relative stability to the core

Kdp = factor of probability density between 10 +0 and 10 +3 10-3

The full equation is

$$F\beta^- = \frac{N°ndc}{N°ne} \; \frac{\sigma}{Vrb} \; \frac{TdW^{+4}}{TRp^{+4}} \; \frac{16\,\pi^{+2}\ rp^{+4}}{RazW^{+4}} \; (Kdp^{+2})^{+8}\ cm/sec$$

Where

F β– = rate   decay beta-/sec

N°ndc = number of neutrons in the nucleus considered

N°ne = number of neutrons it above the level of stable core

Kdp = factor of probability density between 3.10 and 10 +0 10 +3 refers to an octave higher 1cm/secondo length of the length ratio between the average radius of the nucleus and reach the electroweak force

Vrb = radius of the proton Fermi volume (calculated in 10-38cm +3)

TdW = W decay time (10-26 sec)

TRp = time sliding radius of a proton (10-23sec)

Rp = radius of a proton (10-13cm)

RazW = range W (10-16 cm)

σ = neutron cross section calculated in 10-26cm2

π = constant pi greek

. We note that in the case of beta decay, we have a variation of the factor probability density of illumination of the vacuum, much less extensive in the case of electron capture.

This is mainly due to the fact that neutrons are more linked to the nucleus and to form bosons Z ° must define an area of 10-19mt, with protons in the nucleus

Kdp is then calculated as the ratio range of the weak force (10 ^-16cm), and distance really enlightened, with the average ratio of 10

+3 and 10 +0 factor to the average distance of about 16cm-.10 and multiplied by the reference length of a cm and a second

In the case of illumination of the prophetic 10 ^-16cm for a time sufficiently greater than 10-26 sec by two neutrons on protons, neutrons are excited and change in taste strange, and then by exchange of W bosons that vanish in a vacuum decay into protons.

. Proton lights, change in taste to the two quarks down, and down with the remaining one has the formation of a delta-,,.

At this point, in the decade up-down with the emission of a boson W_, mounts up, and we obtain the proton decay in the original neutron

.Classic Reaction . N ——> P + e¯+ νε¯

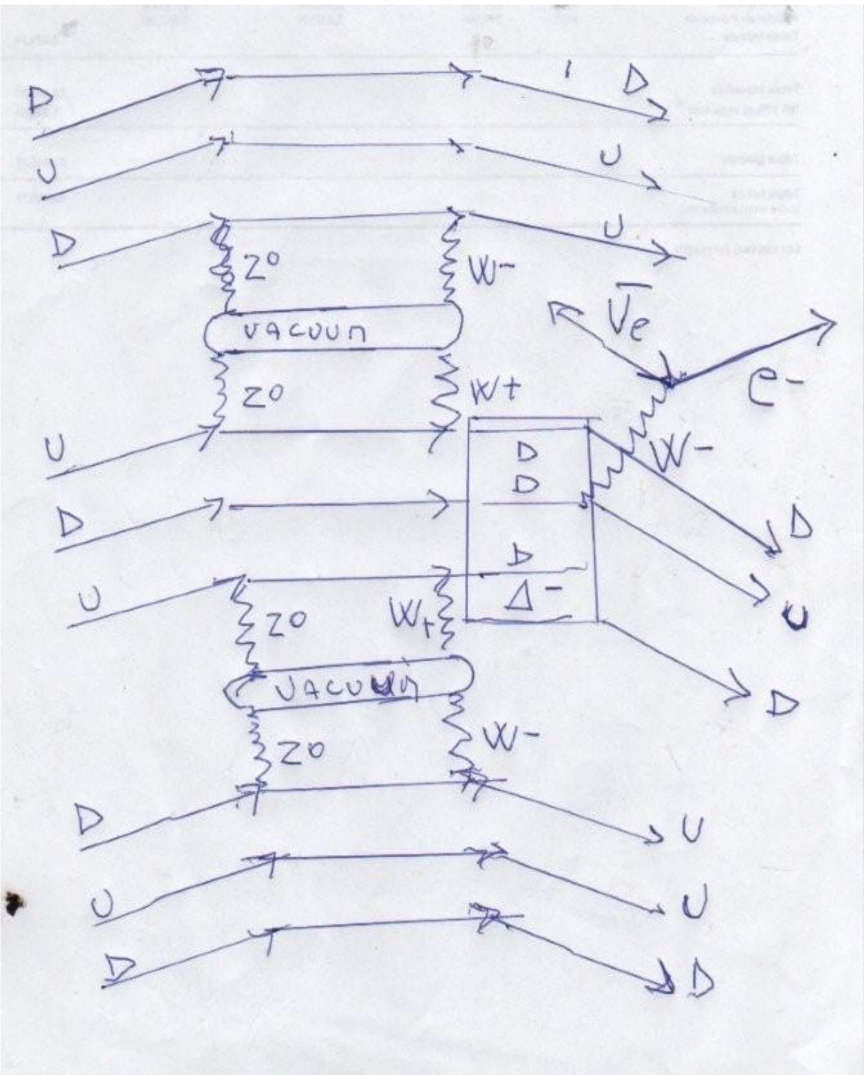


Fig 17 --- complete diagram β–

. In β– neutron-rich nuclei than protons, the density fluctuations inside the nucleus, are able to define an area of about 10-19mt of two neutrons and one proton.

La definizione di spazi produce bosoni Z°, con cambiamento in strange dei quark down ed up interessati, e con i due neutroni interessati si trasformano in protoni, The definition of spaces Z ° bosons produced with a change in strange quark down and up interested and concerned with the two neutrons become protons,

. the proton initially illuminated by the two neutrons, has a phase delta -, and decays with emission of a W-in neutron.

Final budget, we have a proton in the nucleus and a neutron plus less, and the emission of an electron and an anti-neutrino

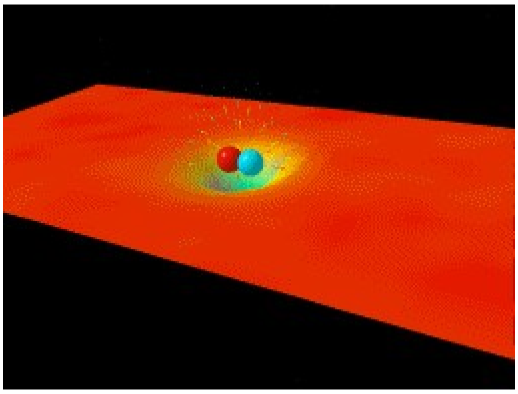


fig 18-pictorial image of the nucleus and quarks

7-beta decay in nuclei with atomic number> 3

illustrati The mechanisms for the beta + decay, are very similar to those already shown beta-decay

. In this case, we nuclei rich in protons than neutrons and two protons illuminating a neutron, with the change in taste of two protons into neutrons, while the neutron illuminated, has a phase delta +, the emission of a W +, and decays in proton.

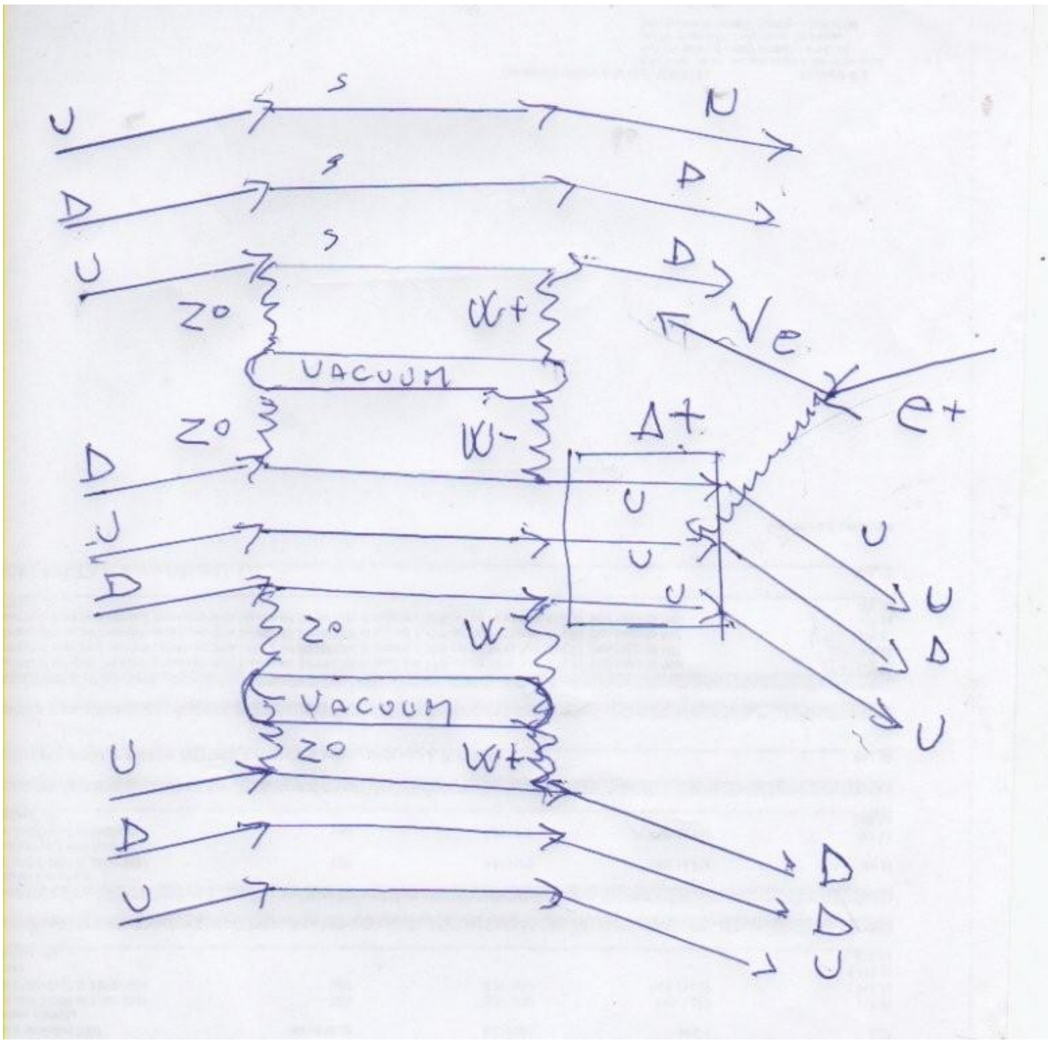


Fig 19 - beta decay +-phase delta

Classic Reaction

. . N ——> P + e^{-}+ $\nu\varepsilon^{-}$

. In both cases, the formula for density variations, are similar.

The necessary energy, are taken from the internal levels of binding energy of the nucleus.

. A small oscillation of the nucleus is sufficient for neutrons to define the space of the fateful 10th-18mt, and you just reach a distance of just under, to have a huge increase in the probability factor for interaction with Z ° produced.

. We have the formation of Σ ° which decays in a time of 10-20 sec with the emission of a photon.

The down of another nucleon, is responsible for the up lighting transmuted, is excited by interaction with the boson Z °, but not having enough energy levels, it becomes strange, and emits a photon which annihilates the photon emitted by the decay Σ °.

. As a corollary, we must recognize that artificial interventions on the β– are much more difficult than the electron capture.

. But we always try to find methods of external stress that might lead to fluctuate against the neutron to the nucleus that contains them.

We note that, in the case of beta decay, the energies are taken from the binding energies of the core itself, while in the case of electron capture the energy is taken from outer electrons

.. For this reason, the external conditions, such as ionization, have much smaller effects in the mode of beta decay, compared to the electron capture ..

8-Double-beta decay

We also have instances of double-beta decay, very interesting and special diagrams

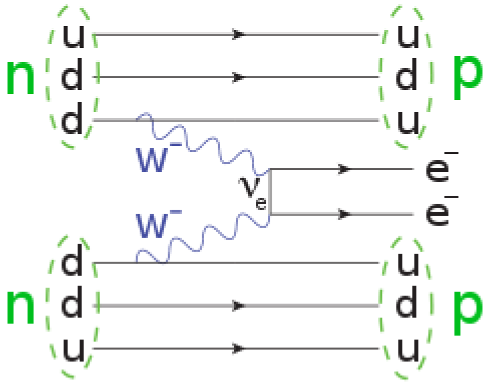


Fig 20. - diagram classic double-beta decay

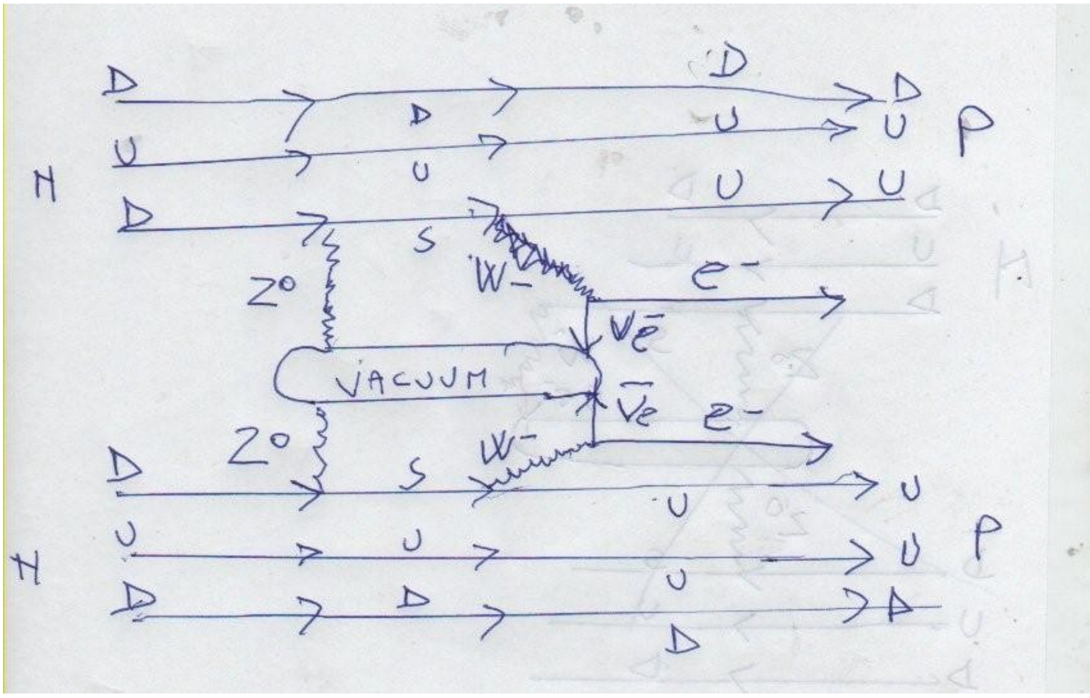


Fig21 ..- complete diagram not to scale of the double-beta decay

. In this particular case, the lighting is between two neutrons, without interaction with a proton and two neutrons decay into protons, emitting two electrons to the final without emission of antineutrinos, which are absorbed by the vacuum.

. In practice, the same process also occurs with possible double beta decay +, with two protons and light between them, and decay into neutrons with emission of two positrons and without emission of neutrinos.

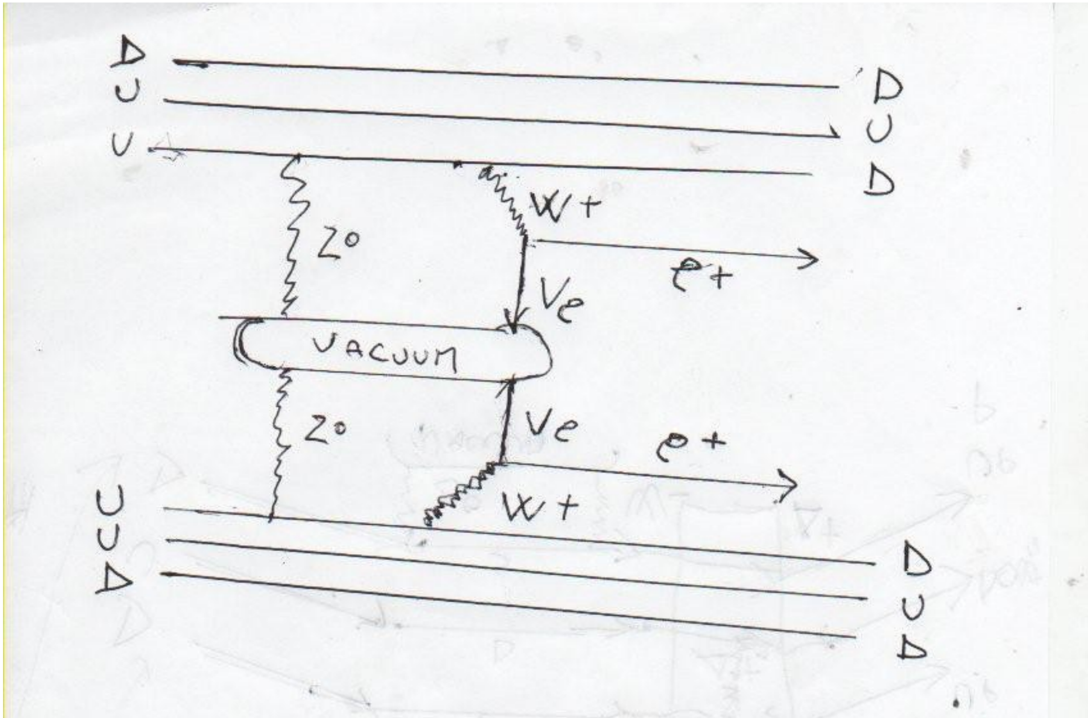


Fig22-.doppio beta decay +

Second-hand

Analysis and formulation of energy density inside the nuclei, with qurk density and electron density.

l Even with this approach, very simplified, we get the same results with the analysis

. For "light" produced in the first part. .. The results are the same, because the amplitudes of the temporal decay of alpha, beta and fission, are the same ..

1a--- Weak statistical section first decays and weak mergers based on change in density.

For a better statistical treatment, with a blend of very interesting data, we take into account statistics based on different parameters from the figures that we've covered so far.

The statistics of decay, based on the nuclear density, given simply by the mass of the particle sizes of the reactions considered. Are simple motto

The basic mechanism of the decays under consideration, the lighting is always an area of 10-18mt, which creates pairs of virtual Z °, which can react with the quarks of the nuclei, and change the electric charge and flavor themselves., and in this case is treated "implicit".

general formula for electron-capture decay rates based on the density (energia/mt3)

Frc = n°el (de/dp)+8 C/mt

Where

Frc = frequency decays

N°el = number electrons in the Bohr radius

de = electron density

dp = proton density

C/mt = constant frequency C = speed of light calculated per square in the MKS

The formula is derived from 'Thomas-Fermi equation,

a = h+2/ me+2

. to which is added a further simplification.

. For a sample calculation.

. Take for example an electron to the Bohr radius, the electron density is calculated by taking the electron mass at rest on limited volume.

electron rest mass = 9,11 10 ^ -31 kg

volume Bohr radius (5 ^ 10-11mt) = 10 ^ -32 MT3

Density Ratio = 9.11 10 -31/10-32 = 10 ^ -1 Kg/mt3

the ratio of electron density at the Fermi radius becomes about 10 ^ +17 Kg/mt3

a proton, has a density of

proton rest mass = 1.67 10 ^ -27 Kg

volume proton = 10^-45 mt3

proton density ratio to the radius of the Fermi = 10 ^ +18 Kg/mt3

we have (with a strong approximation)

density ratio electron-proton density = 10 ^ -1

Dp / De radius of Fermi = 10 ^ -1

. From the formula we obtain, with an electron beam stop, decays at a rate of 3 seconds.

Even slightly varying ratios of density, we have the whole range of frequencies for electron-capture decays., Ranging from about 10 +3 / sec

for 10^-20 /sec.

A precise calculation of the electron density and leads to proton decay have a maximum frequency of about 1000/sec that

We measure in the series by electron capture normal

. if de / dp ratio 10 ^ 0.85, we arrive at a ratio of 10 ^ -7.15 multiplied by the base frequency, we arrive at 10 +0.85, which multiplied by 3 and a number of electrons over the decade, gives us a rate of over three hundred per second, which includes the electron capture decay faster than we observe experimentally.

. We note that, if we consider an electron to the Bohr radius, the rate of decay is of the order of 10-120 sec, which is the same we obtain from previous statistics based on other parameters.

. A remarkable confirmation.

. The same could be decays of nuclei with stable complexes for electron capture, we are at frequencies of 10-112sec, always in line with previous findings.

– Formula beta decay

$F\beta- =$ N° (DN/DP)+8 C/mt

Where

F $\beta-$ = frequency beta-decay

N° = number of neutrons unstable

DN = density of neutrons in the nucleus

DP = density of the nucleus (protons + neutrons total)

C/mt = constant frequency C = speed of light per square

. In the case of beta, we can assume an "excitement of the neutron unstable, with a decrease in density with lifting from the surface of the nucleus.

dall'equazione Variation in density that leads to decay with the time allowed by the equation

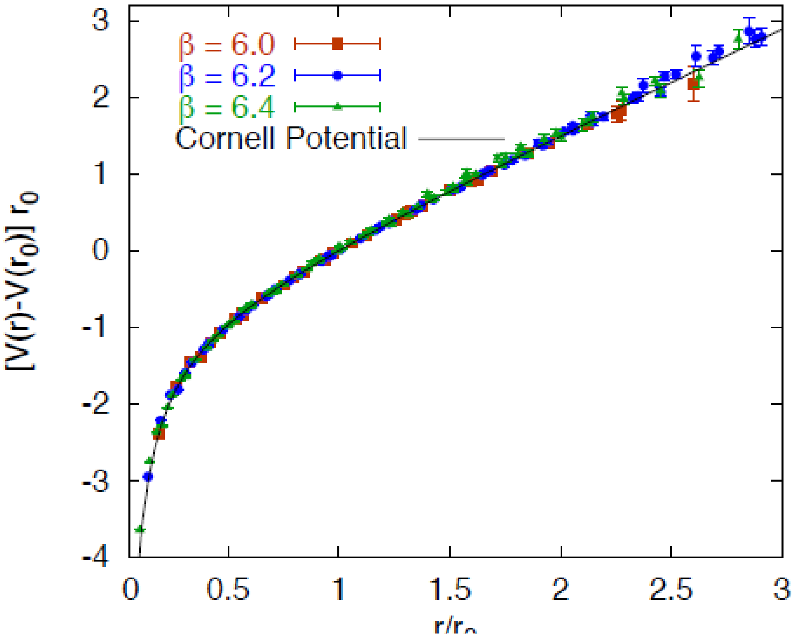


Fig1a-density diagrams

, In the case of the single neutron decay, with a frequency of about 10 ^ -3/sec, We can think of a narrowing of the internal mechanism of a down quark and an up quark, while the other remains down to the size of "normal,,,

. with a narrowing interior to a radius of about 10 ^ -16 meters.

, We have then n in the neutron density ratio, over 10 ^ -1.25,

. enough to have that frequency.

Formula beta decay.+

F β– = N° (DN/DP)+8 C/mt β+= N ° (Dpp / DP) +8 C / mt

Where

Dpp=densty proton

N°= number of proton unstable

… In the case of proton decay, we have some interesting observations ...

.. the same mechanism that we have applied neutron, leads us to consideration of a behavior different ending ..

If we go to the narrowing of the internal up and down quarks to the 10th-17mt, (we are considering a proton ion without the valence electron contribution stabilizer)

and we also have a bulge down the volume external to the 10 -13 m, with density ratio of about 10 ^ -16, and in this case we have, the frequency of illumination of the space of 10 ^ -18 meters needed for creation of pairs of virtual Z °. in about (10 ^ -16) +8

. and frequency decay final 10-120 sec.

, We have the same rate of decay with statistics and density with that of electron capture, whereas the proton is ionized, it is "normal,

with amplitude frequency β - correspondent β +. .

Will not be easy to find experimentally a decay rate of 1 to 10 +113 years

. considerable half-life, but still within the parameters considered by the various theories.

. Even these correspondences seem to confirm the validity of the two statistics and the basic phenomenon of the formation of virtual Z °.

. With this simple formula, we can find very simple statistical decay.

. This simple formula has the disadvantage of not explain anything about the mechanism of creation of virtual Z °, which are responsible for the decay, in contrast to more complex formulas that we have found to get to the same statistics of decay.

. By integrating data that are present in formulas, we can identify specific behaviors of the general decay of nuclei.

. In cases of known natural decay due to experimental observations, with a suitable computer program, we could find the actual values of density, distances and other parameters in the two statistics, and build a very accurate model of the nucleus.

In the case of beryllium

Be7	7.0169	3	Syn	3/2-	53.12d		Li7		0.862

We can calculate

(10^+16).^+2

Frc = 4 (---------------------)+8 3 10^+8 mt/sec mt

(10^+18)^+2

, We can calculate a frequency of about 10 ^ -6/sec,

. roughly, which could correspond to the normal frequency of natural decay BE7.

. Of course, we could find the exact value of the decay, 53.12 days, with a more accurate density ratio.

We consider that enough small changes to the radius of the electron and proton,

., with small variations in the volume of the nucleus and the electron beams, or a neutron isomerized in the case of β -, with a very small change of relative densities, to get all the data corresponding to those actually found experimentally.,

, The data of the two cross-statistics lead us to a very precise model of the nucleus and the protons and neutrons,

and could lead to much simpler models of neutron and proton, with a greater understanding of the relationship between the electroweak and strong nuclear force.

, We consider quarks as composite particles, formed in the case up, two positrons and an electron, joined by neutrinos and antineutrinos, with strong bonding forces from the vacuum of Casini,

particular asymmetry between spin and electric charge, and neutrinos, define a matter-antimatter annihilation process very complex and half-lives of about 10 +113 years

. down in the case, we have two electrons and a positron, the differences in charge +2 / 3 and -1 / 3 always derive from asymmetries in composition, asymmetry of CP violation.

. important to note that the value of CP violation in this case is perfectly capable of explaining the amount of matter and antimatter, which is exactly equal in amount.

. Important to note that the model explains why a Z ° boson, interacting with a quark, strangeness changing it, modifying an electron neutrino to muon neutrino.

The model also explains the difference between quark and anti-quark is due to the presence of neutrinos with internal chirality neutrinos with left and right-handed chirality.

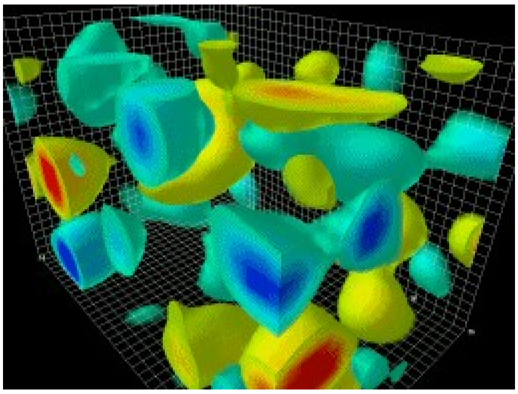


fig2a— painted image of inner core and density of matter-energy

2a---DECAy ALPHA

alpha decay, which is believed to belong to the field of the strong force, and therefore should have no correlation with the weak decays, could have interesting explanations, and return full in the manner envisaged by the decays "weak.

General formula decay rate α

10-52 cm+2

Fα = N°α --------------------- (Kdp+2)+8 cm/sec

10-39 cm+3

Where

N° α = number of alpha, are designed unstable alpha particles in the nucleus

Kdp = probability density factor of enlightenment, as in the formulas of the preceding chapters

Fig 3a-pictorial view of a group of Be9

. In unstable nuclei, chains of two protons and two neutrons, which are present inside the nucleus unstable, it could vibrate and move away from the rest of the nucleus, and may illuminate the fateful 10-16cm apart, or less, and produce pairs of the virtual Z ° empty.

. The couples interact with the 4 particles, and change their status and taste, the transmuted into alpha-odd, then decay very rapidly in alpha, and excess energy of 23 Mev produced by fusion is used to issue out of the particles α

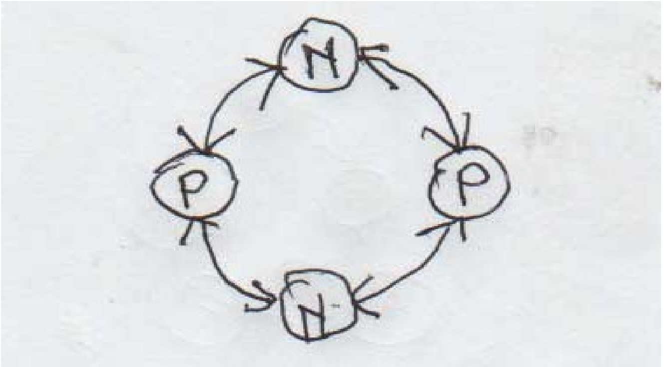


Fig 4a-excitation chain of two protons and two neutrons inside the nucleus

.. With this mechanism, strange, α absorb and re-emit large amounts of energy drawn from the bond, and the two protons and two neutrons, bound in alpha are able to transform the excess energy produced by their merger) in enough energy to detached from the nucleus, and alpha radiation to normal ..

Ξ– . The two neutrons arriving at energies of 1300 MeV, at which point you have to identify the space of 10-16cm and transformation in X-. Ξ–

I always get two protons to energies of 1300Mev transmuted into Ξ °

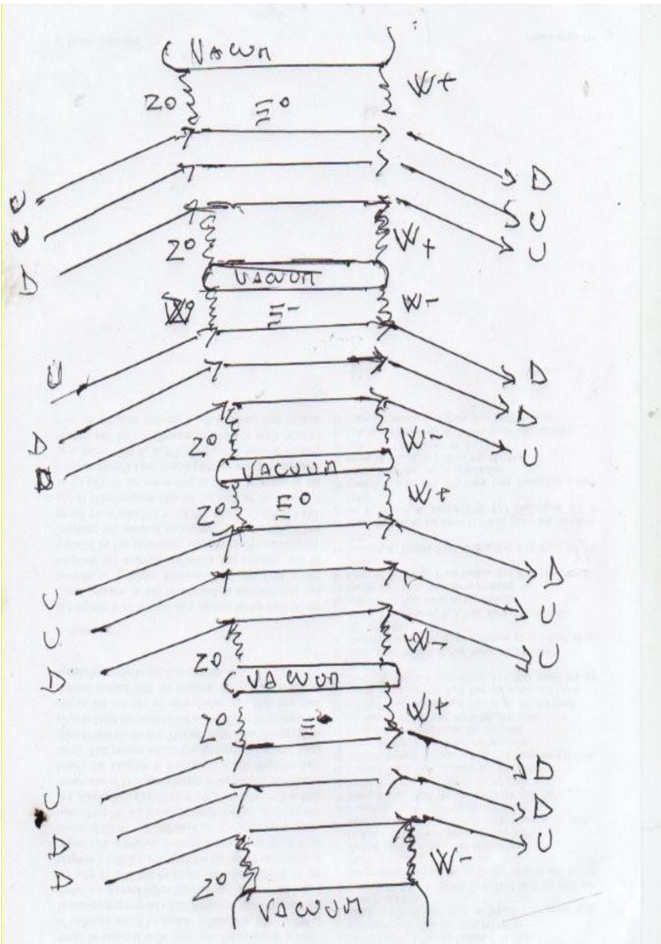


Fig5a- iinternal-diagram P + N + P + N stik α

The Ξ ° -, the decay time. 10-10 sec. For specia ditiofor f bond already been fused together in

.. alpha He4 with weak bonding. with a strong release of energy due to the lack of mass close to 23 Mev . and detach themselves from the core, according to the following reactions

N + Z* ———> Ξ–

N + Z* ———> Ξ–

$P + Z^* \longrightarrow \Xi^\circ$

$2\,\Xi^\circ + 2\,\Xi^- \longrightarrow 4N\varepsilon^{**}$(xi strange particle still in the nucleus)

$4N\varepsilon^{**} \longrightarrow He4 + 23$ Mev **

H2	2.0141	1	0.015	1+	Stable
He4	4.0026	2	100.	0+	Stable

We have an odd nucleus 4He * with a mass of 4.0282 amu,

amu which relaxes with cascade of photons in a time of 10 ^ -10 sec, and emission of energy equal to 0.0256 amu

23-Mev energy is absorbed by the nucleus, which relaxes the alpha-particle emitting He4.

Reaction formulas

$4\Xi^\circ - \; + \; 4W\mp \longrightarrow 4He$

The energy produced by the fusion of the particles, approximately about 23 Mev, is returned to the nucleus, and alpha is emitted to energize the core itself.

. We could also explain the fission of nuclei, again with detection mechanisms lighting of interior spaces in private, including complex chains of neutrons and electrons, and we always produce relaxation of hyperons and strange, with the variables outlined above.

It is also possible a different reaction, perhaps less likely

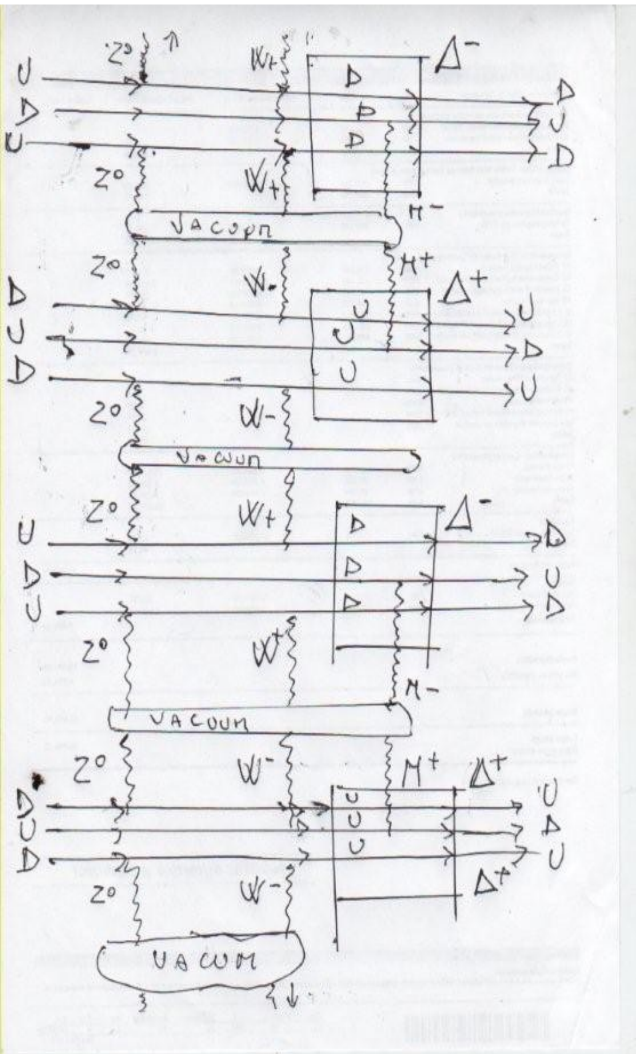


Fig 6a-chain alpha-phase delta

In this case, we have an alpha particle-phase delta neutral

3a-- decay and induced fission in nuclei of iron, thorium, carbon and other elements

The increased stability of nuclei at high atomic number, enables a large amount of decay "simultaneous with protons and neutrons in the nucleus" isomerized with electronic energy exchange with the vortices, and to come to transmute into a core element in rapid decay with the final fission which destroys the vortex electronic

- We may have chain reactions of nucleons, with intermediate stages strange, Xi-Xi °

Precendetente analyzed for alpha stages.

, We also have different reactions in the interior of the quark core, up and down quarks present in pairs of nucleons, with changing the flavor and c, with an intermediate step in the sigmoid, Σ °,. chain with 2 to 4 different chain of alpha decay

The pairs of nucleons, are "beyond excited 1300Mev. Meissner effect of the vortices with inverse electron.

The electrons in the vortex around the cores have an electromagnetic behavior similar to the "normal electron capture, but in this case do not produce light of space and production of Z °:

. their mission end with the transfer of electromagnetic energy to the nucleus.

. We can somehow inject and induce behaviors of vortex chains of millions of electrons outside the nucleus, with appropriate electromagnetic fields or sonic.

Chains, many millions of electrons, combined to spin around the vortex cores in

Then we can have excitation of protons that can define a space of 10-19 m between pairs of neutrons and protons, and are able to produce the Z ° bosons that change flavor to the interacting nuclei.

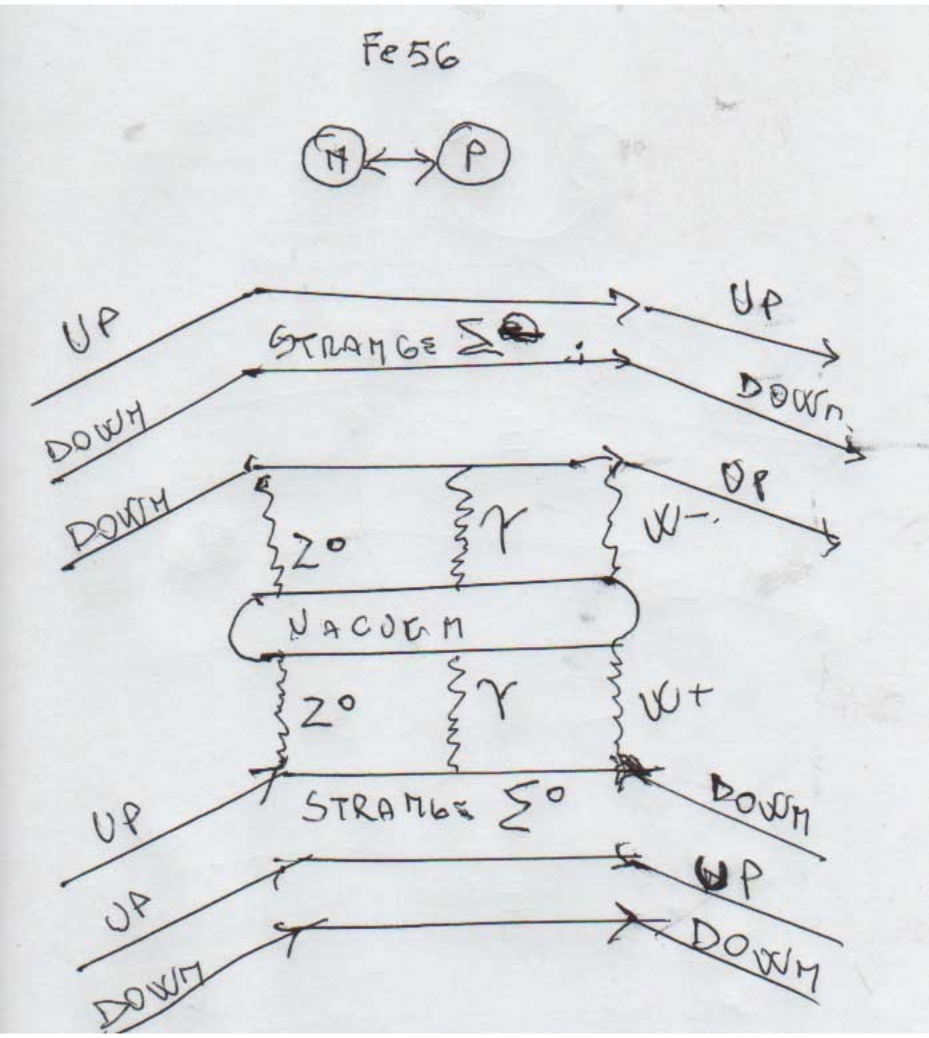


Fig 7a --- 2-chain diagram inner core Fe56

In the particular case of Fe56 have 6 protons and 6 neutrons, which interact with one another to form Σ °

The internal quark 6 protons and 6 neutrons interact with the Z ° bosons produced by illumination of spaces of 10 ^-17cm between the nucleons. And they set off reactions that lead to turn into protons N., and neutron P

The core of Fe56, is subjected to strange transformations 12, 6 Σ ° + 6 Σ° and becomes the nucleus Fe46 * (+12 s) unstable strange ..

. To a chemical, may be similar to a nucleus of Ca56.

., The core of strange Fe (46 +12 * (under the action of the energy decay of the 12 Σ ° fissionable decade, with times in the order of 10-20 sec.,

reazione with a subtraction of energy about 43 Mev,,, or 0.0046 amu increase in mass of the final components of the reaction

obtained at the expense of energy we put into the system to produce chains of electrons.

W bosons $^{\pm}$ are annihilated each other and reabsorbed by the shortcomings of vacuum energy and have no emission of particles and energy out over the same fission products.

. We also have a chain with 16 neutral strange particles, in this case we would have a nucleus with similar characteristics argon 56.

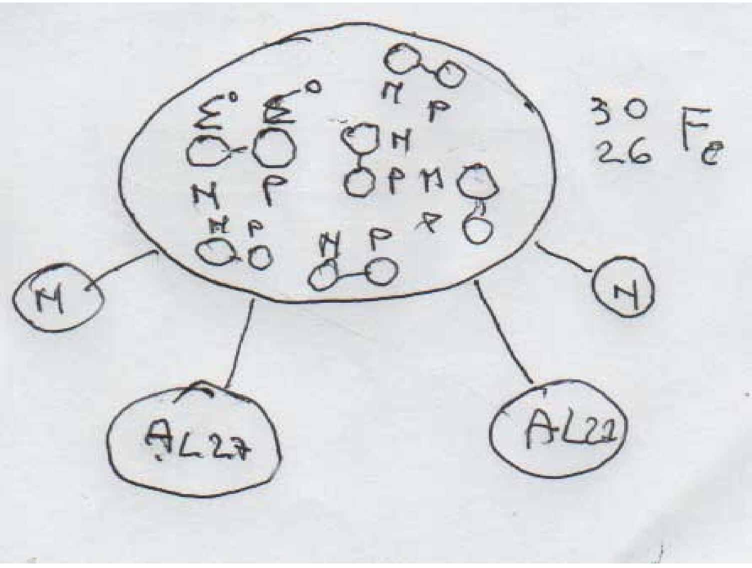


Fig 8a------ fission of the nucleus of Fe56

Fe56 + 12(Z°*) ——> Fe*46(12Σ°)

Fe*46(12Σ° + 12W$^{\pm}$)——>2Al27 +2 N

In the case of Fe57, we have 2 Al27 +3 N

, We have in complex nuclei with atomic number> 18, including the case of Fe56,

a possible braching different rationale, with the formation of alpha

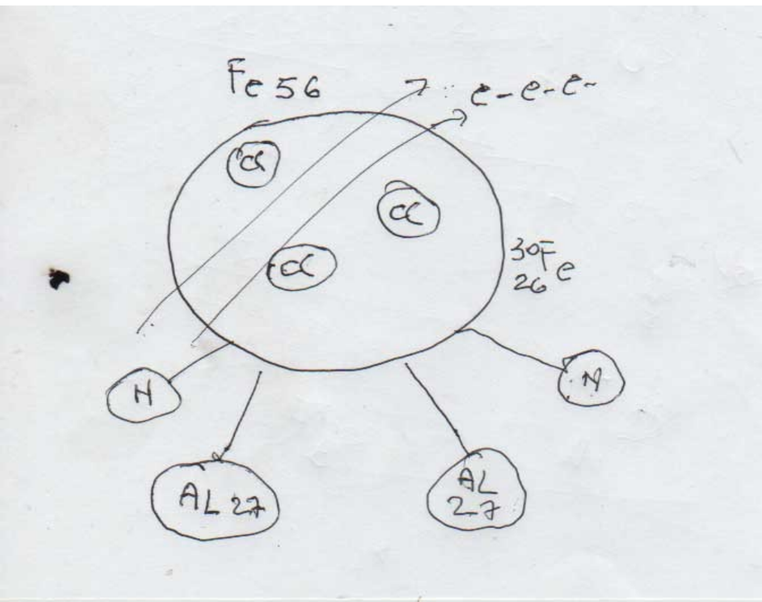


Fig 9a alpha chains in Fe 56

The energy produced by 'weak internal bonding 3 αproduce the fission of the nucleus

) We also have a different channel of transmutation, with the formation of 4-chain alpha-phase delta (see fig 26)

In this case, we would have a phase where 4 alpha phase delta produce a core with characteristics similar to argon 56 with fission into 4 pieces and get immediate feedback in 2AL27 + 2N

We note that in the case of fission of Fe56 –> Al27 + AL27 + 2N,

to balance the endothermic mass defect, we must address in the iron core, at least 43 MeV of energy.

We also have other fission branching ratio in the extreme case could be

Fe56 —> O16 + 3C12 +4N

. Reaction with an energy requirement over 90Mev.

Or Fe54 —> O16 +3C12 +2N

We also have reactions such as

Fe56 ——> Si28 +Mg24 +4N

. In this case we enter more than about 59 Mev of energy.

We may have more likely

Fe54 ——> Si28 + Mg24 +2N Fe54

With about 38 MeV energy

. The reaction in 2 Al27 seems more favorable to the need for less energy.

Other reactions

Fe56- ——> 3O16 +He4 +4N Fe56

With input of energy beyond 80Mev

Or

Fe54 ——> 3O16 + He4 + 2N Fe54

Fe54- ——> 2O16 +Ne20 +2N

With input of energy beyond 78Mev

, In addition, no emission of neutrons,

Fe56 ——> 2O16 + 2B12 Fe56

With beta-decay in 10 milliseconds of B12 C12

, Input of energy beyond 52Mev,

this reaction could be the basis for the huge emissions of carbon dioxide observed in volcanic reactions

also

Fe56 ——> S36 + Ne20 Fe56

With input energy of 23 Mev

- . electroweak induced transformations and mergers in the nuclei of carbon, thorium and other nuclei.

. In many experiments, we have reactions based on carbon, strangely enough "energy.

The decay is very rapid, similar to those of the strong force, and differ in parts from those observed in normal nuclei, are different because the conditions inside a nucleus of 56 Fe are different from those so far studied, and observed

these inexplicable results are explained by a mechanism of carbon nuclei quite complex, but similar to the previous explicit iron. in this case the strange quark pass at Σ * ° reaction

P + Z° ——> Σ*°

N +Z° ——> Σ*°

, These reactions may occur involving one party,

C12 +4(Z°*) ———> C*(4p+2Σ°+2 Σ° +4 n)

Or fully involve the nucleus of C12

C(12 Σ*°) decay n C12 with ten times the order of 10 ^ .10 sec with the mechanism of resorption without producing W power output.

. The core product so strange, it has neutral charge, and very likely allow a merger with a group of C12. normale se riesce ad interagire entro i tempi permessi dal decadimento . normal if it is able to interact within the time allowed by the decay.

C*(12Σ*°)= C*12

C*12 + C12 ——>Mg24*

. MG24*decade in the manner already illustrated hereinabove in MG24 and emits the energy resulting from the defect of mass with a very broad spectrum cascade of photons of energy.

Mg24* ——> Mg24 + Σγ (1.4 Mev)

C12	12.	6	98.9	0+	Stable
Mg24	23.985	12	78.99	0+	Stable

the core of strange neutral C12 * nuclei can fuse with other elements, having neutral charge and thus have a great chance to transmute and produce a quantity of items with significant energy production ..

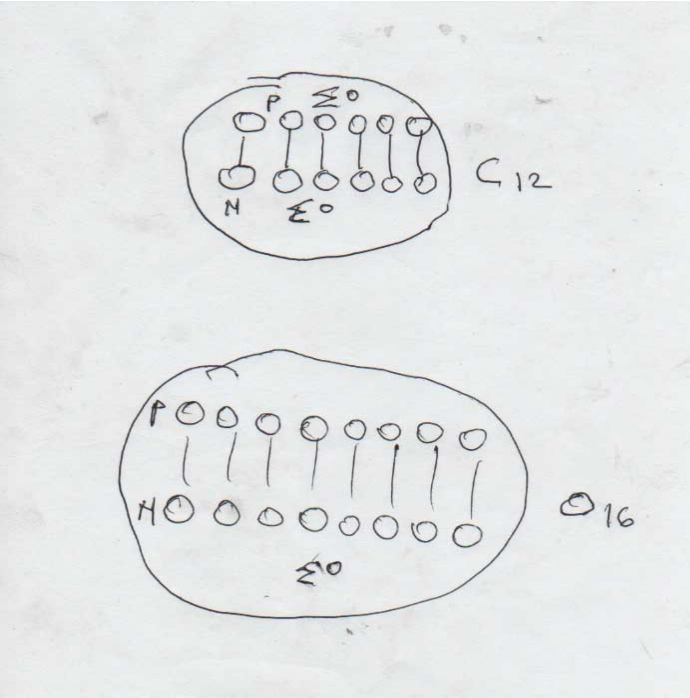


Fig10a--formation of nuclei with neutral strange passage Σ * °

We also have interesting reactions involving oxygen. And that are based upon the complete transformation of O16 in

O*(16 Σ*°) , a neutral particle

, In some cases there is a OH-energization of nuclei, with electronic swirls around the nucleus of O16, detachment of the H radical,

decay and transformation of the strange core O16

, the particular conditions of the experiments, we have a good chance that the odd nuclei neutral O16 * for the specific conditions of the experiments,

, can come together and blend easily, at low temperatures with the following reactions;

O16*strange + O16 ——> S32*strange ——> S32 + fotoni (16.5 Mev)

S32	31.9721	16	95.02	0+	Stable
O16	15.9949	8	99.762	0+	Stable

. O16 * If the core is not strange in the times of 10-10 seconds other nuclei, decays in O16 normal, with no power output.

We could find other mergers involving strange aluminum nuclei, nuclei of sodium and chlorine and silicon,

, Course-we could have a different option, which covers the light nuclei, reactions may be based on process α

, in the case of carbon,

we may merge with triple track, with fusion of a nucleus of 4 He nuclei with two strange neutral 4He * sn and training with triple track C12

reactions

He4 +2 He4*sn ----> C12

He4	4.0026	2	100.	0+	Stable

. With the final release of energy equal to the failure of the final mass = 0.0078 amu.

About 7.3 Mev

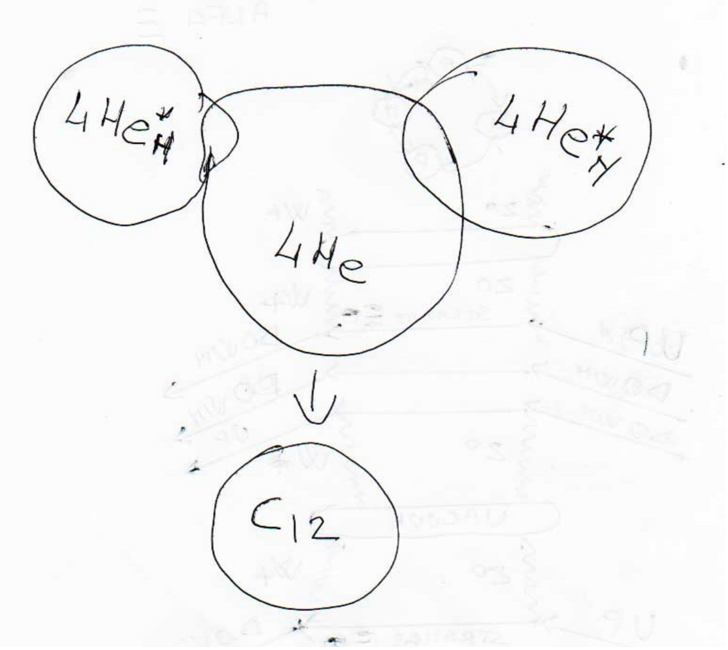


Fig 11a-triple track of 4 He, with final fusion in C12

We might have induced in response αC12,

with fission of the C12 in the final three α

C12+ (12W) ----> 3 He4

.) Endoenergetica reaction obtained at the expense of energy released into the environment., Of about 7.3 Mev, (unlikely).

abnormal production of tritium
we can have an abnormal production of tritium, with reactions

O16+ omega----->N14 + T
O17 + omega----->C12 + 2T

O16	15.9949	8	99.762	0+	Stable
O17	16.9991	9	0.038	5/2+	Stable

--- Alpha response induced with alpha decay accelerated

U238 ----> Th234m ----> Pa234m ----> U234 + N ----> U235 U238 ----> Th234m ----> Pa234m ----> N ---- + Y234> U235

U238	238.0508	146	99.275	0+	4.468E ^{9}y	SF		0.00005	
					4.468E ^{9}y		Th234		4.270
Th234	234.0436	144	Syn	0+	24.10d	-	Pa234		0.273
Pa234	234.0433	143	Syn	4+	6.70h	-	U234		2.197
meta state 0.074MeV			Syn	0-	1.17m	-	U234	99.84	2.271
					1.17m	IT		0.16	0.074

Decay-fission of Th228

Experiments with specific use of Th228 in solution and with "sonofusione" propose an apparent increase in the normal alpha decay by a factor of 10,000

. We could explain the accelerated decay with different branching ratios.

, Th228 nuclei could be excited in the manner already explained with Fe56,

excitations have alpha and contemporary.

Nuc-lide	Atomic Mass	NN	Abun %	Spin	Half Life	DM	DT	BR %	Decay Energy (MeV)
Th228	228.0287	138	Syn	0+	1.9116y		Ra224		5.520

Decay ordre.10-8 sec in two alpha

Rn220	220.0114	134	Syn	0+	55.6s		Po216		6.405

Decay

Po216	216.0019	132	Syn	0+	0.145s		Pb212		6.906

Pb212	211.9919	130	Syn	0+	10.64h	-	Bi212		0.574

Decay

Bi212	211.9913	129	Syn	1-	60.55m	-	Po212	64.06	2.254
					60.55m		Tl208	35.94	6.207

			60.55m	□- + □	Pb208	0.01	11.208
meta state 0.250MeV	Syn	9-	25m	□	Tl208	67	6.457
			25m	□-	Po212	33	2.504
meta state 1.910MeV	Syn		7m	□-	Po212	~100	4.164

branching ratio

Po212	211.9888	128	Syn	0+	0.299us	□			

In Pb208 stable

Tl208	207.982	127	Syn	5+	3.053m	□-	Pb208		5.001

. The different possible branching ratio could be formulated at this time, only with laboratory tests.

., We have the decay of Th228 with simultaneous release of 3 alpha, formation of Pb212 and double-beta decay accelerated in Bi212, Po212, and then with the emission of Auger electrons at low frequency, lower than normal X.,

. Po212 Pb208 stable in the decade immediately, with additional alpha emission.

We thus transmutation of Th228 in Pb208b very quickly, in the order of 10-6 sec.

So we find, for an analysis of ms, an increase of Pb208,

and we would rapidly stimulated emission of 4 Alpha, which accounts for the increase in alpha emission measured

4a-- single neutron decay

. The mechanism of the decay of the neutron is more complicated than the single beta-decay observed in complex nuclei.

. In this particular case are the three quarks together to energize, to define a space of 10 ^ -16 cm, and the pairs of virtual Z ° produced in this way, lead to decay in the neutron proton complex mechanism.

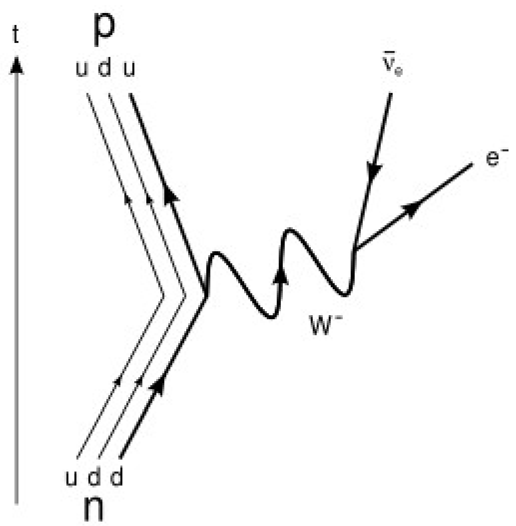


Fig12a—Feynmann-diagram classic β–

Reazione classica Classic Reaction

. $N \longrightarrow P + e^{-} + \nu \varepsilon^{-}$.

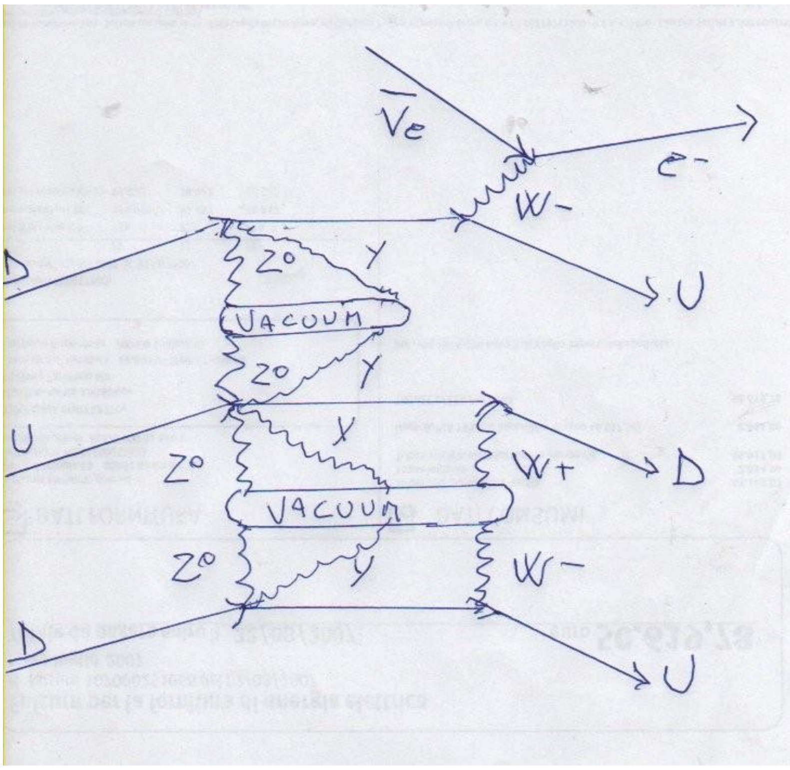


Fig13a- full-beta-decay

I neutroni liberi decadono in tempi di circa 15 minuti, con reazione completa The free neutrons decay time of about 15 minutes, with complete response

down +Z° —–> s+ fotone +W- —–> up + e^- + $\nu\varepsilon^-$

up + 2Z° —–> s + 2fotoni + W+ —–> down

down + Z° —–> s + fotone + W- —–> up

. The mechanism of the decay could be pretty similar, in this particular case are the three quarks to excite each other, to define a space of 10 ^ -16 cm, and the pairs of virtual Z ° produced in this way, lead to the decay neutron proton mechanism similar to the previous one.

Equation of probability density variation inside the neutron

1- - cross section of quark-quark internal ^ = 10-52cm2

0-52 cm+2

Fβ– = 1N --------------------- (Kdp+2)+8 cm/sec

10-39 cm+3

Con Kdp=2.5 we have a decay rate of about 10-3/sec, which corresponds to the observations.

Reazione finale Final reaction

N ——> p + e^- + $\nu\varepsilon^-$

5a - single-proton decay

.. A mechanism of self-excitation may also occur in individual protons, but the internal energy only allows light from either one of them down and up quarks, and does not result in the possibility of issuing a W + free ..

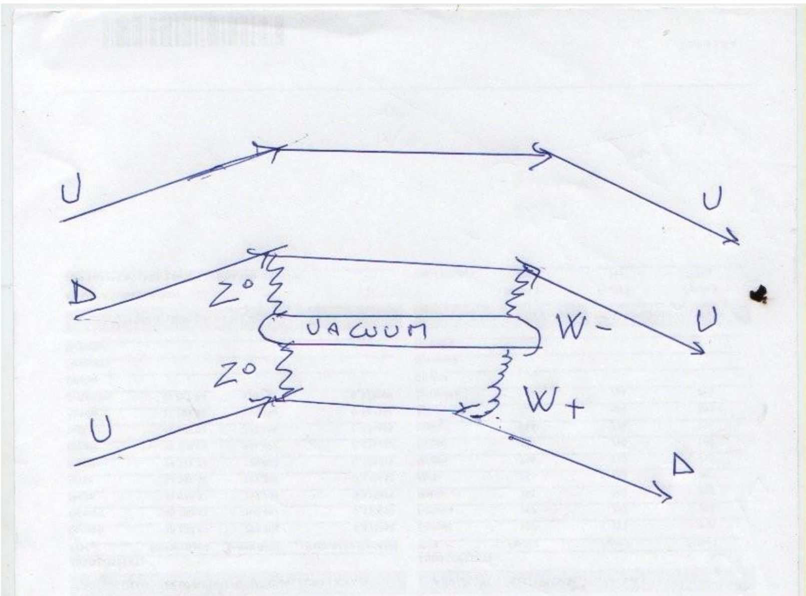
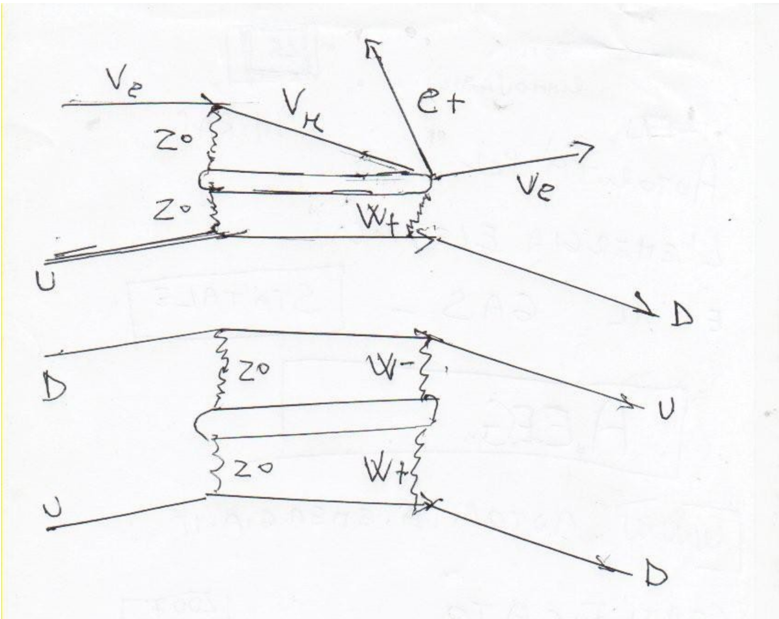


Fig 14a. The proton is stable and can not decay into neutron

. We have a possible decay of a proton into a neutron without interaction with electrons, as we have already explained, the reaction affecting another external element, a neutrino.



. Fig.15a---interaction of proton and neutrino

final reaction

P+ Ve ------ → N + e+ + Ve P + ve

. The reaction is extremely small cross sections.

Single proton in the decay of positron

For this phenomenon, we must assume more complex lighting arrangements with energy states very unlikely the proton, which could decay into e^{++} neutral pion., With a time course over 15 minutes, we are certainly more than the 10 +33 years, probably over +113 10 years.

, In the case of the proton, KDP could take very large values, up to 10 ^ -7 10 ^-104 , bringing the decay time of about 10 ^ +112 years

.. compatible with the above in the case of electron capture ..

. or artificially from the outside to change this kind of attendance rates, it is very difficult.

--- Ratings-General ---

In summary:

1- We treat one-electron capture in the nuclei, with estimates of electro-weak in nuclei "consisting of no more than 4 light between protons and neutrons and nuclei consisting of a heavy atomic number> 4.

2- -We treat the decay β -, β + in nuclei with many nucleons constituting the nucleus, and we assume a neutron or proton

can swing on the core itself, and illuminate a space of 10-19mt, resulting in the production of Z ° bosons and subsequent interaction with final processing of

neutrone in protone e viceversa. neutron into proton and vice versa.

3- We treat the α where small chains of two protons and two neutrons in the nucleus can vibrate, finding space for the production of pairs of virtual Z °.

4-We treat the decay β - in individual neutrons, which have special conditions, where the quarks move away from each other and can identify a space that produces the virtual Z °, and then fell in about 15 minutes in proton + e-+ antineutrino,

. 5- we treat the strange phase induced by a single proton and electron vortices in individual deuterons.

6 – we treat the proton decay "stable

7-t we treat transmutation-induced fission in nuclei complex

We have shown how, by the same mechanism based lighting of spaces with "light heavy

Or bundles of Z ° bosons, we can explain all types of decays, and also the strange fusion and fission reactions in cold fusion.

. It said one of the major differences between the mechanisms weak and strong nuclear decay, the different response energy of the particles involved in the phenomena.

If the particles are forced to merge with high-energy, as in the fusion of D + D strong canonical, the nuclei are forced to release the excess excitation energy in the time allowed by the merger, the order of 10 ^ -23 sec , and then release all the excess energy in a single high-energy γ,

. while the conditions "of delicate fusion weak, with total debt of the refunds to the vacuum energy, the fusion time have a much broader and much larger release times, the order of 10 ^ -10 sec to get to up to 10 ^ -6 sec, and release the excess energy with waterfalls or summations of photons, many photons, in the millions, with a 'broad spectrum of emission.

---- CONCLUSIONS

, With the introduction of the equations of probability of frequency of capture and decay, we can treat statistically the beta-and beta + decay is a simplified

Furthermore, we can bring everything to a single parameter, the amount of space or distance illuminated by the behavior of electrons and neutrons. with the production of Z °, and interactions with magnetic fields in the form of photons of many waterfalls.

And then also the possibility of identifying techniques that may artificially affect the "normal natural features of these decays.

. This seems easier in the case of oscillations of the electrons, neutrons compared to the core constituents, but to understand steps that unify the two types of decay could open many paths to new forms of technology.

In addition, we have a substantial aid from the analysis of behavior "deep copies of W ∓, real and possible interactions with the quarks, to treat a simplified model of protons and neutrons that would allow us a simplified analysis of the electroweak and strong nuclear force

The decay behavior can be explained by man-made fusion reactions "weak and release of energy that we observe in the so-called cold fusion.

+ We could open a new nuclear chemistry with an enormous amount of possibilities and permutations of the mergers, to high energies, which could pass the old dream of alchemy.

. In addition, some behaviors may open interesting perspectives for applications in energy production.

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ìTable of sinboli

α = alpha decay in nuclei

β = beta decay in nuclei

γ = photon gamma

Δ = delta phase in the nucleus

Σ = sigma hyperon

Λ = lambda hyperon

Ξ = Xi hyperon

Ω = omega hyperon

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Neutrons from Piezonuclear Reactions

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On the possible physical mechanism of Chernobyl catastrophe and the unsoundness of official conclusion

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Piezonuclear neutrons from fracturing of inert solids

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Resource Letter QCD-1: Quantum Chromodynamics

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(Dated: October 14, 2010)

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I. QCD

As a theory of the strong interactions, QCD describes
the properties of hadrons. In QCD, the familiar
mesons (the pion, kaon, etc.) are bound states of quarks
and antiquarks; the familiar baryons (the proton, neutron,
_(1232) resonance, etc.) are bound states of three

quarks. Just as the photon binds electric charges into
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Neutrino and contraction of Electroweak Model

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