THEORY of ELEMENTARY PARTICLES

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Abstract

The theory of elementary particles permitting to explain their constitution, sizes, bond energy, possible channels of decay, spectrum of weights and other properties is offered.

PHOTON

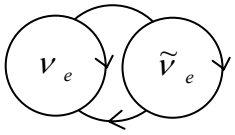


Fig. 1

The photon is figured on a figure 1 and the electronic neutrino and antineutrino revolving around of common center represents. From a figure 1 it is visible, that the photon simultaneously is a particle and antiparticle. The process of an annihilation of an electron and positron now can be written to a kind of such reacting:

$$\nu_e\nu_e+\tilde{}\nu_e\tilde{}\nu_e=\nu_e\tilde{}\nu_e+\nu_e\tilde{}\nu_e \qquad (1)$$

We see, that the matter at annihilation does not fade and, as will be shown below, the electric charge too. Widespread judgement, that "annihilation" gives maximum output of energy, has appeared insecure. On energy content this process far will leave behind of reacting with particles, for which one radius of orbits components is less, than for an electron, and the own angular momentum is significant more. Simultaneously and the calculation of full energy content under the famous formula of the Einstein $E=mC^2$ is only reflection of the sum of kinetic energy of translational motion of a particle and on coils of a screw line and does not correspond really to full energy content of a particle. Apparently, that the photon is gone on a screw trajectory in such a manner that rotated to an axis it always "by one side".

Let's disassemble, for an example that takes place at impact of two protons to formation of a neutron. The transmutation and interosculation of "elementary" particles both transmutation of mass and energy is their fundamental property, to which one we repeatedly shall address. This impact of protons is possible to present, as reacting between a proton and three photons, equivalent on energy to impacting protons:

$$P+3\gamma \rightarrow n+e^{+}+\nu_e \qquad (2).$$

In this reacting: $2\gamma \rightarrow e^{+}+e^{-}$, and one photon is disintegrated: $\gamma \rightarrow \nu_e+\tilde{\nu}_e$. The impact of protons is possible with that by success to treat as transformation of energy of impacting protons not in three photons, and in a pair: an electron - positron and pair: a neutrino - antineutrino. The formed electron and electronic antineutrino, entrapped proton, will forms a neutron. Thus, the photons rather easily can be disintegrated on components and in general to fade, transmitting the energy to other particles is confirm both processes of radiation and occluding of photons by atoms. The decay of a photon on a neutrino and antineutrino especially visually is seen at transformation of a proton in a neutron in a nucleus as a result of *e*-capture (see details in the description of a neutron) or at a positron radioactivity.

Now there is clear a mechanism of formation of exited states of "elementary" particles. The photons with miscellaneous energy differ "by a wavelength de Broglie" (step both radius of screw motion and applicable radius of orbit a neutrino and antineutrino and their sizes). And with increase of energy of a photon a step and radius of screw motion decrease, radius of a photon and components it a neutrino decreases also. Connection between the

sizes of a photon and it "by a wavelength" (step of a screw trajectory or circumference of cross section it) to receive very easily and we it shall make in the chapter about motion of photons.

As in matter sufficient quantity of objects, which one can resonance to occlude photons (precisely the same as the solar System occludes "resonant" macrobodies), the penetrating ability of photons is insignificant. The large penetrating ability separate a neutrino is connected that in customary matter there is no structure "wishing" to gain a neutrino. At eligible energy a neutrino, they could effectively be occluded, for example, by nuclei of high-gravity elements, promoting transformation of protons in neutrons.

Thus, any exited state is represented, as increase of a mechanical moment of a microsystem at value of a mechanical moment of a photon, which one for all photons is identical and is peer $\hbar$. Thus photon can remain in a system, being built in its structure or to dissolve on component a neutrino, which one escape the given microsystem or to vanish at all, by transmitting the energy to products of decay. It concerns and to photons, which one can be imagined "double", "treble" etc. From here also arises quantized of conditions, by the way, pertinent quantumness only of mechanical moments of particles. If all photons had not an identical mechanical moment, about any quantumness could not be speech.

In a described picture becomes to the apparent answer to an apparent paradox, on which one the atom is capable to occlude a photon, the wavelength which one so is great in matching dimensioned of atom, that occluding should not be watched at all, if the photon was an electromagnetic wave.

In this section opportunely to raise the question: than differ the particles having mass of "rest" (i.e. a particle which one can be to be stopped and meter their mass) from particles driving always with speeds of light and having, on presentation of orthodox physics a zero rest-mass. To last concern an electronic neutrino and antineutrino, muonic neutrino and antineutrino (more high-gravity neutrino incorporating "a photon"), and also photon. The answer to this problem is obvious - listed particles or the capabilities of gravidynamic interplay with the companion (electronic neutrino) have not at all, but only with themselves or this interplay between an electronic neutrino and antineutrino so gentle (electrostatic) in matching with interplay a neutrino - neutrino and antineutrino - antineutrino, that of potential well (the definite sizes of orbits) do not exist. Therefore "bring to a stop" particles not having rest-mass, we are compelled step-by-step to disperse their energy, augmenting radius of a screw trajectory and step-by-step reducing mass of these particles, but not their speed. "The nature of mass - one of major unsolved problems of a modern physics. It is accepted to consider, that mass of a elementary particle is determined by fields, which one are connected to it (electromagnetic, nuclear etc.), however any quantitative theory of mass to create it was not possible. Does not exist as well the theories which is accounting for, why the masses of elementary particles will forms a discrete spectrum of values and the more so permitting to determine this spectrum". "Physics of a microcosmos", "Soviet encyclopedia", 1980, page 245. New physics very simply explains originating mass, being founded on the fixed experimentally relation of mass to a running speed of a particle and principle of conservation of moment of momentum. The formula (4.8) in chapter 4 [1] establishes unambiguous connection between an angular momentum of a particle, its mass and radius of orbit in a structure of more composite particle or radius of a screw trajectory of a particle in a free condition. The decreasing of radius of a trajectory or orbit and increase of a common angular momentum of a particle is inevitably results in increase of its mass. Particles having a rest-mass, i.e. having a potential well the interplays of the constituents will form a discrete spectrum of masses, since consist, in the final accounting, of an electronic neutrino and antineutrino. The angular momentum of the constituents of "elementary" particles can receive only discrete values depending on a constitution of a "elementary" particle. It is possible to assimilate such particles to molecules of chemical combinations consisting all of two "atoms" (an electronic neutrino and an antineutrino). Naturally, that at increase of speed of such particles as whole, radius of a screw trajectory them will decrease, and mass to grow, but already fluently. As mass of those particles (with increase of their energy) fluently grows, which one have not a rest-mass (neutrino of all kinds and photon), i.e. the potential well of interplay of the constituents have not.

Here it is necessary to note that circumstance, that the speed of light is not speed of particles of a zero rest-mass, since photons have some mass of "rest" and under the formula of relativistic increase of mass, it will be infinite not at usually adopted speed of

light, and hardly of the greater speed, which one is more comfortable to call as extreme speed. Besides thus an inconsistency in the formula of relativistic increase of mass, you see at once is removed also if to admit existence of particles with a zero rest-mass, it those and remain down to extreme speed, and then, on achievement it, at once will become indeterminate, that is physical nonsense. Therefore, there are no material objects having a zero rest-mass, as well as is not present driving with extreme speed (see section about a capability of above extreme speeds).

It is possible to count up value of extreme speed theoretically, by permitting the formula of relativistic increase of mass concerning extreme speed (instead of speed of light):

$$C_{ext} = \frac{C}{\sqrt{1-\left(\frac{m_0}{m}\right)^2}} \qquad (3),$$

where: C_{ext} - extreme speed, and C - speed of light. By substituting in (3) ratio of mass ν_e free (presumptively $<3\cdot10^{-5}$ m_0, that corresponds <7.3 eV. The value is taken from: "Subatomic physics", Publishing House of the Moscow university, 1994, page 205) and in a structure of a photon (0.5 m_0 for energy of a photon, equal electronic mass), we shall receive value of extreme speed distinguished in the side of increase from speed of light so few, that the error of measurements of observed speed of light on some orders exceeds this difference irrespective of value of particularly substituted digits. If we shall accept the certainly strongly overstated value of mass a free neutrino (we shall not allow for increase of its mass at the expense of gravidynamic interplay a neutrino with each other) equal $\frac{m_0}{137\cdot 2}$, and in this case difference between speed of light in vacuum and extreme speed will be felt only in a fifth significant digit.

Here we have seen one more example of isolation of the mathematical formulas of a modern physics from physical sense and it, unfortunately, not last.

For a photon with a rest energy of an electron we shall accept: C = 299792456 m/sec (on Milligan), m_0=3.729 eV. The professor P. Parshin (Academy of a civil Aviation, St.-Petersburg) in the private letter has notified to the author that under his data "rest-mass" of a photon makes 3.776 eV. m=0.511003 MeV. Substituting these values in the formula (3), we shall discover value of extreme speed C_{ext}=299792456,00798231 m/sec. Recording the formula of relativistic increase of mass for two photons and supposing their "rest-mass" identical (if it will be miscellaneous, it will not be all the same strongly mirrored in an end result), we shall discover after some transformations speed of the second particle depending on a ratio of masses and speed of the first particle:

$$V_2 = \sqrt{c_{ext}^2 - \left(\frac{m_1}{m_2}\right)^2 \left(c_{ext}^2 - V_1^2\right)} \qquad (4).$$

Let's accept a "violet" photon for a particle 1, and "red" for a particle 2. Mass of a "violet" photon in 1.75 times more mass of a "red" photon. Let's accept also, that the "violet" photon is gone with speed C=299792456 m/sec. Certainly, the precise value of its speed will differ from this value, but it is extremely a little. It is important to us to determine a difference of speeds of a "violet" and "red" photon. Substituting all values in (4), we shall discover: V_2=299792455.98353649 m/sec. Thus, the speed of a "red" photon on 0.01646351 m/sec is less than speed "violet". That it has lagged behind for 1 second, 18209510365 seconds or 577 years are necessary. Allowing, that occulting variable stars change the luster from several hours and above, the change of their color at the expense of a difference of speeds of "violet" and "red" photons should be that of the order. In this case similar stars should place apart not less 1 million light years. It corresponds to peripherals of local group of galaxies, where it is impossible to watch not only occulting variable stars, but also in general separate stars. It is necessary to emphasize, that we have found the greatest possible difference of speeds of a "violet" and "red" photon provided that for them under the formula of relativistic increase of speed: m_{01}=m_{02}. If: $\frac{m_1}{m_2} = \frac{m_{01}}{m_{02}}$, V_1=V_2, i.e. "violet" and "red" photon moves with the same speed. Most likely, as always, true

somewhere in the middle: if $m_1/m_2>1$, $\frac{m_1}{m_2} > \frac{m_{01}}{m_{02}}$. About "the rest-mass" of a photon can reason only hypothetically. Despite of a hopelessness to find out miscellaneous speed in photons with miscellaneous energy, watching natural space objects, the space experiment on this problem nevertheless is possible. Skipping a violet and red beam through a Kerr cell with a operating time of 10^{-9} sec (for this time the light beam passes 30 cm). Apart in 5.5 millions kilometers the difference of time of incoming of a violet and red beam will make no more than 10^{-9} sec that is possible to attempt experimentally to find out.

Because of that the photon on a screw trajectory is always gone with speed of light both in translational, and in a tangential direction, a neutrino and antineutrino (heteromatter) in a photon move as a matter of fact by parallel course. Pursuant to the theory of gravidynamic interplay of new physics at motion of a matter (neutrino) and antimatter (antineutrino) in one side they are attracted, is similar to conductors with a current of one direction. Inside the photon a neutrino and antineutrino are not displaced concerning each other, therefore gravidynamic repulsing, bound with internal motion in opposite directions, misses. The electrostatic attraction is compensatives by magnetic repulsing of parallel electric currents of unlike charges. At speed of light electrostatic and magnetic interplay inside a photon equilibrates each other, therefore integrity of a photon is determined practically by gravidynamic interplay of its parts, which one at speed of light is most by strong of all known interplays. Any particles can be sectioned into a screw trajectory on «left-hand» and «right-hand». The photon in essence differs by that except for the «left-hand» and «right-hand» photons there can be photons for which one at motion out neutrino or antineutrino always «looks». Thus, it is possible to lay the emphasis four sorts of photons. The special position of photons among other particles also is, that the photon cannot to itself be presented moved in vacuum with speed less speed of light. Then a neutrino and antineutrino should be gyrated around of common center, i.e. to move in opposite directions, that would result in them to gravidynamic repulsing and decay of a photon, therefore photon has not a rest-mass. The remaining particles are connected by gravidynamic attraction opposite moved on internal orbit homomatter, therefore have a rest-mass. If they could be dispersed up to speed of light, for one revolution of a screw trajectory the components of a particle will commit one revolution around of an axis, i.e. homomatter will move in one direction and the gravidynamic attraction will be replaced by repulsing. It too one of reasons of impossibility of motion with speed of light of particles possessing a rest-mass.

MUONIC NEUTRINO ν_μ

With one accessory "photon" (pair the neutrino - antineutrino) will be formed a muonic neutrino - first exited state an electronic neutrino. The muonic neutrino is figured on a figure 2 and represents a complex particle of a structure $\nu_e\gamma$.

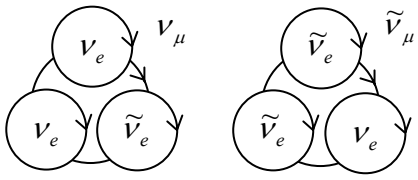


Fig. 2

Radius of orbit, as well as for a photon, depends on energy a muonic neutrino. Naturally, that are possible doubly (ν_τ), triply etc. exited states an electronic neutrino. Multiply exited electronic neutrino should be unstable and to be disintegrated on less exited state and applicable number of photons. The decay a muonic neutrino should originate so: $\nu_\mu \to \nu_e + \gamma$, $\widetilde{\nu}_\mu \to \widetilde{\nu}_e + \gamma$. "The annihilation" a muonic neutrino should implement thus: $\nu_\mu + \widetilde{\nu}_\mu \to 3\gamma$.

Angular momentum the free muonic neutrino makes $\hbar/2$. Accordingly, its rest-mass will be in 137.0391 times more rest-mass an electronic neutrino. With two "photons" the τ-

neutrino (ν_τ) with a moment $\hbar/2$ will be received etc. Similar, that in these particles «the photons» is present in the concrete at a structure of a particle and steadies it; therefore ν_μ, ν_τ etc. are steady formations. The supposition is logical that a pair neutrino will form steady charged particles: an electron - electronic neutrino, proton - muonic antineutrino, hypothetical stable high-gravity negatively charged particle is formed by a pair τ-neutrino (or τ-antineutrino - with a positive charge). Such supposition confirms a constitution of a proton.

PROTON

Official physics recognizes, that the proton is not a elementary particle, and consists of any subparticles.

Let's consider "annihilation" of a proton and antiproton on reacting:

$$P^-+P=2\pi^++2\pi^-+\pi^0 \qquad (5).$$

"Let's throw out" from here all photons and we shall look, that remain. π^0 are two photons. $2\pi^+$ we shall consider as inhering to a proton, and $2\pi^-$ - antiproton. Let's decrypt through separate details (see constitution π^0, π^+ and π^-):

$$2\pi^+ = e^+\nu_e\widetilde{\nu}_\mu\nu_\mu + e^+\nu_e\widetilde{\nu}_\mu\nu_\mu = 2\left(\widetilde{\nu}_e\widetilde{\nu}_e\nu_e\nu_e\widetilde{\nu}_e\widetilde{\nu}_e\nu_e\nu_e\widetilde{\nu}_e\right) = 8\gamma + 2\widetilde{\nu}_e \qquad (6)$$

$$2\pi^- = e^-\widetilde{\nu}_e\widetilde{\nu}_\mu\nu_\mu + e^-\widetilde{\nu}_e\widetilde{\nu}_\mu\nu_\mu = 2\left(\nu_e\nu_e\widetilde{\nu}_e\widetilde{\nu}_e\widetilde{\nu}_e\nu_e\nu_e\nu_e\widetilde{\nu}_e\right) = 8\gamma + 2\nu_e \qquad (7).$$

We see, that anything new in a proton is not present, except for two exited electronic neutrinos, and the structure of a proton $2\widetilde{\nu}_\mu$, and antiproton $2\nu_\mu$, that is mirrored in a figure 3.

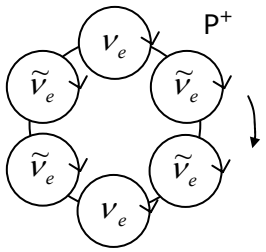


Fig. 3

Rest-mass of a proton 938.256 MeV. Is those there will be also increment of measured mass, since mass of "rest" even six (free) electronic neutrinos anything in this digit will not change. Because of very large bond energy a muonic neutrino in a proton in that kind, as they are figured on a figure 2 to exist can not. The huge bond energy causes "to interflow" two muonic neutrinos with formation of one orbit. On one the neutrino is suit a increment of measured mass 938.256 : 6 = 156.38 MeV or $2.7875 \cdot 10^{-25}$ g. By substituting this value in (4.8) chapter 4 [1], we shall receive r = 0.631 fm. From (4.4) chapter 4 [1] it is possible also to find radius of a proton, allowing, that from a figure 3 on orbit moves two "photons" ($\nu_e\widetilde{\nu}_e$) and one "a positron" ($\widetilde{\nu}_e\widetilde{\nu}_e$), which one and imparts a magnetic moment. Let's remark, that the experimentally retrieved magnetic moment of a proton makes 2.79 μ_{nuc}. The value of radius of a proton under these data is received 0.587 fm, that will be well agrees the previous value of radius. Thus, an own mechanical moment of a proton (spin) makes $3\hbar$, instead of $\hbar/2$, as official physics considers. Accordingly and the magnetic moment of a proton almost three times is more than a nuclear magneton.

The experiments on dissipation a neutrino and electrons on protons with the purpose of analysis of an inner structure of a proton have shown, that if to recognize that a proton consists of three quarks, there is a problem of missing mass (on them half of mass of a proton is necessary only). If a neutrino in a proton we shall call "quarks", them there are six and the problem of missing mass fades. Thus, the experiments confirm conclusions of new physics and contradict official (see fig. 4.12 and page 150-152 in the book: "Fundamental structure of the matter", "World", M., 1984). Nay, at energy of bundle a neutrino in some GeV "already at this level of the resolution there are obvious experimental testimonies that in structure of a proton is contained antiparticles". (Ibidem, page 165-166).

New physics easily explains magnetic moments of a proton, antiproton, neutron (i.e. hadrons in a nomenclature of official science). Itself official physics considers as their by

"abnormal" and for explanation this irregularity again is sufficed for saving straw of "virtual particles". "The magnetic moments of hadrons do not correspond to this formula (giving value of a magneton of the Bohr - V.K.). So, magnetic moment of a proton in 2.79 times more "normal" - nuclear magneton $\mu_{nuc} = e\hbar/2Mc$ (*M* - mass of a proton), and the magnetic moment of a neutron is peer -1.91 μ_{nuc}, i.e. essentially is different from zero point, though the neutron has not electric charge. The originating of an abnormal magnetic moment of hadrons is connected to their strong interaction conditioning mutual virtual transformations of these particles. The neutron, for example, can virtual pass in a pair of charged particles: a proton and negative pi-meson; the proton, by releasing virtual positive π^+-meson, is transformed into a neutron etc. It is possible to tell, that each hadron the definite time conducts in a condition "dissociated" on other particles. From here it is uneasy to understand a genesis of abnormal magnetic moments. So, the magnetic moment of a neutron forms by motion "component" it of a proton and π^--meson etc. Such explanation has, however, only quality nature because of absence of the finished theory of a strong interaction". "Physics of a microcosmos", "Soviet encyclopedia", M., 1980, page 243.

Apparently, that such decay of a proton is possible also: $P^+ \rightarrow e^+ + \pi^0$, which one is supposed the modern theory of quarks (see, for example, "Fundamental structure of the matter", "World", M., 1984, page 170). (See constitution π^0 meson).

The reason of a skewness of a world in the side of formation of protons and electrons, instead of antiprotons and positrons, in the final accounting, should be hidden in a miscellaneous constitution a neutrino and antineutrino and below we shall open it. If for new physics there is no problem of skewness of particles and antiparticles, as their identical quantity (if to count a neutrino and antineutrino), for official physics it very composite problem: "... It is necessary to explain, why today Universe consists almost exclusively of particles, whereas number of antiparticles it is not enough". Ibidem, page 28.

Thus, all world, ambient us, consists of an electronic neutrino with the antiparticle and in this sense to put a problem on "anti-world" it is not sense, since "anti-world" is mated as a matter of fact with our world. ν_e and $\widetilde{\nu}_e$ equally enter in electrons and protons, and also photons. The truth, on one "superfluous" $\widetilde{\nu}_e$ is in each neutron and in this sense our ordinary world more "anti". But if to take into account all free neutrino, the balance will be full. "... Or a flow the electronic neutrino for a surface of the Earth makes not 3 %, as the theory of cosmic rays forecasts, and is significant it is more. It is possible, that an exuberant flow ν_e - extraterrestrial genesis, for example, kept from a bright phase of development of the Universe". "Physics of a microcosmos", "Soviet encyclopedia", M., 1980, page 279.

BIRTH and LOSS of PARTICLES

Such process as an annihilation can not be considered as process of destruction of particles, as in this case there is a reallocating an electronic neutrino of interacting particles. For example, "annihilation" of an electron and positron with formation of two photons more correct to esteem as an exchange reaction a neutrino, as a result of which one their total quantity remains invariable. Even the decay of a photon on a neutrino and antineutrino, which one is watched in many processes, in particular, at a radioactive decay can not be considered as full disappearance of a photon, but only by its decay on component particles. The present loss of a photon is connected to an annihilation an electronic neutrino and antineutrino. In outcome the photon really fades, and its energy is transmitted completely to other particles. For example, at occluding photons by matter, their energy is completely transmitted to atoms, and the photons perish.

On the other hand, the exuberant energy of a particle is easily transformed into pairs a neutrino - antineutrino (photons) or, at sufficiency of exuberant energy - in any other particles under condition of stringent fulfilment of an energy conservation law and electric charge.

Thus, the interconvertibility of matter and energy is the fundamental law of the nature. The modern physics as a matter of fact considers a described transmission mode of energy alone, while new physics guesses, that the same functions can execute and any field, as the certain substance, spread in space, not inclusive of "carriers" of interplay as any particles

(particles also are only clots of a field and do not comprise "matter")". The interplay in a quantum theory of a field looks as exchange of field quanta: the photons transfer an electromagnetic interaction between charged particles, for example by electrons; π-mesons (quanta π-meson field) - nuclear interaction between nucleones etc." Physics of a microcosmos, "Soviet encyclopedia", M., 1980, page 315.

Pay attention of the reader that the mechanism of such interplay to official physics is unknown. Is vague even, whence takes up "field quanta" and where disappear.

For further, it is important to us to consider the mechanism of birth of new particles at the expense of exuberant energy mother. In opinion of new physics any particle represents a gravidynamic system representing orbital motion several component. At acceleration of a particle (or increase of energy of particles already driving with speed of light, for example photons) radius of orbit component decreases, that at constant value of an angular momentum results in increase of a particle mass. At a suddenly stop such particle, similarly to a highly compressed spring, will have considerable exuberant energy at the expense of transformation of relativistic increase of mass again in energy. If at acceleration of a particle increasing mass augments intensity of a gravidynamic field, causing to reduce radius of orbit component, and the further decreasing of radius is hinders by increasing universal repulsing, i.e. the particle has all time the equilibrium configuration, at a stop of a particle its configuration becomes non-equilibrium. Passing from this disequilibrium condition in equilibrium, the particle gives rise to such new particles, in such quantity and with such kinetic energy (on it a large fraction of common balance is pass) that allow energy conservation law and electric charge. "If the energy of a photon is very great, it can spawn not only pair e^+e^-, but also any other aggregate of particles with quantum numbers of vacuum (i.e. zero summary electrical and baryon charges etc.), for example a pair of muons $\mu^+\mu^-$ or pair a proton – antiproton $P\widetilde{P}$. The annihilation of a pair a fragment - antiparticle not only in photons is possible also, but also in massive particles, the birth which one is not forbidden by conservation laws". Physics of a microcosmos, "Soviet encyclopedia ", M., 1980, page 114.

Apparently, that if a particle to not immobilize, it will be stable all time of motion with a relativistic velocity, therefore for any unstable particle there is some threshold kinetic energy, higher by which the particle is one can live unrestrictedly long. Thus, the fact of increase of a life time of relativistic particles cannot be esteemed as unequivocal endorsement of a special relativity theory (SRT), bound with change of flow of time in a driving system.

Let's consider pertinent ad-hoc analogy to formation of atom of hydrogen. The non-equilibrium system from a proton and electron will become equilibrium at "dip" of an electron on a nucleus with radiation of exuberant energy as photons so long as the electron will not take a ground state on Bohr orbit. It is important to us now to pay attention that:

1. The exuberant energy is beamed as photons, i.e. particles consisting from a neutrino and antineutrino. It is clear, that it is the elementary version not breaking any of the laws of the nature.

2. Quantumness of this process is conditioned by that any photons have the same angular momentum equal $\hbar$. The values of an angular momentum of a photon in official and new physics coincide.

3. Some initial kinetic energy of an electron in by the beginning of its "dip" on a nucleus, which one can have any value, is beamed as an ionization continuum.

4. The transition of an electron to this or that excited level has miscellaneous probability, miscellaneous and life time of an electron at miscellaneous levels, but any of these transitions is possible down to transition at once in a ground state (into Bohr orbit).

By taking advantage obvious sympathies of the nature to the standard solutions and applying this analogy to a elementary particle, in case of its sudden stop, it is possible to assert, that at the extension of a "compressed" particle (pursuant to by above listed points):

1. Will be beamed the photon (photons) and/or any number of any particles (in limits permitted an energy conservation law) with a total number in their structure an electronic neutrino to an equal total number an electronic antineutrino (i.e. with an integer "of photons"). Naturally, those in products "of decay" there will be also those fundamental particles, which one went into a structure initial (that, which one accelerated).

2. As under the formula (4.8) particle mass is proportional to its angular momentum, and the angular momentum of a photon is peer $\hbar$, the spectrum of masses given "of a spectral serial" of particles will differ from mass of an initial most light particle ("of a limit of a spectral serial of masses") on an integer of "photon" masses (this mass we shall discover below).

3. All "not quantized" energy "decaying" (as a matter of fact passing from one more exited state in another less exited) particle is affixed to kinetic energy of products of decay.

4. The transition of a particle in that or diverse exited state has miscellaneous probability (therefore have miscellaneous probability those or diverse channels of decay of the given particle). Accordingly and life time of this or that unstable particle miscellaneous, since it represents a definite exited state of initial particle. Any transition between these exited states is possible down to transition at once to an initial particle (which one, however at the same time, too can be unstable and to be disintegrated on component fundamental particles). Apparently, that the life time of a composite particle is determined by a life time of its most short-lived component.

"Photon" mass can be found as follows. As orbital (or motion on a screw trajectory) mechanical moment for a pair a neutrino in 137.04 times more own, to find out, on how many of pairs a neutrino - antineutrino (photons) one particle differs from another, it is necessary a difference of masses of these particles (in MeV) to section on a factor 137.04·0,511 = 70.03 MeV, where 0.511 - electronic mass in MeV.

It is as a matter of convenience of further presentation, we shall call number of "photon" masses as a main quantum number of an elementary particle (MQN), as this number mirrors not real quantity of "photon" masses in a particle, and potential capacity of their formation. This factor updates the rule of the Japanese physicist Nambu, on which one the masses of large number of particles are aliquot to value $137m_e$ or half of this value. About "half" in this rule it is possible to tell, that it is indicated only an odd total number a neutrino in an initial particle kept and in all spectral serial of masses, which one can be formed by this particle.

Than mass of elementary particles is conditioned, the modern physics does not know. "The nature of mass - one of major unsolved problems of a modern physics. It is accepted to consider, that mass of a elementary particle is determined by fields, which one are connected to it (electromagnetic, nuclear etc.), however any quantitative theory of mass to create it was not possible. Does not exist as well the theory which is accounting for, why the masses of elementary particles will forms a discrete spectrum of values and the more so permitting to determine this spectrum". Physics of a microcosmos, "Soviet encyclopedia", M., 1980, page 245.

INITIAL "ELEMENTARY" PARTICLES and THEIR EXITED STATES

MUONS $\mu^{\pm}$

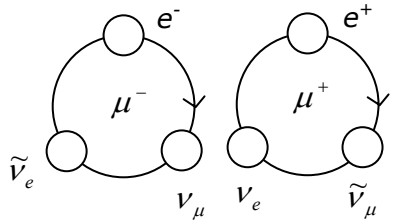


Fig. 4

They are figured on a figure 4.

From a constitution of muons it is visible, that there can not be a neutral muon. Though official physics also considers a muon as a "high-gravity" electron not clearly for what intended, their constitution completely miscellaneous, therefore electron can not be an initial particle for a spectrum of masses of leptons (τ-lepton and yet not opened high-gravity leptons), and those is a muon. "But the muons are not stacked in the scheme of elementary particles, as we present it to ourselves (on presentation of orthodoxes any particle - interaction mediator - V.K.) now: there is an impression, that the muons are not necessary

at all. When the muons were opened, hoped, that they will appear particles, accountable for nuclear forces (i.e. carriers of a strong interaction). ...has appeared... what exactly pions, which one strongly interact with nucleons, instead of is gentle interacting muons, are particles determining a nucleon - nucleon forces. The muons have appeared without business and remain "unemployeds" till now. ...Electrons is fine manage it the role in the nature, it is not required by it to any help from muons. Probably, the muons are electrons - jumbos incidentally created by the nature". J.B. Marion, Physics and physical world, "World", M., 1975, page 611.

In new physics the question is not pertinent at all: for what this or that particle is necessary? All that can arise - arises, and all that can originate - takes place. With that by success it is possible to put problems - for what the silicon either tin is necessary, or any other chemical element, for what the satellites to planets are necessary etc. All increasing number of opened "elementary" particles will force of orthodoxes, eventually, to refuse idea of conformity of a particle to any fundamental interplay. Is rather characteristic of the logician of orthodox thinking: everything, which is not stacked in it Procrustean bed - «anomalously», «incidentally», «does not correspond to an actuality».

Now it is impossible experimentally to carve out relativistic increase of a particle mass from relativistic increase of its electric charge, if the charge varies, the official notions outgo from an invariance of electric charge. We shall consider, that if any charged particle (for example, electron) bodily enters in a structure of a elementary particle, for compensation of increase of its electric charge, as the charge is conditioned by an own angular momentum a neutrino, it is necessary in a structure of a elementary particle should include and electronic antineutrino (or electronic neutrino for a positively charged particle). Thus the minimum of potential energy of a system as a whole is reached. We shall meet a similar piece of a constitution of particles in a neutron and other particles.

Let's count up mass of muons. An electron or the positron in a muon will have an angular momentum $\hbar$, as is present at a muon bodily. The muonic neutrino or antineutrino has a moment $\hbar/2$, and electronic neutrino or antineutrino $\hbar/2{\cdot}137.0391$. Neglecting last value in view of its smallness and sum up all values, we shall receive $1.5\hbar$. Therefore, the main quantum number (MQN) of a muon is equal 1.5. Multiplying this value on the mass contents of unit MQN: 70.03 MeV, we shall discover mass of a muon 105.045 MeV. Experimental value of mass of a muon 105.658387 MeV. Some difference of theoretical and experimental value should not confuse the reader, since usage MQN is only first nearing in calculation of masses of elementary particles and it is necessary still to allow for radius of a trajectory of components of a particle.

For any particles we easily can find bond energy. The common increment of mass is equally arranged on a relativistic increment of measured mass and bond energy, according to the virial theorem and our previous reason. The rest-mass $\mu^{\pm}$ is peer $206.77m_0$. The increment of measured weight will make $206.77\text{-}1 = 205.77m_0$, since the weights of "rest" ν_e and ν_μ very much are small. Same mass will leave and on bond energy, which one will make $205.77{\cdot}0{,}511 = 105$ MeV. The computed values of bond energy for all particles coincide with experimentally retrieved, which one, for example, it is possible to look in the book: "About a systematization of particles", Atomic publishing house, M., 1969, page 86-87.

At almost 100% of probability of decay: $\mu^+ \to e^+ \nu_e \widetilde{\nu}_\mu$ and $\mu^- \to e^- \widetilde{\nu}_e \nu_\mu$, decays: 1. $\mu \to e\gamma\gamma$ ($<1.6{\cdot}10^{-5}$ %), 2. $\mu \to eee$ ($<1.3{\cdot}10^{-7}$ %) and 3. $\mu \to e\gamma\gamma$ ($<6{\cdot}10^{-9}$ %) indicate a capability of association a muonic neutrino with an electronic antineutrino (for μ^-) with formation of two photons (1), or pair an electron - positron (2), or one of photons fades, since completely transmits the energy to products of decay (3).

I shall remind the reader the formula (5.4.4) chapter 5.4 [1]:

$$r = 197.327\frac{N}{m}$$

where: r - radius of a particle in fm (10^{-13} cm), m - particle mass in MeV.

Substituting in (5.4.4) N = 1.5 and mass of a muon 105.658 MeV, we shall discover its radius equal 2.8014 fm, i.e. practically equal radius of an electron. This coincidence not incidentally. Will below be shown, that the radiuses of the majority of particles little differ

from a radius of an electron and in this sense of elementary particles are similar to atoms also little distinguished on the sizes from each other.

From the obtained data it is easy to determine mass by everyone component in total mass of a muon. So, the electronic neutrino will have mass, approximately, rest-masses of an electron twice there are less, i.e. 0.255 MeV, the electron will have mass twice more muonic neutrino, accordingly, 70.269 MeV and 35.134 MeV.

The muon is an ancestor of a spectrum of masses of other more high-gravity leptons (now, while, one is known only: τ-lepton). Therefore, though the τ-lepton is formal has not whole MQN, equal 25.5, but its mass is more than mass of a muon on an integer *N*. Really: (1784.1-105.66) /70.03 = 23.97≈24. The constitution τ-lepton is similar to a muon; only instead of the muonic neutrino on orbit of a particle is τ-neutrino. A ratio of masses between an electron, electronic neutrino and τ-neutrino same, as in a muon, but on an absolute value these masses in 17 times more. As more composite formation, the τ-lepton is less stable, than muon, their life time, accordingly, $0.303 \cdot 10^{-12}$ sec and $2.19703 \cdot 10^{-6}$ sec.

π^0 MESON

Is logical to suspect, that it consists of an electron and positron rotated around of common center of gravidynamic interplay. It is necessary at once to update, that the term "is logical to suspect" though is fair, but does not mirror that long-lived and agonizing logical process, which one behind it is hidden, therefore here of logician is strong only "by back mind".

Opportunely to recollect positronium also is representing an electron and a positron, but the attraction between which one implements not gravidynamic, and electrostatic interplay because of considerable spacing interval between an electron and positron. The positronium can be in a para-condition with a magnetic moment of an electron and positron, directional in the counter sides, life time of $1.25 \cdot 10^{-10}$ sec, at an annihilation two gammas of a quantum will be forms, since at "impact" an electron and positron moves in one side (fig. 5a).

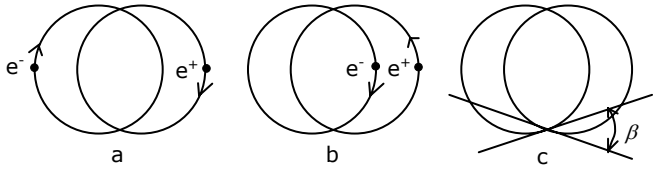


Fig. 5

The small life time a para-positronium is determined by that an electron and positron because of an electrostatic attraction destabilize each other on orbit and the slightest asymmetry results in its progressive increase down to annihilation.

For ortho-positronium (Fig.5b) the magnetic moments of an electron and positron are directed to one side, life time of $1.4 \cdot 10^{-7}$ sec, at an annihilation three gammas of a quantum will be forms, since at "impact" an electron and positron moves in the opposite direction. The much more continuous life time is determined ortho-positronium by that an electron and positron because of an electrostatic attraction steady each other on orbit and at small asymmetry, it self-destructs. It is easy to count up to ensure formation 2γ at motion in one side and 3γ at counter motion, during an annihilation, the angle β (fig.5c) between tangents in point of intersection of orbits of an electron and positron should make $67^0 20'$.

If orbits of an electron and positron considerably to reduce so that has taken effect gravidynamic interplay instead of electrostatic, we shall receive, accordingly, a para-π^0 (fig.5a) with a magnetic moment to equal zero point and it is ortho-π^0 (fig.5b) with a magnetic moment equal $2\mu_e$. Because of strong of gravidynamic interplay not only it is ortho-π^0 to exist can not, but also orbits in a para-π^0 are mated, as shown in a figure 6.

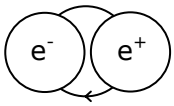


Fig. 6

From a constitution of a neutral pion it is visible, that it MQN N=2, since an electron or the positron on orbit has an angular momentum $\hbar$. Therefore its mass will be: 70.03·2 = 140.06 MeV. Experimental value of mass 134.9739 MeV. The experimental value of mass is appreciable smaller anticipated confirms a conclusion, that gravidynamic interplay between a neutrino and the antineutrino is more gentle than those between a like neutrino (compare an electron and photon). The electrostatic attraction between an electron and positron in a neutral pion, naturally, can not indemnify this weakness.

In the chapter about the theory of a nucleus the definite role of a neutral pion in nuclear processes will be shown. Official physics allocates π-mesons the main liability for nuclear forces. "The pions are carriers of a field of nuclear forces, they for the first time were postulated by Yukawa for theoretical explanation of nuclear forces. According to the meson theory of nuclear forces, the nucleon interplay results from exchange π-mesons. Each nucleon is surrounded by a cloud of pions having the small size. At approach of nucleons up to spacing interval, approximately to equal sizes of a pion cloud, between nucleons there comes a strong interaction conditioned by exchange by π-mesons". N.I. Kariakin etc., Brief reference book on physics, "Higher School", M., 1962, page 496.

Main channel of decay of a neutral pi-meson: $\pi^0 \to \gamma\gamma$ 98.83%. All remaining observed channels of decay make particles, which one in the sum give an integer of photons.

The rest-mass π^0 is peer 264.14m_0, subtracting from this value two rest-masses of an electron, we shall receive a increment of measured mass 262.14m_0. It also will by a main body of electron-binding energy and positron in π^0 and corresponds 134 MeV. Energy of an electrostatic bond will make 1 MeV (calculation on obtained below radius of a pi-meson). The common bond energy will be 135 MeV. Here, for a muon, and further for all particles of calculating values of bond energy coincide with experimental, therefore especially on it to pay attention in further we shall not be.

Substituting mass of a neutral pion in (5.4.4) chapter 5.4 [1], we shall discover radius of orbit of an electron and positron in π^0 equal 2.924 fm.

From a figure 6 is visible, that the π^0-meson to itself and antiparticle. Therefore neutral pion is an ancestor of a spectrum of masses of neutral mesons consisting from an electron and positron. Below we shall see that the charged pions have same MQN, as a neutral pion, though have completely other constitution. Therefore it is possible formally to consider elementary particles with close masses as sublevels of a definite quantum level. Then, for simplification, it is possible to all light mesons (not doing distinctions in their constitution, i.e. initial mother particles) adduced in one graph. Naturally, that in this case in the same quantum condition there can be some particles. Such graph is adduced on a figure 7.

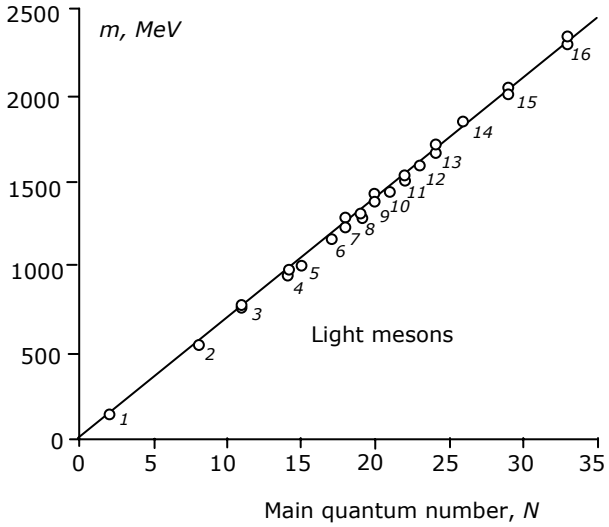


Fig. 7

The denotations on the graph are shown in table 1.

Table 1.

Denotation	MQN, N	Titles of elementary particles and resonances
1	2	$\pi^{\pm}$, π^{0}
2	8	η
3	11	$\rho(770)$, $\omega(783)$
4	14	$\eta'(958)$, f_0 (975), a_0 (980)
5	15	$\varphi(1020)$
6	17	h_1 (1170)
7	18	b_1 (1235), a_1 (1260), f_2 (1270), f_1 (1285)
8	19	$\eta(1295)$, $\pi(1300)$, a_2 (1320)
9	20	$\omega(1390)$, f_0 (1400), f_1 (1420)
10	21	$\eta(1440)$, $\rho(1450)$
11	22	f_1 (1510), f'_2 (1525)
12	23	f_0 (1590), $\omega(1600)$
13	24	ω_3 (1670), π_2 (1670), $\varphi(1680)$, ρ_3 (1690), $\rho(1700)$, f_2 (1720)
14	26	φ_3 (1850)
15	29	f_2 (2010), f_4 (2050)
16	33	f_2 (2300), f_2 (2340)

On a figure 8 and in table 2 the similar data for cc^{-}-mesons are adduced.

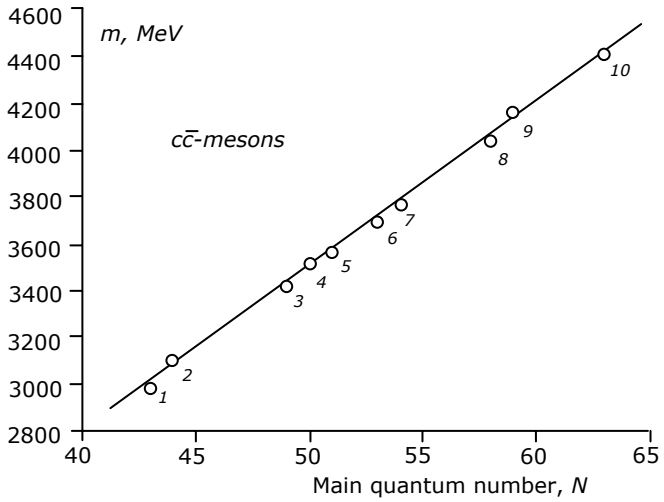


Fig. 8

Table 2.

Denotation	MQN, N	Titles of elementary particles and resonances
1	43	η_c (1S)
2	44	J/ψ(1S)
3	49	χ_{c0} (1P)
4	50	χ_{c1} (1P)
5	51	χ_{c2} (1P)
6	53	ψ(2S)
7	54	ψ(3770)
8	58	ψ(4040)
9	59	ψ(4160)
10	63	ψ(4415)

All of cc^--mesons are neutral particles - spectral serial of masses, an ancestor by which one is the neutral pion. That can be told and about bb^--mesons, which one are shown on a figure 9 and in table 3.

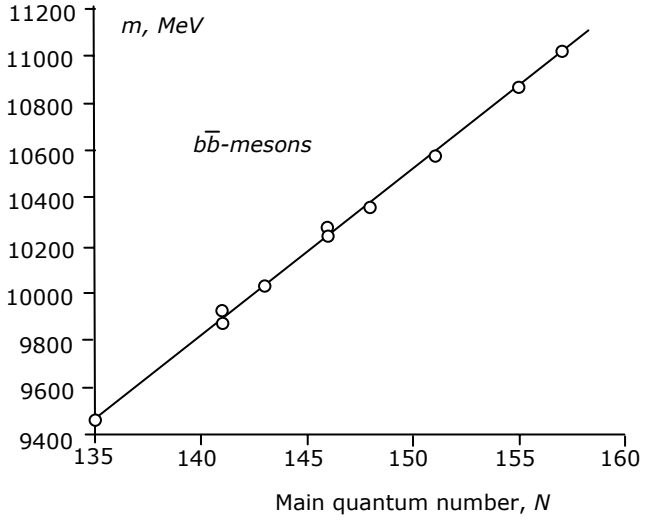


Fig. 9

I want to pay attention the reader to large values MQN of "resonance" particles. It does not speak that similar particles is very complex are arranged. For example, "resonances" with MQN 151, 155 and 157 of table 3 are disintegrated only on a pair: the electron - positron (is natural, with huge kinetic energy). Then it is possible to consider resonance

particles it is possible consider strongly as "compressed" photon. At motion with speed of light, one revolution on orbit with radius of an electron, the neutrino passes for $6 \cdot 10^{-23}$ sec.

Table 3.

Denotation	MQN, N	Titles of elementary particles and resonances
1	135	$\Upsilon(1S)$
2	141	χ_{b0} (1P), χ_{b1} (1P), χ_{b2} (1P)
3	143	$\Upsilon(2S)$
4	146	χ_{b0} (2P), χ_{b1} (2P), χ_{b2} (2P)
5	148	$\Upsilon(3S)$
6	151	$\Upsilon(4S)$
7	155	$\Upsilon(10860)$
8	157	$\Upsilon(11020)$

Practically all "resonances" have a life time that of the order; therefore time of their life suffices not so much on existence, how much on formation of products of decay.

Solving the problem about a spin of "elementary" particles, it is necessary to mean, that it is necessary to understand it not a moment of momentum, bound with rotation of a particle about own the axis, and with motion it on orbit or coils of a screw line. And the spin needs to be carved out from a magnetic moment. If the mechanical moment can have zero value only at counter orbital motion, the magnetic moment can be zero and at one orbit of particles of miscellaneous electric charges, and the sense of a zero mechanical moment can be only formal-mathematical, but not physical, since by stopping one of particles, it is necessary to stop and another. For example, for a π^0-meson the magnetic moment is peer to zero point, and mechanical is peer to the doubled orbital moment of an electron. The own moment of momentum of a particle is very small in comparison with its orbital moment, that is apparent from common sense. In this connection, we by concept of a spin to use frequently we shall not be, since a mechanical moment and the magnetic moment of a particle completely depletes the given problem. Here opportunely to recollect an isotopic spin. Esteeming a constitution of a proton and neutron, and also π^0, π^-, π^+ and similar "isotopic multiplets", it is possible to be convinced that the concept of an isotopic spin not only is needless, but also basically is harmful, since integrates particles anything common among themselves not having. Prolonging this thought and running forward, we shall make the following categorical application: in a microcosmos there is no particular law missing in a macro world. The modern physics in every possible way aims to reduce quantity of "elementary" particles to a minimum, since their increasing number puts insuperable difficulties before the orthodox theory. By one of "ways" to reach it is the introducing of concept of an isotopic spin. Pursuant to this concept such particles, as a proton and neutron are considered as one particle ("an isotopic doublet"), and three pions (neutral and charged) - "an isotopic triplet" etc. The theory of an isotopic spin is formal-mathematical with full absence of clear physical notions, therefore here it is not sense it to introduce even briefly.

PI-MESONS $\pi^{\pm}$

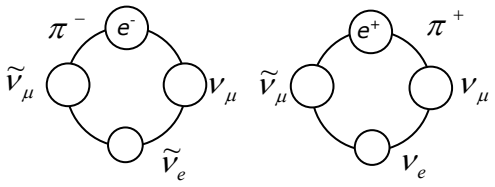


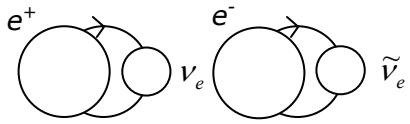
Fig. 10

Are figured on a figure 10.

Pair: the muonic neutrino - muonic antineutrino is possible to esteem, as a "high-gravity" photon in a structure of charged pions. Apparently, such photons should meet and in a free kind.

MQN of a charged pion is equal 2: ($\hbar + \hbar/2 + \hbar/2$). Therefore its mass will be: 2·70.03 = 140.06 MeV. Experimental value of mass 139,5675 MeV. As more composite formation, the charged pions are less steady, than the muons and are disintegrated with probability practically 100 % under the scheme: $\pi^+ \to \mu^+ + \nu_\mu$ and $\pi^- \to \mu^- + \tilde{\nu}_\mu$. For them other decay schemes, are possible for example: $\pi^+ \to \mu^+ \nu_\mu \gamma$ ($1.24 \cdot 10^{-4}$ %) at which one the exuberant energy will forms a photon at the expense of a smaller fraction transmitted to products of decay as kinetic energy. The more composite process is possible, at which one ν_μ and $\tilde{\nu}_\mu$ annihilation with formation of two photons (the energy third is completely transmitted to products of decay) which one, in turn, will forms an electron - positron a pair which is formed π^0, and remained electron (or positron) and $\tilde{\nu}_e$ (or ν_e) scatters. The general process will be such: $\pi^+ \to \pi^0 e^+ \nu_e$ ($1.02 \cdot 10^{-8}$ %).

The rest-mass of a charged pion makes $273.15 m_0$. The increment of measured mass will make (in relation to a muon): 273.15-206.77 = $66.38 m_0$. A rest-mass a muonic neutrino we shall neglect. Energy of connection of a muon and muonic neutrino will make: 66.38·0.511 = 34 MeV. During decay of a pion with formation of a π^0-meson the process goes in such a manner that the observed bond energy will be absolutely small. Radius under the formula



π^+ Fig. 11 π^-

(5.4.4) chapter 5.4 [1] will make 2.8277 fm.

Here it is time to formulate a following rule being to straight lines a consequent of the formula (5.4.4): any elementary particles for which one the rest-mass ("fixed") can be measured, except for a proton (and antiproton), have radius to close classic radius of an electron. It is explained to that the gravidynamic system with such radius has a minimum of potential energy, thus the force of universal repulsing of any component particle is peer to force of gravidynamic attraction it to center of orbit and is gentle depends on mass component. Naturally, that for a relativistic particle this rule does not approach, since its radius is inversely proportional to a relativistic increment of mass. It is fair and for any constituent of an elementary particle. The formulated rule is not diffused to particles formed an electronic neutrino with an own moment, distinct from $\hbar/137$, for example, on a proton. The described condition of elementary particles can be esteemed as the first exited state concerning free stable particles, on which one it is disintegrated. It is possible to call this condition metastable. More exited states have smaller radius of orbit of components and their large masses. The decay more exited states, naturally, takes place much faster. From the point of view of new physics the speed of decay of elementary particles does not determine "gentle", "electrostatic" or "strong" interplay, which one are operated with official physics.

The decay of charged pions under the scheme: $\pi^\pm \to e^\pm + \nu$ is very interesting, though probability it and low ($1.24 \cdot 10^{-4}$ %). It is possible to consider, that at this channel of decay a muonic neutrino annihilation with formation of three photons, the energy which one is completely transmitted to products of decay, i.e. the photons fade. However more possible the point of view, according to which one an own moment of momentum of an electron, as well as other components elementary particles can receive some quantized values, i.e. in an exited state is not only particle as a whole, but also its separate parts. In such case the charged pion can be formed only by pair an electron - antineutrino or positron - neutrino, as shown in a figure 11. Such point of view allows to explain presence of several particles with same MQN (sublevels of a spectrum of masses), and also numerous bifurcations of channels of decay, specially of high-gravity particles having for this purpose large capabilities.

The increment of measured mass for a considered case will make 273.15-1 = $272.15 m_0$. Energy of connection will make 272.15·0.511 = 139 MeV. Radius of orbit and mass of a pion will stay almost former, since the value MQN for an electron in this version of a pion will be equal 2. In this case with probability $3 \cdot 10^{-8}$ % is watched decay of a pion under the scheme:

$\pi^{\pm} \rightarrow e^{\pm} \nu\gamma$, which one now is explained by a natural image, as transition of value of a moment of momentum of the freed electron in a normal condition with emission of a photon.

Thus, the experimental data indicate that not only the orbital mechanical moment of elementary particles can be in an exited state or other quantum condition, as for planets, but in similar condition can be and own moment of the constituents them.

Not the preservation, so-called, parity at decay of pions is visible from their constitution. Let's take, for an example, π^+ on a figure 11. On a principle of conservation of moment of momentum, if at decay of a pion the neutrino will begin to move to us on a left-screw line, the positron will move to the counter side on a right-screw line. At decay π^- the picture of motions components is completely opposite, i.e. as a whole, acts the "combined parity conservation law in weak interactions" being anything by diverse, as by a principle of conservation of moment of momentum under this ornate by the formulation". We are once again convinced that there are no particular laws of a microcosmos, they are single for all levels of universe.

$K^{\pm}$ - MESONS

The charged kaons are figured on a figure 12.

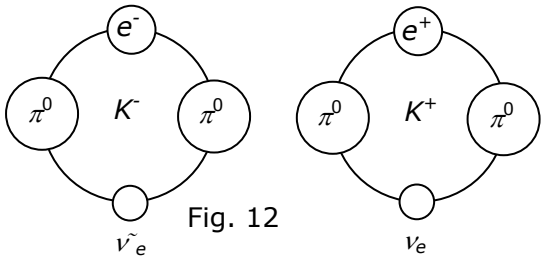


Fig. 12

Orthodox physics attributes kaons to "strange" particles. "The carrier of an electromagnetic interaction is the photon (process of the Dirac). At a weak interaction, a representative example which one is the beta-decay, the electron and antineutrino (process the Fermi) is released. The process of the Yukawa links high-gravity particles (nucleons) with π-mesons. Process the Fermi links high-gravity particles with light. However in this scheme are not stacked μ^- and to *K*-mesons and hyperons, which one were called by virtue of it "as strange" particles". N.I. Kariakin etc., Brief reference book on physics, "Higher School", M., 1962, page 496-497.

Each pion has an own moment $2\hbar$ (whole electron and the positron) to which one is added $\hbar$ for orbit of a kaon, plus an angular momentum of an electron or positron equal $\hbar$. Thus, MQN of a charged kaon will make *N*=7, and its mass: 7·70.03 = 490.21 MeV. Experimental value of mass 493.646 MeV. On a figure 13 and in table 4 the spectrum of masses of particles is shown, the parents which one are the charged and neutral kaons.

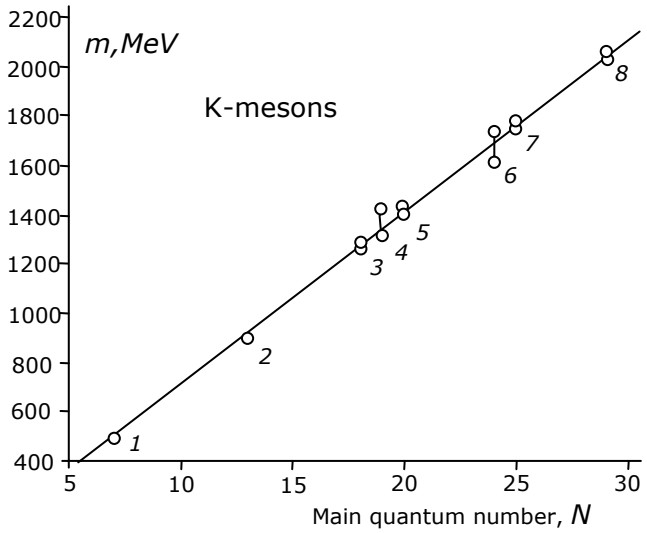


Fig. 13

Table 4.

Denotation	MQN, N	Titles of elementary particles and resonances
1	7	$K^{\pm}$, K^{0}
2	13	$K^{*}(892)^{\pm}$, $K^{*}(892)^{0}$
3	18	K_1 (1270)
4	19	K^{*}(1370)
5	20	K_1 (1400), K_2^{*}(1430), K_0^{*}(1430)
6	24	K^{*}(1680)
7	25	K_2 (1770), K_3^{*}(1780)
8	29	K_4^{*}(2045)

The kaons demonstrate to us large variety of decay schemes permitting to open many secrets of a matter, but this work does not put by the purpose an in-depth analysis of particular problems. Major task it to contour the main, principled positions. Therefore from all versions of charged kaons we shall select most interesting with this point of view. By consideration of charged pions we have found out, that the own moment of an electron can receive heightened quantum values. If for a mobile electron the own moment is in the first quantum condition, and bound in one of versions of a charged pion in second, why can not have third quantum condition? Then a decay scheme and constitution of a kaon will be similar to the applicable pion. The described kaon should have such decay: $K^{\pm}\rightarrow e^{\pm}+\nu$ in case of decay with preservation of an exited electron (the probability of such decay, already is possible to tell, probability of formation of such kaon in a mixture of kaons $1.24\cdot10^{-5}$ %) or: $K^{\pm}\rightarrow e^{\pm}+\nu+2\gamma$ with a normal electron, but in the latter case two photons will forms an electron - positron a pair, i.e. π^{0} and the summary process will be such: $K^{\pm}\rightarrow e^{\pm}\nu\pi^{0}$ (probability of this decay 5 %), that is natural, since the first decay scheme is less expedient energetically. Such kaon is figured on a figure 9.3.2, only radius of an electron will be less, than in a pion. With the same basis the above described processes can be esteemed as an annihilation of electrons and positrons in neutral pions, which one enter in a structure of a charged kaon with formation of four photons. These photons can or completely transmit the energy to products of decay or the part them remain.

If by a rest-mass a neutrino again to neglect, the increment of measured mass will make: 966.38-1=965.38m_0. Energy of connection will make: 965.38·0.511 = 493 MeV. Naturally, that observed bond energy in case of formation π^{0} at decay of a kaon will be considerably below.

Spectrum of masses of kaons and their resonances very visually demonstrates sublevels of quantum levels, i.e. in the same quantum condition there can be some particles. It can be seen on a figure 14. On an ordinate axis the masses of particles from table 9.4.1 in terms of a mass equivalent of a main quantum number, and on an abscissa axis - integers are lay off.

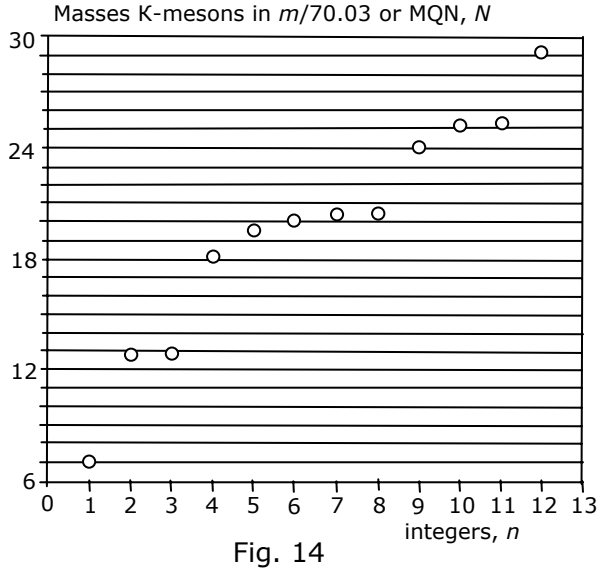


Fig. 14

From a figure it is visible, that the masses of particles in a sublevel can differ from each other, at least, on 70 MeV, that indirectly indicates an exited state not only particles as a whole, but its separate parts. The accounts demonstrates, that during life of a resonance particle (and their overwhelming majority in a world of elementary particles) its components in many cases have no time to make even of one revolution on orbit. Here it is possible to approve doubts of official physics whether to consider resonance particles as the valuable or certain transient forms to comparatively stable particles.

We can already make of a constitution of the reviewed particles the relevant conclusion that the grouping of "elementary" particles on rest-masses does not give the depleting information on them. Each "elementary" particle represents a mixture diversified on a constitution of particles (isomers). The close values of masses of particles of this mixture grow out as properties of three fundamental particles, they consist of which one: a neutrino, electron and proton, and summary MQN for a particle. Each particle represents as though molecule of chemical combination of these fundamental particles and to group them on rest-masses all the same what to group chemical combinations on molecular weights. Then in one heap there are such anything common among them not having, as, for example, CH_4, O, NH_2 for which one the molecular weight is peer 16. Therefore experience of principles of chemical classification of substances, in this case, will be more exact and useful. For example, the positronium and π^0 is represented by particles of one structure e^+e^-, but miscellaneous constitution, i.e. it is two isomers. Precisely as K^+ and π^+ structure $e^+\nu$ also represent isomers of one particle. Apparently as well that all other characteristics of "elementary" particles such, as a life time, electric charge, spin, baryon charge, strangeness, charm, the quarks, moreover and "color" and other can not serves the basis for classification of particles neither separately, nor jointly. Nay, they drive a problem of the single theory of "elementary" particles in dead dock. The basis of rational classification can be only constitution and structure of "elementary" particles. That concerns to atoms, atomic nuclei and to any other particles at all levels of universe keeping in processes, interesting for us, the individuality. The most considerable achievements of new physics of a microcosmos are obtained just on way of consideration of particles structure. For official physics such way is in principle impossible, since on an entrance the lock of an indeterminacy relation of the Heisenberg hangs.

The maximum likelihood of decay of a charged kaon (63 %) is watched on a following channel: $K^{\pm}\rightarrow\mu^{\pm}+\nu_{\mu}$. Looking on a main channel of decay $\pi^{\pm}$ we shall see that most. Therefore kaon of this version can to adduce the same particle, as bulk of pions only with the increased own moment of momentum of a muon (as a matter of fact of electron or positron). The increment of measured mass in relation to a muon will make: 966.38-206.77 = 759.61m_0, accordingly, the bond energy in this version of a kaon will make 388 MeV.

Pay attention to that in powerful a gravidynamic field of a elementary particle and at relativistic velocities of motion of its constituent representing other elementary particle, the life time of this constituent is considerably augmented. Probably, it could be infinite, if the

mother particle existed eternally. So, the free neutral pion π^0 exists $8.4 \cdot 10^{-17}$ sec, and in a charged kaon not less than $1.24 \cdot 10^{-8}$ sec.

NEUTRAL KAONS K_S^0, K_L^0

Are figured on a figure 15 and represent a mixture of isomers of one composition, but miscellaneous structure. Because of it, at same mass, the life time K_S^0 makes $0.8922 \cdot 10^{-10}$ sec, and K_L^0 $5.17 \cdot 10^{-8}$ sec. By replacement of particles on antiparticles (π^0 remain, since it to ourselves an antiparticle) we shall receive one more version K_S^0 and K_L^0, which one do not need to be figured on a separate figure.

If the charged pion is more high-gravity neutral approximately on 4 MeV and it is conditioned miscellaneous by gravidynamic interplay of pairs a neutrino - neutrino and neutrino - antineutrino, the neutral kaons are more high-gravity than charged on same 4 MeV, since in their structure instead of a neutral pion there is charged.

68.4 % all K_S^0 is disintegrated on $\pi^+ + \pi^-$. Whence here arises π^-?

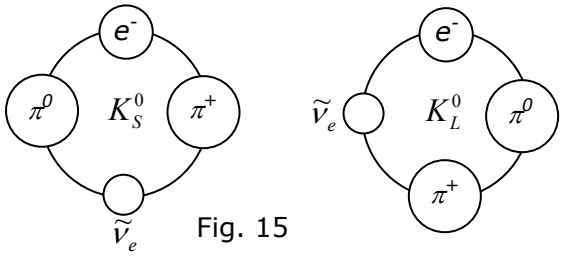


Fig. 15

π^0 with a photon gives a pair the muonic neutrino and antineutrino, which one together with an electron and electronic antineutrino give π^-. Bulk K_L^0 (35.2 %) is disintegrated so: $K_L^0 \rightarrow \pi^{\pm} + e^{-+} + \nu$, i.e. two photons π^0 completely transmit the energy to products of decay, and fade. Naturally, that such decay is watched also, in which one the neutral pion remains whole: $K_L^0 \rightarrow \pi^{\pm} + e^{-+} + \nu + \pi^0$. Though the channels of decay of kaons are multiple, all of they are easily explained on the basis of a constitution already of reviewed particles, therefore there is no sense to stop on it more in detail. In spite of the fact that in neutral kaons a total number the electronic neutrino is equal to number an antineutrino, they are not simultaneously particles and antiparticles, as neutral pions because of oddness MQN (N = 7).

BARYONS

NEUTRON

Is figured on a figure 16.

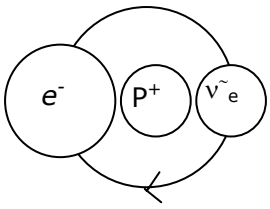


Fig. 16

It represents an electron and electronic antineutrino rotated around of a proton. The magnetic moment of a proton, equal $2.79\mu_{nuc}$ not only is compensates "by an electronic current" on orbit, but also exceeds it on $1.9\mu_{nuc}$. Therefore orbital magnetic moment of an electron makes 4.69 nuclear magnetons.

From (4.4) chapter 4 [1] we shall discover radius of orbit of an electron around of a proton, considering, that it creates the moment, equal $4.69\mu_{nuc} = 4.69 \cdot 0.50504 \cdot 10^{-23}$

ergs·gauss^{-1}, and the charge of an electron e = 4.8029·10^{-10} CGSE, which one has appeared equal 0.986 fm.

In this case, at usage of the formula (4.4) it is necessary to mean, that the charge an antineutrino is peer + 0.5 (in units of an elementary charge), and the charge of an electron on orbit around of a proton will be increased at the same value, therefore in the formula it is necessary to substitute value only of one elementary charge.

The rest-mass of a neutron exceeds all on 2.53m_0 mass of a proton, instead of on 70.03 MeV as it would be possible to expect and it indicates on gentle gravidynamic interplay between a proton and electron (on orbit with an angular momentum $\hbar$ the electronic mass owes increase approximately in 137 times). To be disassembled with this problem, we are addressed to so-called *e*-capture (it still calls to *K*-capture). About *e*-capture we look also in the chapter: "Theory of nuclei of atoms". Essence it that high-gravity nuclei is a lot of protons concerning an equilibrium value captures the proximate orbital electron (with to *K*-shell in a nomenclature of official physics). Thus one of protons of a nucleus is transformed into a neutron with emitting an electronic neutrino. The atom thus beams a characteristic *X*-radiation at the expense of filling of vacancy by other electron and the nucleus thus appears more often exited and beams γ-quanta.

The process of *e*-capture gives a key to new physics to comprehension of the structure of a neutron. Pursuant to the general law of aiming of any system to a minimum of potential energy, at which one the system becomes maximum steady, proximate (is not necessary) to a nucleus an electron releases a photon of *x*-ray range, which one picks up completely orbital angular momentum of an electron, equal $\hbar$. This photon in a field of a nucleus is disintegrated on an electronic neutrino and antineutrino, and the "stopped" electron drops on a nucleus. Naturally, that an electron completely to be stopped can not, its angular momentum remains equal $\hbar$/137.0391. Therefore electron will forms with a proton of a nucleus dwarf "atom of hydrogen" - neutron. As the formation of a neutron in essence does not differ from formation of atom of hydrogen, we can (with looking back on relativistic increase of electronic mass) to use the applicable equations for atom of hydrogen. For example, radius of steady orbit of an electron in a neutron (ground state) we shall discover, by substituting in (2.3) chapter 2 [1] values α in 137.039 times smaller. It then will be equal in accuracy to radius of a mobile electron. As an electron in a neutron in 2.53 times (if not to allow an electronic antineutrino) augments mass, that, following to a law of conservation of angular momentum, radius of its orbit will less in as much time and will make 1.11 fm, that practically corresponds to radius counted on a magnetic moment of a neutron. The additional decreasing of radius of an electron in this case is aroused by electrostatic interplay with a proton.

Thus, the neutron is minihydrogen and in the whole picture is received such, as if the proton is inside an electron. "There are all reasons to guess, that elementary particles, as well as the atoms, have a composite constitution. Last years were conducted experiments on dissipation of electrons of high energy on nuclei of hydrogen and deuterium. It is possible to explain some outcomes of these experiments if to suspect, that the proton and neutron is represented by electric charges, distributed area of radius about 0.8·10^{-13} cm (for a neutron the positive and negative charges are peer among themselves and are arranged by concentric layers)". G.E. Pustovalov, "Atomic and nuclear physics". Publishing House of the Moscow university, 1968, page 22.

All exited states of nuclei of atoms are connected, as well as in atom of hydrogen, to exuberant energy of an electron in a neutron, and γ-radiation of nuclei - consequent of motion of an electron into steady orbit. Thus, as well as in atom, is watched quantumness, conditioned by the same value of an angular momentum for any photons. Below in the theory of nuclei of atoms the additional capabilities γ-radiation by atoms is uncovered.

Neutron and all particles described below and inclusive in the structure a proton, are baryons (in a nomenclature of a modern physics) and save "a baryon charge". The stability of a proton and preservation "of a baryon charge" orthodox physics does not understand, but it is apparent in direct sense of this word, outgoing from a constitution of particles tendered new physics. All baryons in a structure have a proton (or antiproton for true antibaryons). "The baryons are particles, which one can be transformed into protons or to be received from them. Essentially it means following. The protons, i.e. nuclei of atoms of hydrogen, seem completely non-erasible. Generally speaking, it would be quite possible to present, that a proton and electron in atom of hydrogen can annihilation with each other.

They have equal on value and electric charges, opposite on the sign, therefore conservation law of a charge would not be disturbed, and any other obvious conservation laws, which one prohibited this process, in physics does not exist. However we know, that actually this process does not take place. ...The protons can be transformed into neutrons, and neutrons - in protons (as it is known from a phenomenon β-decay); thus are born or the leptons are occluded, but the neutron, as well as proton, concerns to the class of baryons. Thus, we can formulate a conservation law of "baryon number", which one mirrors (but does not explain) this visible stability of a proton, though the nature of this law remains obscure". "Fundamental structure of a matter", "World", M., 1984, page 86-87.

From a constitution of a neutron it is visible, that it is steadiest of all "elementary" particles, except for fundamental. Its relative instability is connected to presence of an exited state of an electron, which one aims to take a ground state (to become free). What for antineutrino is necessary for a neutron we have found out earlier. Here opportunely to recollect that fact, that the electron released by a neutron, has predominantly left-screw helicity. It explains by "weak interaction". However from a figure 16 is visible that releasing the antineutrino (from us) with a right-screw helicity, electron, on a principle of conservation of moment of momentum, flies in the counter side (to us) with a left- screw helicity.

It is interesting to mark that circumstance, that at decay of a neutron though an electron will be formed, but its angular momentum in the first moment is peer not $\hbar$, and $\hbar$/137.0391, i.e. the electron in this moment is look-alike to a "superconducting" electron in metal at temperature of a superconductivity (see chapter about a superconductivity).

Allowing a constitution of a neutron, is undeserved the discarded hypothesis about a protonic-electronic constitution of a nucleus of atom it is possible to consider almost fair, naturally, at the other level.

The antineutron consists of an antiproton, positron and electronic neutrino, i.e. is a true antiparticle in relation to a neutron, therefore annihilation of a neutron and antineutron results in their decay on light particles, as well as annihilation of a proton and antiproton. It cannot be told about depicted below hyperons (in a structure which one the proton is mandatory). It is confirmed by that in products of decay of known hyperons the proton or neutron is watched. The true antihyperons should in products of decay contain an antiproton or antineutron.

The interplay of elementary particles has more often resonance nature. Let's consider this feature on an example of interplay of a proton and electron. In usual conditions this interplay results in formation of atom of hydrogen. This resonance very broad also does not result in formation of new elementary particles. The interplay ceases at energy of an electron superior ionization energy of hydrogen. The reacting of an electron with a proton with formation of a neutron has a rather narrow resonance and will be realized already under certain conditions. We now will be interested by a straight line reacting of a proton and electron: $p+e \rightarrow 4\gamma$ (we look a constitution of a proton and electron). This reacting till now is not realized, though has not the principled physical prohibitions for the implementation. It is needless to remind, that the practical implementation of such reacting gives mankind a cheap and inexhaustible energy source. That two neutrinos of an electron interacted from two antineutrinos of a proton with formation of two photons (two "photon" already are available for a proton), it is necessary, that the condition an electronic neutrino corresponded to a condition an antineutrino in a proton. For this purpose before interplay the relativistic electronic mass should make third of mass of a proton i.e. 312.8 MeV. The reacting will be watched in conditions of a very narrow resonance. As a result of reacting four identical photons with energy everyone 312.8 MeV are received. The common scoring of energy on each act of interplay will make 938.4 MeV.

The generator of neutrons

On the basis of enunciated notions about a superconductivity and constitution of a neutron (see chapter "Neutron") occurs an opportunity of practical manufacture of the cheap generator of neutrons and, accordingly, solution of a problem of unbounded production of energy, since with the help of neutrons exothermic nuclear reactions of synthesis and decay of heavy nuclei easily are carried out. Simultaneous becomes clear the

answer to a problem: whence in space in sufficient amount there are neutrons a average time of life which one makes only 16 minutes.

For formation of a neutron, the electron in a state of superconductivity should be captured by a proton thus the neutron will be formed, which one represents "minihydrogen" - proton around of which one the electron is gyrated with an angular momentum $\alpha\hbar$ where α - fine structure constant. The sizes of a neutron are peer to the sizes of an electron, i.e. the proton is inside an electron. As the existence of a "bare" proton in metal is impossible, but only as atoms of hydrogen, the pulsing or continuous irradiation of a superconductor by resonant photons with energy about 13.6 eV for ionization of hydrogen is necessary. The forming thermal neutrons are guided to the relevant target for embodying exothermic nuclear reaction. The more perspective and productive generator of neutrons can appear electrolysis of a solid electrolyte in requirements of a superconductivity of electrodes. Thus on a negative electrode instead of hydrogen the neutrons should be generated.

As it is possible to guess, as in standard conditions in metal always there will be "cold" electrons, the concentration which sharply one decreases with temperature rise from points of a superconductivity, but does not become zero, it is possible to offer one more expedient of generation of neutrons. At electrolysis of acidic water solution on a negative electrode there is a following process: $H_3O^+ + e^- \rightarrow H + H_2O$ (1). Now we shall suspect, that we promptly have replaced polarity of a electrode and it has become positive. The atomic hydrogen formed from hydroxonium by not having time to be turn into molecular starts to participate in process: $H - e^- \rightarrow p^+$ (2). If now again promptly to replace polarity of a electrode, that a "bare" proton by not having time to form hydroxonium of starts to participate in process: $p^+ + e^- \rightarrow H + n$ (3), that is hope, that alongside with preferred formation of an atomic hydrogen there will be also free neutrons at the expense of "cold" electrons. Apparently, that for rise of efficiency of reaction (3) electrodes should be manufactured of a material, in which one the superconductivity is watched at as much as possible maximum to a heat. In it there will be a heightened concentration of "cold" electrons and at standard temperature, and the frequency of change of polarity should be such, that the reaction products were in a free state no more than 10^{-8} seconds, that corresponds to frequency of the generator of 100 MHz.

Thus, the basic idea of deriving of neutrons by linking an electron dispossessed angular momentum on a screw trajectory, with a proton can be implemented by different paths.

At space alongside with customary there should be "cold" electrons, which one in requirements of low temperatures at collisions with other particles possessing enough small energy, have lost an angular momentum and have ceased to move on a screw trajectory. In requirements of a high vacuum (infrequent collisions) such electrons can exist continuous time, capture their protons and formation of neutrons therefore is possible. Mass of a neutron 1838.65 m_e, mass of a proton 1836.12 m_e. At formation of a neutron of a proton and electron the incremental value of measured mass makes 1838.65-1836.12-1 = 1.53 m_e. Same mass will leave on a binding energy, which one will make 1.53·0,511=0.78 MeV. Energy of an electrostatic bond will add still, approximately, 1 MeV. Therefore, at formation of a neutron the electronic - positron pairs or photons with energy about 1.8 MeV should be radiated. The detection of such radiation will confirm the enunciated mechanism of formation of neutrons in space. The formation of "cold" electrons in space also is encouraged by their often collisions with relict photons, it is easy to them to transmit an angular momentum of an electron.

Λ^0 - HYPERON

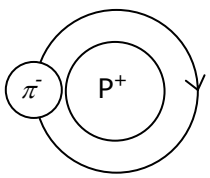


Fig. 17

Is figured on a figure 17 in version of a main channel of decay (65.3 %): $\Lambda^0 \rightarrow P^+ + \pi^-$. MQN of a proton is equal 13 if formally to divide its rest-mass on 70.03 MeV: 938.27231:70.03 = 13.4. As an electronic neutrino in a proton have an own angular momentum not equal to those in an electron, also mass contents of "proton" unit MQN will differ from "electronic",

equal 70.03 MeV. We shall discover it, substituting in the formula (5.4.4) radius, retrieved by us, of a proton (0.631 fm) and its rest-mass (938.27 MeV). Under these data "proton" MQN of a proton *N*=3,000, as it was necessary to expect, since the proton contains three pairs a neutrino. Therefore mass contents of "proton" unit will be: 938.27:3 = 312.8 MeV. Except for endorsement of a constitution of a proton this calculation nothing gives, therefore by "proton" units to use we shall not be, allowing that circumstance, that "a baryon charge" non-erasible in observed range of energies. "There is an impression, that the high-gravity particles can not fade - completely to be disintegrated on light. Can be; behind it disappears any great sacrament of the nature, which one is not uncovered yet. For now physicists have called all particles is more high-gravity than a proton by baryons, and property, storable by them "weight" - baryon charge. To a proton have assigned value of a baryon charge B=1. From the table of decays it is visible, that the products of decay of baryons necessarily contain on a proton, and besides only on one. It means that the baryon charge for all baryons is peer +1". About a systematization of particles, Atomic publishing house,, M., 1969, page 92.

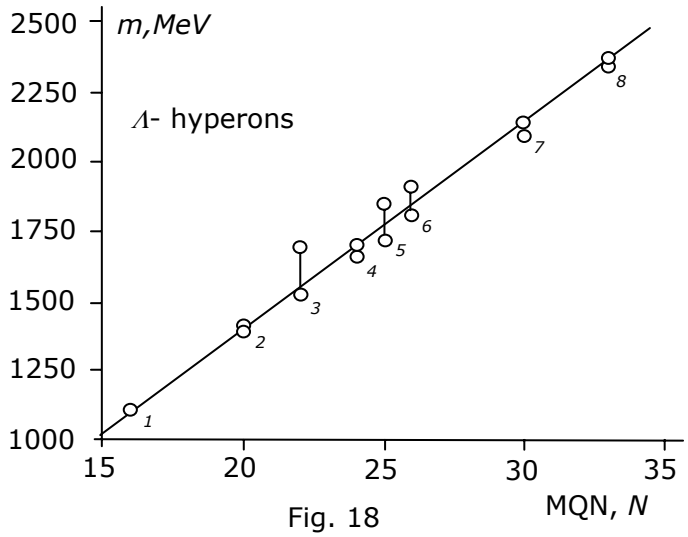


Fig. 18

As we have found out earlier, the whole pion on orbit gives the contribution to 3 units MQN. Thus, MQN Λ^0 will be peer 16, therefore, its mass: 16·70.03 = 1120.48 MeV. Experimental value of mass of this hyperon 1115.63 MeV. The Λ^0-hyperon is the parent of a spectral serial of masses of particles imaged on a figure 18 and tables 5.

Table 5.

Denotation	MQN, N	Titles of elementary particles and resonances
1	16	Λ^0
2	20	$\Lambda(1405)S_{01}$
3	22	$\Lambda(1520)D_{03}$, $\Lambda(1600)P_{01}$
4	24	$\Lambda(1670)S_{01}$, $\Lambda(1690)D_{03}$
5	25	$\Lambda(1800)S_{01}$, $\Lambda(1810)P_{01}$
6	26	$\Lambda(1820)F_{05}$, $\Lambda(1830)D_{05}$, $\Lambda(1890)P_{03}$
7	30	$\Lambda(2100)G_{07}$, $\Lambda(2110)F_{05}$
8	33	$\Lambda(2350)H_{09}$

Here opportunely to recollect "strange" particles to which one attribute hyperons on that basis, in particular, that, for example, mass Λ^0 on 37.7 MeV is more than summary masses of a proton both pion π^- and defect of mass linking these particles as if is not present. It is a vivid example of groundless carry of interplay of nucleons in nuclei of atoms on interplay in "elementary" particles. Sequential usage of this error has resulted in completely absurd notions about the structure of particles, when consider, that the light particles consist from more high-gravity, i.e. the part is more whole.

From a figure 9.6.2.1 and all previous clear that the pion, rotated on orbit is more high-gravity than a free pion and defect of mass linking components hyperon, certainly, is and makes same 37.7 MeV. Therefore "strange" particles essentially do not justify such title.

Leaves, that in the modern theory of particles all is put from legs on a head, since it is considered, that the light particles consist from high-gravity, the defect of mass which one execute bond. In what physical nonsenses such notion has resulted it is well known, though we have be used to them also by those not we consider. The acceptance of model of atom, in which one an electron as a matter of fact does not move, and distribution of properties of atomic nuclei with an obvious immovability of nucleons, when the connection implements only defect of mass components, on a world of elementary particles have resulted, as a consequent, that we now have. Strange in all it only that common philosophical the approach and common sense were skipped in a favour to the seeming facts, differently it should to be excruciated by problems: why the God for a microcosmos has created other laws, having apparent weakness for sample solving problem? Why the parts can be more whole? How a consequent last - why we a microcosmos should consider fixed?

Now we can place all on the places and to remove all dislocations. For this purpose it is necessary to add only, that the nuclei of atoms represent analog of crystal lattice, and the connection of nucleons implements a gravidynamic field, i.e. the nucleons are connected, as small magnets and really "are immobile" in that sense, as we speak about "immovability" of atoms in points of lattice of solids.

Σ - HYPERONS

Following under the order MQN, the conditioned constitution of a particle, instead of its exited state will be 17. Mass of such particles: 17·70.03 = 1190.5 MeV. An experimental rest-mass Σ^+ 1189.37 MeV, Σ^0 1192.55 MeV, Σ^- 1197.43 MeV. The possible versions of a constitution Σ-hyperons are figured on a figure 19.

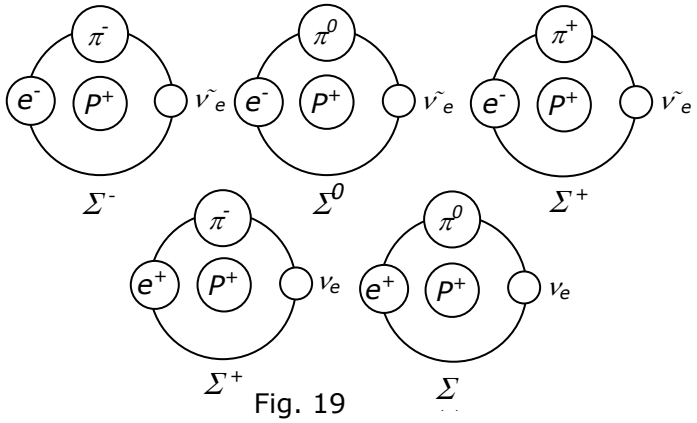


Fig. 19

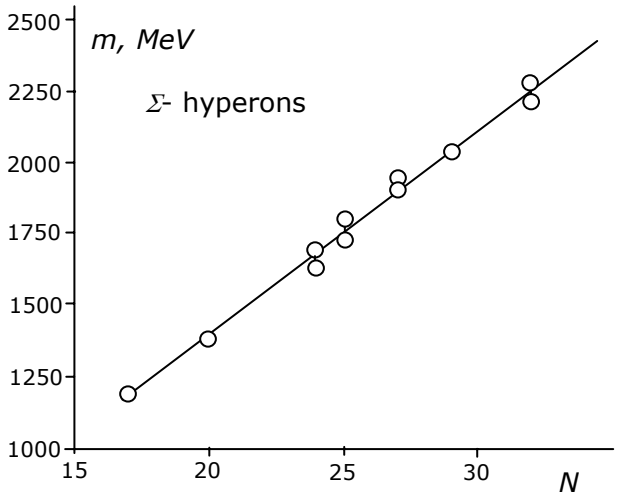


Fig. 20

Probably, that the basic version Σ^0 is exited (i.e. incorporating photon with N=1) Λ^0-hyperon (fig. 17), therefore neutral sigma - hyperon practically in 100 % cases is disintegrated on a Λ^0-hyperon and photon. A charged sigma - hyperons basically are disintegrated on a neutron and pion of the applicable charge. On an example the sigma - hyperon is well visible a correlation between their charge, rest-mass and life time. In process of increase of a negative charge of a shell ambient a proton, it augments mass at the expense of decreasing radius of orbit and, accordingly, strength, that results in increase of a life time (Σ^+ 1189.37 MeV, τ=0.799·10^{-10} sec; Σ^- 1197.43 MeV, τ=1.479·10^{-10} sec). The presence π^0 in a structure Σ^0 is confirmed by decreasing of a life time last on 9 orders: τ=7.4·10^{-20} sec. Spectrum of masses Σ-hyperons is shown on a figure 20 and in table 6.

Table 6.

Denotation	MQN, N	Titles of elementary particles and resonances
1	17	$\Sigma^{\pm,0}$
2	20	$\Sigma(1385)^+$, $\Sigma(1385)^0$, $\Sigma(1385)^-$
3	24	$\Sigma(1660)P_{11}$, $\Sigma(1670)D_{13}$
4	25	$\Sigma(1750)S_{11}$, $\Sigma(1775)D_{15}$
5	27	$\Sigma(1915)F_{15}$, $\Sigma(1940)D_{13}$
6	29	$\Sigma(2030)F_{17}$
7	32	$\Sigma(2250)$

Ξ^0, Ξ^- HYPERONS

These hyperons are figured on a figure 21.

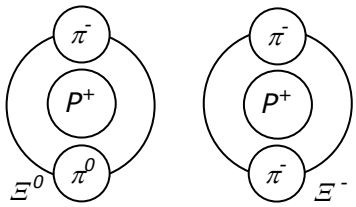


Fig. 21

Almost 100 % of particles are disintegrated pursuant to their constitution on a figure 21: $\Xi^0 \rightarrow \Lambda^0 + \pi^0$, $\Xi^- \rightarrow \Lambda^0 + \pi^-$.

MQN will represent the sum MQN of a proton (N=13) and two pions on orbit (on N=3 on each pion). In total are received 19. Accordingly, mass of these hyperons will be: 19·70.03 = 1330.6 MeV. Experimental value of a rest-mass Ξ^0 1314.9 MeV, and Ξ^- 1321.32 MeV. Charged the Ξ-hyperon is more high-gravity neutral because of a charged pion in its

structure, which one is more high-gravity than a neutral pion. Ξ-hyperons, as well as other particles are ancestors of a spectral serial of masses of the applicable resonances. The similar graphs and tables were adduced above; therefore it is not necessary by them to overload presentation. Already it is clear, that any of known particles is stacked in a common scheme of the constitution of elementary particles.

Ω^- - HYPERON

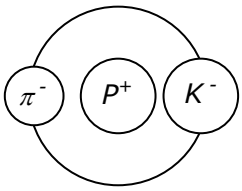


Fig. 22

By a main channel of decay: $\Omega \rightarrow \Lambda^0 + K^-$ (67.8 %), it is arranged how is shown on a figure 22.

As MQN of a kaon is equal 7 (if it is gone on orbit, 8), MQN Ω-hyperon will be 13+3+8=24. Mass of this particle: $24 \cdot 70.03 = 1680.7$ MeV. The experimental value of a rest-mass is equal 1672.43 MeV. The reader can set a quite reasonable problem: at the expense of that components "elementary" of particles are retained for a proton, in particular, positively charged? The author has prepared on it the simple answer - at the expense of gravidynamic analog of force of the Lorentz, since components of a proton moves in a counter direction.

In SUMMARY ABOUT ELEMENTARY PARTICLES

Quite probably, and even for certain it is possible to assert, that in an introduced picture of "elementary" particles there are inaccuracy, as it was necessary to operate only with one equation with three unknowns, but the principle is clear: these particles represent a certain similarity of chemical combinations and number of such connections not limited. In the set up notions the objective properties of particles are stacked all without exception.

New physics tenders a simple picture of elementary particles. All of them at the end consist of an electronic neutrino and antineutrino. These base particles will forms fundamental stable particles (with antiparticles): remaining types a neutrino, electron, proton and photon. The stable particles will forms quasistable and unstable (resonances). The life time of quasistable particles makes from 900 sec for a free neutron till 10^{-20} sec for a Σ^0-hyperon. The components of these particles are in the first quantum condition (have not an aliquot angular momentum), therefore they are comparative steady. Than less number of components, quasistable particle especially is steady. The presence of components capable of annihilation (for example, electron and positron) reduces a life time of a quasistable particle sharply. The resonances have a life time of the order of 10^{-23} sec. It is conditioned by that the components of unstable particles have an aliquot angular momentum, i.e. are in an exited state. In time 10^{-23} sec components pass in a ground state and the resonance is disintegrated on quasistable and, eventually, stable particles. On this basis the resonances can be considered as separate particles only conditionally. The condition any of a component of an unstable particle simultaneously is similar on condition of an exited electron in atom and on a quantum condition of planets of a solar System (see applicable chapter). It again demonstrates a surprising commonality of the laws at all levels of universe. The angular momentum of a component of a elementary particle is peer *mCr*. To increase an angular momentum twice, it is necessary to increase twice mass of a component, since the motion with speed of light to change is impossible. Also it is impossible to increase twice radius of orbit, since thus the gravidynamic interplay practically will vanish. Thus, if the quantum condition of an electron in the given resonance is equal 5, it means, that on orbit the electron is gone with mass in 5 times more by that, which one would be in the basic quantum condition (we shall designate such electron $(5)e^-$). The life time of a resonance decreases with increase of number of its components and from a quantum condition of each component is weakly depends. Let's put some examples of a

constitution of resonances. The resonance f_2 has mass 1274 MeV and constitution (9)e^+(9)e^-. As the electron in a ground state on orbit has an angular momentum $\hbar$, MQN of this resonance will be equal 18, and mass: 18·70,03 = 1260 MeV. Missing 14 MeV are connected that at the given calculation we leave out amplification of gravidynamic interplay of components at the expense of their aliquot masses as a result of which radius of orbits slightly decreases, and mass is augmented for preservation of an angular momentum. Resonances ρ^+: (6)e^+(5)$\tilde{\nu}_\mu$(5)ν_μ(?)ν_e, ρ^-: (6)e^-(5)$\tilde{\nu}_\mu$(5)ν_μ(?)$\tilde{\nu}_e$ and ρ^0: (4)e^+(4)e^-(3)$\tilde{\nu}_\mu$(3)ν_μ have MQN equal 11 and mass: 11·70.03 = 770 MeV. The experimental value of their masses is equal 768 MeV. As the upper threshold for energy of a particle does not exist, we always shall open resonances with any masses and number them not limited. Here it is necessary to make one remark to address orthodox notions about a life time of elementary particles. It is considered, that the decay of quasistable particles is conditioned so-called electromagnetic and weak interaction, and decay of resonances - by a strong interaction. The logic suggests that all should be on the contrary - the stronger gravidynamic interplay, the more stable particle.

From the introduced schemes of a constitution of elementary particles it is visible, that the official classification of particles has in notion of new physics definite physical sense. The leptons consist of electrons and neutrino; by it assign a quantum number - leptonic charge. In mesons occur jointly present a particle and antiparticle of leptons, and in a structure of strange mesons there are pions. In baryons the presence of a proton (or antiproton) is necessary, therefore to baryons assign a quantum number - baryon charge. Apparently, that a leptonic and baryon charge are saved at transformations of particles, since describe fundamental stable particles, which one can occur or to fade only in a pair with the antiparticle. The so-called charge multiples (proton - neutron, pions etc.) concern to particles with identical value MQN, though they can have a miscellaneous constitution. For strange baryons a quantum number the strangeness corresponds to quantity of pions in a structure of a particle, for example for a Λ^0-hyperon one pion (fig. 17) strangeness -1, for Σ-hyperons strangeness too -1 and too in a structure one pion (fig. 19), for Ξ-hyperons strangeness -2 and in a structure of particles 2 pions (fig. 21), for Ω^--hyperon strangeness -3 and in a structure of this particle 3 pions (fig. 22). Thus, the customary particles enter in a structure strange; strange enter in a structure charmed, and charmed in a structure beautiful. Official physics does not know reasons of a genesis of quantum numbers of elementary particles. Modern quark model of mesons and baryons does not explain a genesis of quantum numbers. It does not give also values of masses of particles, though at definite a quark structure mass of particles should easily be determined.

Spectrum of masses of elementary particles.

Definition of mass of a elementary particle (in MeV) under the formula:

$$m=70.03\cdot N \qquad (8),$$

where N - the main quantum number (integers from 1 up to ∞) is only first nearing from the formula (5.4.4) at two suppositions: 1. Radius of orbit of a components particle is peer to radius of an electron (2.81785 fm). 2. The summary angular momentum (MQN) has the whole value. In real particles these suppositions are not exact, for example, radius of muons is less than radius of an electron and makes 2.8014 fm, therefore computational mass on (8) appears less experimental on 0,6 MeV at the expense of decreasing radius of orbit. Radius of orbit decreases because of gravidynamic attraction of a matter e^- - ν_μ or antimatter e^+ - $\tilde{\nu}_\mu$. The matter and antimatter is weakly interacting inside elementary particles, therefore radius of orbit can be increased and the calculating value of a particle mass will become more experimental. For example, in π^0 radius of orbit makes 2.924 fm at the expense of weak of gravidynamic attraction of an electron both positron and the calculating value of mass exceeds experimental on 5.1 MeV. For charged pions radius of orbit 2.8277 fm at the expense of easing of connection e^- - $\tilde{\nu}_\mu$ or e^+ - ν_μ, therefore their computational mass on 0.5 MeV is more experimental, and the charged pions are more high-gravity neutral on 4.6 MeV. As the neutral kaons contain a charged pion, and the charged kaons instead of charged have a neutral pion, their masses are more on 4 MeV, instead of on 4.6 MeV at the expense of a weak bond e^- - π^+ or e^+ - π^- (fig. 15). Updated MQN of particles has not the whole value because of presence components on orbit with value of an angular momentum not equal $\hbar$, for example $\hbar/2$ or $\hbar/137.0391$. If in MQN of

muons we shall take into account an electronic neutrino or antineutrino with an angular momentum $0.0036\hbar$, the difference between computational and experimental value of masses of muons will make any more 0.6 MeV, and 0.36 MeV, i.e. the deviation does not exceed 0,35 % even without the registration of interplay between an electron (positron) and muonic antineutrino (muonic neutrino). Among other things for many particles it is necessary to allow and electrostatic interplay components. It is well visible on an example of a figure (19): Σ^+ (1189 MeV), Σ^0 (1193 MeV) and Σ^- (1197 MeV). The masses of these hyperons are augmented in parallel with increase of an electrostatic attraction of muons to a proton. Thus, the registration of effects of the second order allows finding more precise mass of any elementary particle. In connection with set up, it is possible to offer the table of masses of elementary particles which one they gain, moving on orbit in a structure of more composite particle.

Table 7

Particle	Mass on orbit, MeV	Remark
Electronic neutrino	0.255 for MQN	-
Electron (positron)	70.03 for MQN	-
Muonic neutrino	35.015 for MQN	-
Pion	210.09 for MQN 205.00 for π^0 209.60 for $\pi^{\pm}$	Enters in "strange" particles
Kaon	560.24 for MQN 567.70 for K^0 563.68 for $K^{\pm}$	Enters in "charmed" particles
Charmed a meson D	1925.8 for MQN 1930.9 for D^0 1935.5 for $D^{\pm}$	Enters in "beautiful" particles

Using this table it is possible to update a constitution of "stable" elementary particles.

While there are absent of information, that the baryons as whole can move on orbit in a structure of other particles thus in products of decay there will be two protons, therefore structure of elementary particles does not differ by large variety components. Total mass of a elementary particle is approximately peer to the sum of masses components of average column of the table, (without the registration of a difference of gravidynamic interplay a matter - matter (antimatter - antimatter) and matter - antimatter and electrostatic interplay). Besides in a structure of any particle not much separate are watched components (which one can consist from several).

The modern physics in a problem of the theory of elementary particles so has complicated a problem, that its "achievements" are perceived by the man having though a few of common sense, as solid delirium. Each particle literally cries to the explorer about its composition - look on decomposition reactions that were for me inside. But the orthodox obstinately negates the apparent facts. Differently it is necessary to review fundamentals of a modern physics (as a matter of fact transformed in religion). In this connection there is a necessity to add to already described additional particles, by taking advantage the data from Subatomic physics, Publishing House of the Moscow University, 1994. This additive the author makes for demonstrating scientific youth of an alternate path. Instead of pictures we shall result a structure of elementary particles (kind of components of these particles is figured earlier).

Light meson η. Its mass 548.8 MeV, MQN=8, computational mass on MQN 560.2 MeV, and under table 10.1.1 550.06 MeV. A structure $\pi^0\pi^0e^+e^-$. The very short life time is conditioned by presence of neutral pions in a structure of a meson both presence of an electron and positron jointly.

Charmed mesons.

$D^{\pm}$. Mass 1869.3 MeV, MQN= 26.5, computational mass on MQN 1855.8 MeV. A structure $\nu\nu_\mu e^+K^-K^0\pi^+\pi^-\pi^+$, $\nu\nu_\mu e^-K^+K^0\pi^+\pi^-\pi^-$, (1865.5 MeV under table 10.1.1)

D^0. Mass 1864.5 MeV, MQN= 26.5 computational weights on MQN 1855.8 MeV. A structure $\nu\nu_\mu e^+K^-K^0\pi^+\pi^-\pi^0$, $\nu\nu_\mu e^-K^+K^0\pi^+\pi^-\pi^0$, (1860.9 MeV under table 10.1.1). The charged pion is more high-gravity neutral, therefore $D^\pm$ is more high-gravity D^0 on 4.6 MeV (see about pions in a start of the chapter).

$D_S^\pm$. Mass 1968.8 MeV, MQN= 28, computational mass on MQN 1960.8 MeV. A structure $K^+K^-K^0\pi^0e^\pm\nu$ (mass under table 10.1.1 1970.3 MeV).

Λ_c^+. Mass 2110.3 MeV, MQN= 30, computational mass on MQN 2100.9 MeV. A structure $K^\pm K^0K^0\pi^0\pi^0$ (mass under table 10.1.1 2109,1 MeV).

B-mesons (beautiful).

$B^\pm$. Mass 5277.6 MeV, MQN=75, computational mass on MQN 5252.3 MeV. A structure $K^+K^-D^+D^-\pi^0e^\pm\nu$ (mass under table 10.1.1 5273.6 MeV).

B^0. Mass 5279.4 MeV, MQN= 75, computational mass on MQN 5252.3 MeV. A structure $K^+K^-D^+D^-\pi^+e^-\nu$, $K^+K^-D^+D^-\pi^-e^+\nu$ (mass under table 10.1.1 5278.2 MeV).

Charmed baryons. Here it is necessary to make the following remark. As in center of baryons there is a proton and consequently the baryons introduce a certain similarity of hydrogen-like atoms, formal MQN of a proton 938.27:70.03 = 13.4. Therefore formal counting of mass on MQN gives the overstated value of mass on 0.4·70.03 = 28 MeV. Mass of a proton we shall accept equal 938.27 MeV.

Λ_c^+. Mass 2285.2 MeV, MQN= 32. A structure $P^+K^+K^-\pi^0$ (mass under table 10.1.1 2278.7 MeV).

Σ_c^{++}. Mass 2453.0 MeV, MQN= 35, computational mass under table 10.1.1 2488.3 MeV. A structure $P^+K^+K^-\pi^0\pi^+$.

Σ_c^+. Mass 2453.2 MeV, MQN= 35, computational mass under table 10.1.1 2483.7 MeV. A structure $P^+K^+K^-\pi^0\pi^0$.

Σ_c^0. Mass 2452.7 MeV, MQN= 35, computational mass under table 10.1.1 2488.3 MeV. A structure $P^+K^+K^-\pi^0\pi^-$.

All these baryons contain in the structure a pion and components Λ_c^+, therefore in products of decay 100 % just of these particles are watched. Together with strongly overstated computational mass this fact indicates a constitution Σ_c-baryons as a central nucleus around of which one the pion in the second orbital layer is gyrated. In this case orbital moment of a pion will be not $\hbar$, and $\hbar/2$ and the calculating value of mass will correspond to experimental value.

Ξ_c^+. Mass 2466.8 MeV, MQN= 35, computational mass under table 10.1.1 2483.7 MeV. A structure $P^+K^0K^0\pi^0\pi^0$.

Ξ_c^0. Mass 2473.0 MeV, MQN= 35, computational mass under table 10.1.1 2488.3 MeV. A structure $P^+K^0K^0\pi^0\pi^-$.

Concerning resonances I shall remind, that is similar, how the electron in atom passes from one excited level on another and it is required it to it on approximately 10^{-8} seconds, the exited components of a resonance shatters a resonance for one revolution on orbit and they need on it 10^{-23} seconds, therefore resonances can not be considered as full particles.

Thus, the spectrum of masses of elementary particles confirms inviolability of a principle of conservation of moment of momentum in a microcosmos, a consequent which one is originating mass.

The precise expression for calculation of a particle mass is grounded on the formulation of a principle of conservation of moment of momentum (S) taking into account that the components of a elementary particle move with light speed:

$$m=S/Cr \qquad (9).$$

To receive value of mass in power units (MeV), it is necessary (9) to multiply on C^2:

$$m=SC/r \qquad (10).$$

Electronic mass on MQN ($S=\hbar/137.036$): 70.03/137.036 = 0.51103 MeV

The data on "Subatomic physics". Publishing house of the Moscow University, 1994:

$\hbar$ = 6.582122·10^{-22} MeV·sec

α = 1/137.0359895=0.00729735308

C = 2.997924·10^8 m·sec^{-1}

r_e = 2.81794092·10^{-15} m

Tabulated value m_e= 0.5109991 MeV

Electronic mass on (10): 0.510998968 MeV

Radius of a neutron (my data on a magnetic moment) r_n= 0.986·10^{-15} m

Electronic mass on orbit 0.986·10^{-15} m on (10): 1.46041 MeV. On experimental data the neutron is more high-gravity than a proton on 1.29332 MeV. Radius of a neutron was counted on a magnetic moment of a neutron in the supposition dotty a neutrino which is forms an electron. As a matter of fact neutrino have the final sizes therefore driving on a circumference to a charged bead little bit greater radius for creation of the same magnetic field, as to a charged point. Therefore substantial radius of an electron, inside which one are a proton more counted, that results to overstate on 0.16709 MeV to value of electronic mass. Thus, on an example of calculation of masses of a neutron and electron is affirmed not only the technique of calculation of a spectrum of masses of particles, but also constitution of a neutron and error of official physics concerning an own angular momentum of an electron.

Here it is necessary to tell some words about increase of a life time of fast dissolving particles with increase of their running speed. Usually it is explained to that for them the flow of time changes. Further we shall see, that the time is absolute (more correctly, is container of events, not having any physical characteristics, as is not physical object). With ascending of speed, radius of a screw line of motion of free particles decreases that indicates increase of a gravidynamic field and strengthening of connections of a separate components particle. Some particles in such a way can be made stable, if they permanently will move with a high speed or will be "fixed", but in powerful external a gravidynamic field, i.e. deep potential well (neutrons in a nucleus). Apparently, that the change of time current can not a unstable particle make stable, and can only delay a decay time.

The strengthening of connections in gravidynamic systems visually is visible from a constitution of particles, which one contain a pion Σ_c a life time which one in a free condition makes 8.4·10^{-17} sec (since an electron and a positron because of an electrostatic attraction destabilize each other on orbit), and in a structure of these particles (at motion of a pion π^0 almost with light speed) it any more less than 2.9·10^{-10} sec (Ξ^0-baryon). Thus, usage of a gravidynamic field is a powerful lever control by processes of decay of particles of any kind. Accelerating ions of radioactive atoms or neutral particles, it will be possible in some cases completely to prevent decay. As it is better for making, it will be clear from further. At all events, it is possible confidently to guess existence in space of far transuranium elements, specially on purlieu by the Universe, where the objects move with by circumlight speeds. Typical gravidynamic the objects can be watched and in an adjacent space, for example, short-period binary stars, pulsars.

Comparing a constitution of a neutron (fig.16) with a constitution of one of versions π^- pion (фиг.11), we can assert, that the connection π^- with a proton will give a certain similarity of a neutron or neutron in the pure state, and neutron represents a variety of Λ^0 hyperon (fig.17) or Σ^0 hyperon. Thus, in due course, we can study nuclei of atoms inclusive instead of neutrons Λ^0 or Σ^0 hyperons. For the greater clearness of this problem, it is necessary to allow, that at connection of nucleons in a nucleus is allots on the average 7 MeV of energy on one nucleon. It is quite enough of it not only for formation of pairs a neutrino - antineutrino (see photon in the chapter about fundamental particles), but also pairs an electron - positron (π^0 mesons). As π^+ and π^- the mesons can exist in versions $\pi^+(e^+,\nu_e)$ and $\pi^-(e^-,\bar{\nu}_e)$, in a nucleus the formation of any known hyperons is possible. Nay, the simultaneous emitting by some nuclei β^+ and β^- radiation speaks about a reality of existence π-mesons in a nucleus. "The baryons with strangeness, nonzero, are called as hyperons. The easiest hyperons (Λ, Σ, Ξ, Ω) are long-lived particles and can go into a structure of atomic nuclei, forming so-called hypernuclei". "Subatomic physics", Publishing House of the Moscow university, 1994, page 82. Thus, it is possible to speak not only about an electronic - protonic constitution of a nucleus, but also about its positronic-neutronic constitution. It provides a comparative light transmutation of protons both neutrons in a nucleus and formation of the steadiest versions of nuclei with minimum potential energy of a nucleus (see theory of a nucleus).

Когда говорят, что существование позитрона вытекает из уравнения Дирака – это неверно, т.к. представление о позитроне является результатом формального извлечения корня из релятивистского соотношения между энергией и импульсом

свободной частицы: When speak, that the existence of a positron outflows from an equation of the Dirac is insecurely, since the notion about a positron grows out of a formal extraction of the root from a relativistic ratio between energy and impulse of a free particle:

$$E^2 = c^2 p^2 + m_0^2 c^4 \quad (11),$$

whence $E = \pm c\sqrt{p^2 + m_0^2 c^2}$ (Physics of a microcosmos, "Soviet encyclopedia", M., 1980, стр 45-46). The speculations around of particles and antiparticles are connected just with formal existence of two values of the root with opposite signs. In classic physics the negative value of energy of a free particle is not sense, therefore it do not take into consideration, and in a microcosmos orthodox physics esteems also negative value of energy on that, ostensibly, basis, that the energy in a microcosmos varies by portions. Apparently, that two values of energy with opposite signs do not depend on that, discontinuous or continuously subduplicate varies, as the kinetic energy of a free microparticle can vary continuously. New physics gives very simple explanation to existence of antiparticles for particles of any kind: all particles consist of a neutrino and antineutrino, therefore symmetrical change by places a neutrino and antineutrino in structure of a particle gives an antiparticle.

To understand, what physical sense is masked in the formula (11), shall insert into it expression for a impulse:

$$p = mV \quad (12),$$

where *V* - speed of a particle, *m* - relativistic mass, which one is determined by expression:

$$m = \frac{m_0}{\sqrt{1 - \left(\frac{V}{c}\right)^2}} \quad (13).$$

Just so receive (11).

Further it is required to us (13), squared:

$$m^2 = \frac{m_0^2}{1 - \left(\frac{V}{c}\right)^2} \quad (14).$$

Substituting (13) in (12) and obtained expression in (11), after some transformation we shall receive:

$$E^2 = \frac{m_0^2 c^4}{\left(1 - \frac{V}{c}\right)^2} \quad (15).$$

By substituting (14) in (15), we shall discover:

$$E^2 = m^2 c^4 \quad (16).$$

Formally extracting the root from (16), we shall receive:

$$E = \pm mc^2 \quad (17).$$

On common sense the negative value of energy in (17) should be discarded, but let's go on a path perverters of physical sense and we shall look, that from this will be received. Apparently, that the square of speed of light can not be negative value, therefore, after extraction of the root relativistic mass becomes negative. It is possible only in the event if in (14) running speeds of a particle always more speed of light (such monsters are called "as tachyons"). Then the square of a relativistic particle mass becomes negative, and mass - imaginary. Thus "the tachyons" doubly have not any sense.

In summary it is necessary to point out, that here views of a modern physics are adduced very much schematically and are marked only by some strokes. Is not affected at all quark models of elementary particles, which one becomes complicated directly on eyes, indirectly indicating on falsehood of initial hypotheses. To avoid difficulties with statistics, it was necessary to quarks to assign "color". In the further set of quarks has appeared indispensable to extend, to enter "beautiful" quarks etc. "Term "charm", as well as other quantum values, is entered completely arbitrary; it is possible to tell about this value only

that it "acts as charm", allowing to eliminate difficulties of the theory". (Underline mine once again to pay attention the reader to a methodology of a modern physics - V.K.). In this book to esteem all "achievements" of orthodox physics it is not sense to save a head of the reader. "The reason causing "reproduction" of kinds of quarks, is completely vague. Whether it is possible, that the quarks had some inner structure? At all events, their properties do not indicate at all it. The increase of number of quarks kinds represents one of greatest riddles standing today before physicists". (In this statement already is contained answer to a riddle - falsehood of a hypothesis of existence of quarks in that kind, as it is formulated - V.K.).

As a whole, the problem of elementary particles in a modern physics looks like this. "This problem is one of a major modern physics. The creation of the new theory is necessary, which one would explain an observed spectrum of masses of particles, interplay between them, life times and their other characteristics. The first theories (Heisenberg) have entailed the introducing of new physical ideas - non-linear equation, quantizing of space. It is possible, that its creation will need a radical breaking of modern notions" (N.I. Kariakin etc., Brief reference book on physics, "Higher School", M., 1962, page 498). In a modern physics of elementary particles sharply there is a problem, so-called, divergence - indefinitely large values of physical quantities. For example, for a dot electron the indefinitely large value for energy of a Coulomb field is received. To avoid divergences, is invented indeed cheat a method - quantizing of space - time. The sense it that is entered concept of minimum length *l* and, accordingly, minimum period *l/c*. It is made not under the requirements of common sense or any experimental data, and "to eliminate" divergences. Thus, space and time it appear "quantified".

Dissipation of particles

Let's look, as from the point of view of new physics seems the effective section of dissipation of a dot particle on a solid bead of radius *R*, with which one the particle does not interact. Apparently, that for a particle with large energy (small radius *r* of a screw trajectory): $\sigma=\pi(R+r)^2$. Substituting in this formula value $r=\lambda/2\pi$, where λ - wavelength de Broglie of a particle, after some transformations we shall discover:

$$\sigma = \frac{(2\pi R + \lambda)^2}{4\pi} \qquad (18).$$

This formula practically will be exact up to values $\lambda \leq 2\pi R$. At further increase of a wavelength of a particle in the target fall only the particles from a "diffraction" ring around of the target, as shown in a figure 23. Apparently, that the area of a "diffraction" ring $S=4\pi Rr$ or, substituting value *r*:

$$S=2R\lambda \qquad (19).$$

The effective section of dissipation will be in this case

$$\sigma=Sw_1w_2 \qquad (20),$$

where w_1 - hit probability in the target with transversal and w_2 - from a longitudinal

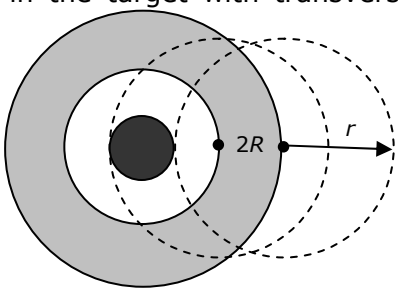


Fig. 23

direction of a screw trajectory of a particle. These probabilities practically are peer among themselves:

$$w=2\pi R/\lambda \qquad (21),$$

since at $\lambda=2\pi R$ a hit probability in the target of any photon, the axis of a screw trajectory which one lies in limits of a "diffraction" ring, is peer 1. By substituting (21) and (19) in (20) after some transformations we shall discover:

$$\sigma=8\pi^2R^3/\lambda \qquad (22).$$

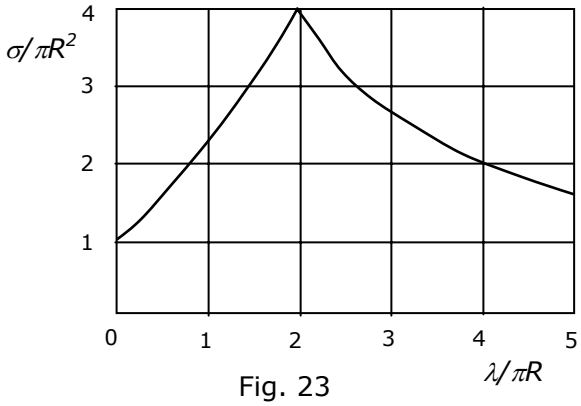


Fig. 23

This formula is applicable at $\lambda \geq 2\pi R$. At an indefinitely large wavelength de Broglie the particle of the target more any "sees". The effective section of dissipation depending on a wavelength under the formulas (18) and (22) is shown on the graph 23 in dimensionless coordinates $\lambda/\pi R$ and $\sigma/\pi R^2$. The maximum section makes $4\pi R^2$ and coincides conclusions of a quantum mechanics. At $\lambda=0$ sections of dissipation coincide with classic and makes πR^2.

References:

1. http://www.new-physics.narod.ru