NUCLEAR PHYSICS

Adamenko A. A.

THE IMPROVED CONCEPTION OF NUCLEAR PHYSICS
(SURVEY)

International Socionics Institute, Physical Department,
Ukraine, e-mail: socion@ibc. com. ua

The integrated science of nature, which is formatted in present time, proves the improved approach to the natural phenomena. Consideration, taking into account the existence of the planet nonelectromagnetic radiation and the nuclear magnetic-like field, can be produced now for any branch of science. In particular the nuclear-physical phenomena are considered in connection with the mentioned substances and thus the new technologies can be proposed for the nuclear energetics.

Key words: nuclear physics, nuclear energetics, planet radiation, cold nuclear reaction.

1. Introduction

In the previous works we have considered the experimental observations, which prove the existence of the planet nonelectromagnetic radiation, generated from the Earth volume [1–3]. The experimental data analysis provided us to put forward the improved structure of the fundamental interactions. Such a general approach occurred to be rather fruitful and thus we are able to get rid of the erroneous models (torsion, lepton) and to discover the nuclear-physical essence, exactly to say the hadron one, of the planet radiation, which produces the following natural function: the stimulation of different processes on the Earth surface. It should be noted that the solar hadron radiation produces the additional stimulating action. Not only the radiation but the magnetic-like planet field also exists and acts on the different natural processes. The improved consideration of these processes, taking into account the mentioned planet factors, is the contents of the integrated science of nature. We note that the improvement of the fundamental interactions structure provides us to explain the set of the so-called "nontraditional" phenomena without the nonsense notion "physical vacuum", used by some authors. The vacuum is mere an empty space and it cannot be physical of chemical. Some field can spread through the vacuum but only the matter is the source of this field. Besides the mentioned nonsense some authors have introduced the useless fractal approach, which is nothing but a primitive garble. Our approach is just the following: it is known that the atom nucleus possesses the 99,9% of the atom mass and the Universe is the nuclear-physical object by 99,9%. Thus the nuclear physics has to be considered more correctly on the base of the modern achievements.

It is known that the radioactive decay was discovered in 1896 and on that time this phenomenon was treated as a spontaneous one. The doubtful notion about the nuclear decay spontaneous essence was conserved till our time what is the significant paradox in the science history. The scientific community does not pay any attention to such a situation: the "spontaneous decay" notion keeps the radioactivity phenomena out of the natural causality principle.

Besides, the science history has another paradox, connected with the nonelectromagnetic planet radiation, which was known by people from the ancient time and remained beyond the academic science attention until the nineties of the XX century, when it was studied by different device methods. In particular, Cramer put forward a supposition that the planet radiation serves as the evolution field in respect of the alive nature development [4]. It was also shown that the Sun generates the unknown nonelectromagnetic radiation, similar to the planet one. The modern experimental observations are generalized on the base of the known geophysical notions [3].

It is known from geophysics that the high temperature core is situated in the Earth centre and has the following parameters: the radius near 1000 km and the temperature about 6000^0 C, what refers to the Sun surface temperature. It is rather obvious that namely this core is the source of the nonelectromag-

netic radiation, which penetrates through the Earth volume with attenuation and gets out from the planet surface. The various experimental data generalization provided us to make such a conclusion: the nonelectromagnetic planet radiation produces the stimulation of the different natural processes, including the radioactivity [1, 2].

The additional stimulation action is produced by the solar nonelectromagnetic radiation, which is incident on the planet surface without attenuation together with the solar light. During the night it penetrates along the planet chord with attenuation whereas the planet radiation intensity does not depends on the Earth rotation. Thus the total nonelectromagnetic radiation intensity on the Earth surface slightly depends on the planet rotation. The Moon also makes its addition to the total flow by the nonelectromagnetic radiation reflection, this time not only solar but the planet as well. Besides, the cosmic nonelectromagnetic background must exist and the relation among the all mentioned flows intensity is the problem of the day. By the way, it was proved that the biological objects also generate the nonelectromagnetic radiation [3].

The nonelectromagnetic phenomena were explained by the simple theory: these phenomena merely refer to the known hadron interaction [1, 2]. The hadron radiation and hadron magnetism exist in nature as well as the similar electromagnetic notions. The nonelectromagnetic radiation is mere the hadron one and the mentioned theory explains the radioactive decay as the nucleus destruction under the resonant absorption of hadron photon. Thus we have obtained the method for the decay process operation by the regulation of the planet radiation flow, which is mere the flow of hadron photons.

We are not able to switch on the planet radiation or to turn it off but there is a possibility to change its intensity and spectral composition by the use of the concentrators (pyramid, etc.) which produce the concentrated and scattered nonelectromagnetic flows. The usage of concentrators provides the technological perspectives for the different branchs, including the nuclear engineering and the alternative energetics. Taking into account the importance of this scientific direction we suppose that it is rather reasonable to present the survey of the works, which show the modern state of the nuclear physics. By the way, the hadron magnetism notion is also included in this survey.

2. The theory of the hadron radiation generation

2.1. The hadron oscillator model

The hadron generation process was considered on the base of the polymer model of atom nucleus, proposed by the two American scientists [5] and then used by the author [1, 2]. This model points out the similarity between the covalent and hadron bonds. The atoms in the polymer molecule are connected by the short-range covalent bond as well as the nucleons are connected by the similar hadron bond. Besides, the saturation is inherent for the polymer molecule and for the atom nucleus as well. For example the carbon atom attaches only four hydrogen atoms and thus the molecule CH_4 is formed but the theoretical molecule CH_5 cannot be created. The nuclides are formed in a similar way: a given proton quantity can attach a certain quantity of neutrons.

The discussed properties do not prevent the bonded atoms to produce the small vibrations near the equilibrium point. Due to these vibrations the molecule serves as a source of radiation, the infrared by its name and the electromagnetic by its essence according to the essence of the covalent bond. Thus it is rather reasonable to assume that the bonded nucleons also produce small vibrations, which yield radiation due to the physical essence of the bond. Thus we have considered the nucleus as the hadron oscillator and used for its frequency calculation the known Yukawa potential:

$$U(r) = -U_0 \exp(-br)/r \tag{1}$$

where U is the potential; r is the distance from the nucleus centre; U_0, b are the field and space constant correspondingly. In the region $r > r_0$ the potential sharply reduces and a direct action of hadron field on the great distance from the nucleus is negligible. But nevertheless the hadron interaction can provide the remote influence due to the above-mentioned oscillations. The oscillation frequency щ is described by the usual expression $щ = (g/m)^{1/2}$, where m is the nucleon mass and g is the rigidity coefficient, which can be obtained from the known expression $F = gx$, where F is the reseting force, $x = r - r_o$ is the distance near the equilibrium point. The connection between the force and potential is

given by the known expression $F = -dU(r)/dr$. Using the discussed procedure we obtain the resulting formula for the hadron oscillation frequency [1]:

$$щ = [U_0(a^2 + 2a + 2)\exp(-a)/mr_0^3]^{1/2}, \tag{2}$$

where $a = br_0$.

Substituting in (2) the usual values of the quantities ($U_0/r_0 = 100MeV$, $m = 1,7 \cdot 10^{-24}g$, $r_0 = 10^{-13}cm$, $a = 1$) we obtain $щ = 10^{23} radian/sec$, which shows the order of the frequency magnitude.

According to the experimental observation, carried out by Lavrentiev, the hadron radiation speed exceeds the light speed by 10 times or more [6]. If we take the calculated frequency value and assume the 10 times exceeding of hadron radiation speed, it occurred that the mentioned radiation wavelength is 10^{-11}cm. Using the known Planck constant value we can calculate that the hadron quantum energy is 65,8 Mev. But it seems that hadron interaction has its own value of the Planck constant which is different compared with the known electromagnetic value.

One should note that there is an essential difference between the hadron radiation and the known kinds of nuclear radiation (alpha, beta, gamma), which arise due to the structural changes in the nucleus. At the same time the hadron radiation is generated under the nondestructive vibration of nucleons within the nucleus.

On the base of the discussed model one should come to the conclusion that any body is a source of the disordered hadron radiation. The known experimental data explanation needs the additional assumption: in some bodies the hadron oscillators synchronization takes place and it yields the powerful hadron radiation flows generated by the great cosmic bodies and biological objects as well [1].

2.2. The models for the hadron oscillators synchronization

2.2.1. Cooperative model

According to the vibration theory the oscillator energy E_1 depends on the amplitude A_0: $E_1 = A_0^2/2$. The two oscillators total energy E_2 depends on their phase shift $и$ [7]:

$$E_2(и) = 4E_1\cos^2\frac{и}{2} \tag{3}$$

Under the $E_2(и)$ phase averaging we obtain the trivial result $E_2 = 2E_1$, which refers to the absence of synchronization. If $и = p$ we obtain $E_2 = 0$, which corresponds to the absence of radiation. If $и = 0$ (oscillators synchronization) the total energy exceeds by 2 times the total energy of the two independent oscillators: $E_2(0) = 4E_1$. The vibration theory proves that this result does not contradict to the energy conservation law because the synchronized oscillators consume more energy from the source compared with the independent oscillators [7].

The oscillators synchronization problem was considered by the author for the ensemble, which includes an arbitrary number of oscillators. It was obtained the expression for the total energy of N synchronized oscillators [1]:

$$E_N = N^2 E_1 \tag{4}$$

In particular, when $N=2$ the expression (4) gives the above mentioned value for the two synchronized oscillators. In general case the total energy of the N synchronized oscillators exceeds by N times the total energy of the N independent oscillators. It was mentioned above that the synchronizated oscillators consume more energy from the source compared with the independent oscillators.

We can explain the origination of the powerful hadron radiation flow in the Earth central mass due to the high temperature. This flow penetrates through the planet volume with attenuation while the residual intensity is enough for the different processes stimulation on the Earth surface.

2.2.2. Thermodynamics model

The ensemble of N oscillators was considered as the system of N/2 pairs, while the $N_1/2$ pairs are synchronized and correspondingly the $(N-N_1)/2$ pairs are independent oscillators [1]. The energy of the synchronized and independent oscillators pair is $4E_1$, and $2E_1$, correspondingly. This ensemble was

analyzed by the usual thermodynamics method, which yields the following expression:

$$N_1 = N \frac{\exp(A - D)}{1 + \exp(A - D)},\tag{5}$$

where $A = P/kT$ (P is chemical potential, k is Boltzmann constant, T is temperature), $D = 2E_1/kT$. Expression (5) is presented on fig.1. One can see that under the low P values the synchronization occurs only for the high temperatures (Earth centre, Sun). Under the high P values (biological objects) the synchronization is possible for low temperatures; in particular, when P=2E$_1$ we have $N_1 = 0,5N$ independently of the temperature. If P is rather high (active biomass) N_1 takes the essential values in the region $N_1 > 0,5N$ which is unattainable for the high temperature sources. Thus the thermodynamics approach provides us the united model for the explanation of the hadron generation process in the great cosmic bodies (high temperature) and biological objects (chemical potential).
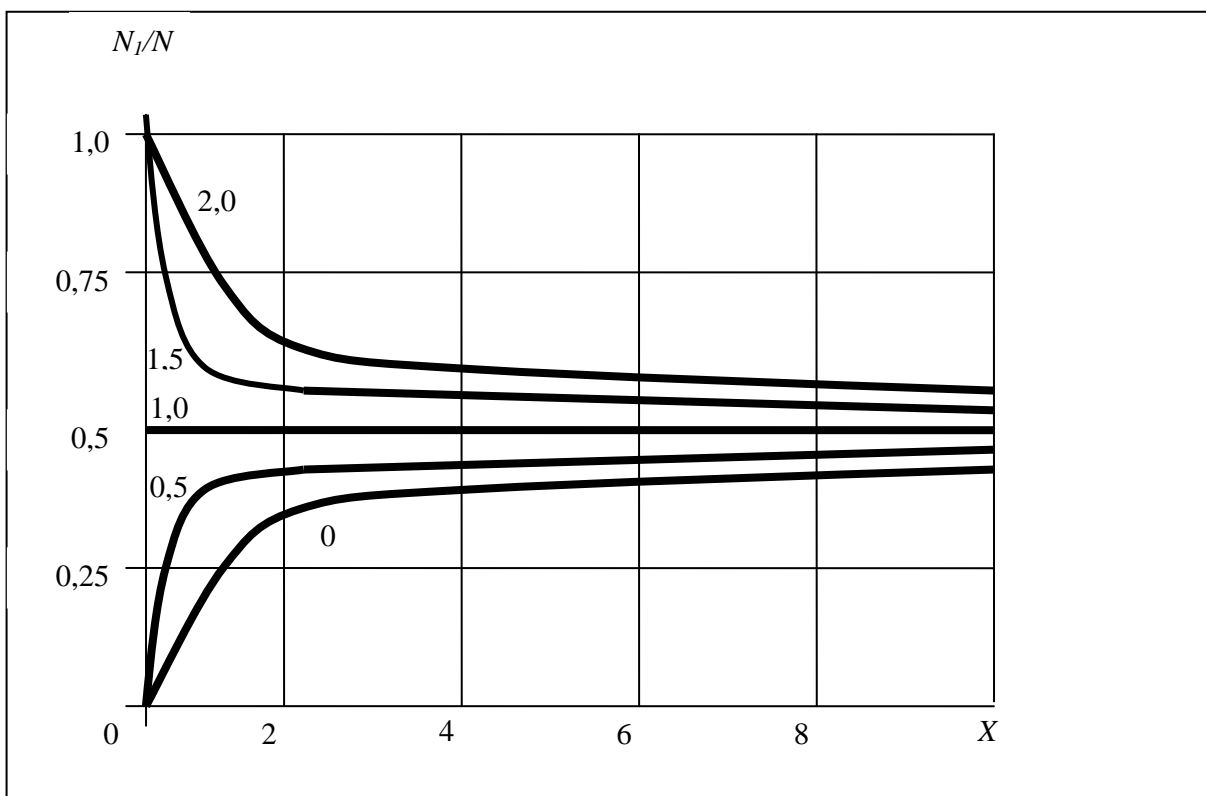
Fig.1. The dependence of the relative quantity of the synchronized oscillators N$_1$/N on the temperature, expressed by the units X=kT/2E$_1$ under the different values of the relation P/2E$_1$, marked near the curves.

3. The consideration of the radioactive decay on the base of the causality principle

At the present time there are a lot of experimental observations which prove us to get rid of the "spontaneous decay" notion and consider the radioactive decay as the nucleus destruction under the natural radiation action [8, 9]. We note that the nucleus destruction, perceived as "nuclear photoeffect", is produced in the laboratory conditions under the action of the high energetic electromagnetic radiation. The traditional nuclear physics direction, based on the particles acceleration, has come to its deadlock and only a new conception can provide us to find a solution of the nuclear power actual problems [1, 2].

The experimental investigations, contradicting to the known "spontaneous" notion, were generalized in the author work, presented at the Eighth International Conference on Emerging Nuclear Energy Systems [1]. It was made a conclusion: the radioactive decay is not a spontaneous but a stimulated process, which is produced under the action of hadron radiation, generated by the great cosmic

bodies (Earth, Sun) at the expense of their thermal energy. The hadron radiation is produced in the whole Sun volume due its high temperature while in the Earth only the inner core has a suitable temperature for such generation.

It was shown that such sources as the flame and the empiric's hand also produce the distant action on the radioactivity process [10, 11]. These experimental observations provide an additional evidence for the author theory. Firstly, the flame is a high temperature substance, which generates the hadron radiation like the Sun or the planet core. Secondly, due to the author theory, the biogeneous nonelectromagnetic radiation, commonly known as "biofield", is nothing but the hadron radiation [3].

The radioactive decay was considered in the author works as a nucleus destruction produced under the hadron radiation action. The two models were used under this consideration: the flutter destruction model and the resonant absorption one. The first model yields the relation between the decay half-period ϕ and the hadron oscillator period ϕ_1 [1]:

$$\phi = 0,69 \frac{\phi_1}{W} , \qquad (6)$$

where W is the hadron flutter process probability.

The resonant absorption model is based on the known encounter theory and this approach yields the Adamenko formula [2]:

$$\phi = \frac{0,69}{yc} , \qquad (7)$$

where y is the section of the hadron quantum resonant absorption by certain nucleus, c is the summarized hadron photons flow (Earth, Sun, Moon-reflection, cosmic background).

The Adamenko formula shows that the time factor is introduced into the nucleus structure by y. Using this relation we can explain the known experimental classification of nuclides, as it is shown in table 1 [2, 3].

Table 1. The connection between experimental nuclide feature and its y

| nuclide feature	Stable	radioactive	
		long life	short life
y value	near zero	small	high

If the y value is near zero the ϕ tends to infinity and this nuclide is stable. Under the y value rising the ϕ decreases and these nuclides are destructed due to the hadron photon resonant absorption. As a matter of fact the mentioned destruction is the reason for the radioactivity.

The more detailed consideration of radioactivity has to be produced in comparison with the nucleus destruction under the gamma photon action, known as "nuclear photoeffect" and written by such a way (for example, referring to deuterium):

$$^2D_1 + \gamma \rightarrow n + p \qquad (8)$$

where γ is gamma photon, n is neutron, p is proton. We note that the acting photon is shown in the left part of the formula.

The radioactive decay is usually presented by the similar formula, but till now the acting photon was not shown in the left part. We suppose that it is time to introduce the cause action into the natural kind of nuclear destruction, which was erroneously treated as "spontaneous" till now. For example, the alpha decay of bismuth-209 is produced by such a way [2]:

$$^{209}Bi_{83} + f \rightarrow {}^{205}Tl_{81} + {}^4He_2 \qquad (9)$$
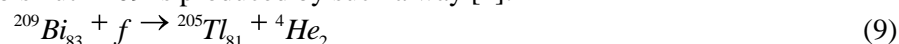
where f is the hadron photon.

The different kinds of radioactivity are connected with resonant destruction of nucleons. In particular the free neutron arises due to the splitting of proton, bonded by nuclear forces[2]:

$$p + f \rightarrow n + e^+ + f_1 \qquad (10)$$

where e^+ is positron, f_1 is secondary hadron photon known as "neutrino". The high penetration ability of neutrino is in agreement with similar property of hadron radiation which arises in the Earth cen-

ter and penetrates to its surface.

It should emphasize that only bonded proton is able to reveal such transformation whereas the single proton is a stable isotope of hydrogen. We suppose that the positron decay (for example, carbon) is produced due to the bonded proton splitting in resonant nuclide [2]:

$$^{10}C_6 + f \rightarrow {}^{10}B_5 + e^+ + f_1 \qquad (11)$$

It is known that proton and neutron masses are $1836m$ and $1838,5m$, corresponddingly, where m is the electron mass. So long as the proton includes neutron and position, its mass defect is determined by such an expression [2]:

$$(1838,5m + m) - 1836m = 3,5m \qquad (12)$$

The augent in this equation left part is the sum of masses of the two free particles: neutron and positron. When these particles are connected, they are converted into proton which mass is subtracted in the left part. The result of this subtraction is nothing but the proton mass defect; in terms of energy this mass defect is equivalent to 1.8 MeV. Under the radionuclide carbon-10 decay the positron receives 2.2 MeV kinetic energy, thus the initial hadron photon must have energy at least 4 MeV. Using this energetic value together with above mentioned hadron frequency value we are able to estimate the low limit of hadron Planck constant: 4×10^{-23} MeV$\cdot$ sec.

It is time to get rid of such doubtful notion as the "K-capture". Really the so-called "K-capture" is mere the annihilation of positron, emitted from the nucleus, with the K-electron. The nucleus charge is reduced after the positron emition due to the formula (11) and at the same time the K-electron disappears due to the positron-electron annihilation; but till now this phenomenon is erroneously perceived as "K-capture".

Positron radioactivity can be observed if the positron, arosen due to the formula (10), has an energy sufficient for penetration through the atom shell. If positron has no sufficient energy it annihilates with the K-electron of atom shell; this phenomenon yields an electron vacancy emergence and the K-line X-ray emission. Besides the K-line the L and M lines are also observed in the X-ray spectra which is interpreted till now as "the capture of shell electrons by nucleus". According to our opinion such "captures" are very doubtful. We suppose that the existence of the L and M lines in the X-ray spectra is caused by the emitted positron penetration to these levels and its annihilation with L and M electrons. One should take into account that the hydrogen atom is a system which can be considered in terms of "electron capture by nucleus" but there is no nuclear charge reducing in this system in spite of the "K-capture" idea. The few radionuclides, which reveal the so-called "K-capture" (for example, ferrum-55), do not have an enhanced values of electron density near nucleus compared with any nuclide and it is an additional argument to consider the "K-capture" idea as doubtful. At the same time the conception about positron annihilation with shell electrons is based on many experimental studies of annihilation effect.

Thus there is no electron capture in the "K-capture", there is mere the positron emission from nucleus due to formula (11) and its annihilation with electron in atom shell. We suppose that information about hadron origination of emitted positron is conserved during annihilation which yields not the two gamma but the two hadron photons, which where not registered till now under the observation of "K-capture".

We suppose that the electron-positron pairs production is a principle process in electron radioactivity which is called as "beta-activity" and erroneously interpreted on the base of such a model:

$$n \rightarrow p + e^- + \bar{\text{н}} \qquad (13)$$

where e^- is electron, $\bar{v}$ is antineutrino.

This model contradicts to the general notion about the existence of causality in natural processes. There is no acting factor in the left side of this expression and it is not clear why free neutron can exist during such large time period as 12 minutes. We suppose that free and weakly bonded neutron transformations into proton and electron are realized due to electron-positron pair production under the hadron photon absorption [2]:

$$n + f \rightarrow n + e^+ + e^- \rightarrow p + e^- + f_2 \qquad (14)$$

where f_2 is the secondary hadron photon, known as "antineutrino", which differs by its frequency from the secondary photon f_1 mentioned in (10). It is shown in (14) that absorbed hadron photon produces an electron-positron pair. The arosen positron forms proton by synthesis with neutron while the

residual electron is emitted as a "beta particle". The proton synthesis produces a secondary hadron photon which has the high penetration ability. We suppose that the two cases of the so-called "beta-activity", positron and electron emissions, are based on the two contrary processes: splitting and synthesis of proton according to (10) and (14), correspondingly.

The proposed model eliminates such a paradox of known theory: till now the nucleus is treated as it emits electron which is absent in nuclear structure! Any nuclear physics handbook includes the statement about "electron appearance in beta decay moment". Really electron appears and it is time to define more precisely that namely the electron-positron pair production is the reason for this appearance. It is interesting to note that weakly bonded neutron in nucleus can have more high value of hadron absorption section compared with free neutron what yields the existence of the short-life beta radionuclides (helium-6, etc).

The known Fermi "beta-decay" theory is valid after the electron arising according to (14). The known theory introduces the coefficient of proportionality, which was named as "weak constant" and erroneously treated as a fundamental constant. This topic will be considered in the part 4 of this article.

4. On the existence of the hadron magnetism

The remote biological communication is produced by the biogeneous nonelectromagnetic radiation, which occurred to have the nuclear-physical essence, exactly to say, the hadron one. The same situation has place in respect of the biogeneous magnetic-like phenomena (telekinesis, levitation), which were shown by the device experiments, considered in the survey article [3]. In particular, we have to point out that the dead animal weight exceeds the weight of the alive one. We can't help but come to the conclusion about the existence of the hadron magnetism, which is inherent to the hadron particles proton and neutron. We suppose that the Earth has the hadron magnetic field as well as any biological object whereas the correspondent biogeneous field has the oppositive direction compared with the planet one. The two hadron magnetic fields repulsion produces the partial compensation of the alive body gravitation force. The death causes the elimination of the biogeneous hadron magnetic field and thus the dead body weight is equal to the pure gravitation force. The levitating wizard is able to increase his own hadron magnetic field and thus he fulfils the whole compensation of his body weight [12].

The levitation phenomenon was also observed for the solid bodies and sometimes erroneously perceived as the reducing of mass, whereas this effect is merely the partial compensation of weight [13, 14]. Thus we have to make a conclusion that the levitation is not a biological but the general phenomenon of matter, connected with the atom nucleus, exactly to say, with the hadron magnetism.

The notion of the hadron magnetism existence provided us to explain the biogeneous transmutation of chemical elevents, discovered by Komaki [15]. The precise chemical analysis of the active cells cultures (Aspergillus niger IFO4066, etc) provided the author to make the conclusion about the cold nuclear reactions producing in the alive matter, for example: $^{28}Si + ^{12}C = ^{40}Ca$, $^{56}Fe = ^{55}M_n + 'H$. We note that the fusion and fission cold nuclear reactions can be produced in the active biomass volume. The mentioned reaction cannot be explained within the electromagnetic fundamental interaction due to the impossibility of nucleus coulomb repulsions overcoming. The cold nuclear reaction becomes rather possible if we take into account the hadron magnetic field energy, which does its contribution into the two nuclei total energy. The two nuclei synthesis is produced due to the hadron magnetic energy reducing by this cold reaction and thus the nuclei amalgamation is rather possible. The cold nuclear fission is produced under the action of the "biological" field, which is mere the hadron one.

The hand-made devices memory is based on the usual magnetism, which exists within the electromagnetic fundamental interaction. The biological objects memory also is based on magnetism, this time the hadron one. Besides, such a known effect as the water memory also has the hadron magnetism essence.

The hadron magnetism as well as the hadron radiation were not perceived by the scientific community due to the essential shortcoming of the known fundamental interactions classifying and thus we proposed to improve it. According to the known approach there are the four fundamental interactions: electromagnetic, gravitational, hadron (strong), lepton (weak). This approach has the following shortcoming: the absence of the symmetry. Due to the mentioned reason the known classifying cannot include the observed nonelectromagnetic phenomena. The known amalgamation of the electromagnetic and weak interactions did not eliminate

the mentioned shortcoming and the nonelectromagnetic phenomena remained beyond the fundamental physics. Thus we suppose that this amalgamation is wrong despite it was marked by the Nobel Prize.

On the base of the modern experimental data analysis we proposed the improved fundamental interactions classifying: there are not four but only the two fundamental interactions, electromagnetic and gravimagnetic, while the three others interactions (gravitational, hadron (strong), lepton (weak)) are mere the partial cases of the fundamental gravimagnetic interaction [3]. The most essential physical phenomena have the two analogies in every fundamental interaction. For example, the long-range action is presented by the coulomb law in the electromagnetic interaction as well as by the gravitation law in the gravimagnetic one. The strong short-range force is presented by the covalent bond in the electromagnetic interaction and by the hadron bond in the gravimagnetic one. The electromagnetic interaction has its own weak force, which is the wan-der-Vaals force, while the lepton phenomenon is the partial case of the fundanmental gravimagnetic interaction.

5. Conclusion

The experimental investigations show that the planet radiation can be scattered and this phenomenon provides the perspective for the nuclear reactor remote operation as it is shown on fig.2. The scattered flow features depend on the scattering construction parameters, the variation of the parameters yields the correspondent variation of the scattered flow features. So far as the planet hadron radiation produces the radioactive decay stimulation (together with others hadron radiation flows) the variations of this radiation flow density provides the possibility for the nuclear fuel decay operation according to formula (7).
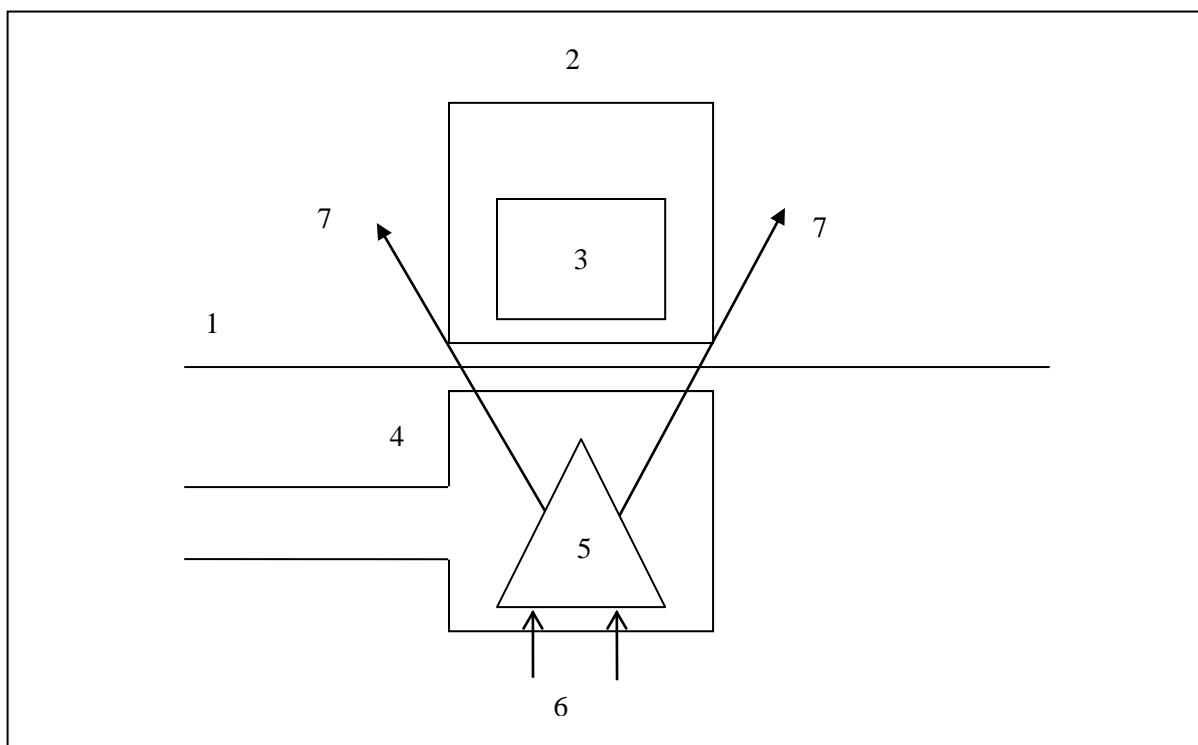
Fig.2. The proposed scheme of the nuclear reactor remote operation using the scattered planet radiation. 1 — ground level, 2 — reactor, 3 — nuclear fuel, 4 — underground cavity, 5 — planet radiation scattering construction, 6, 7 — initial and scattered planet radiation, correspondingly.

The waste decay can be operated as well and this time not the scattered but the concentrated planet radiation has to be used. The waste has to be placed in the concentrator and the decay acceleration can be produced under the action of the concentrated planet radiation. Thus the waste radioactivity can le reduced under the action of the concentrated planet radiation.

Another approach to the waste problem solution is based on the phenomenon of the biological

cold nuclear reactions. It was noted above that the active biomass can stimulate the proton removal from the ^{56}Fe nucleus. If the similar nuclear reaction is produced for the ^{137}Cs, we obtain the stable nuclide ^{136}Xe. The proton removal from the radionuclide ^{134}Cs (halflife period 2.3 years) causes the origin of the shortlife radionuclide ^{133}Xe (5,3 days). For the ^{90}Sr (28 years) the analogous reaction causes the origin of the shortlife radionuclide ^{89}Ru (15 minutes).

The nuclear-physical investigations provide us to find a new direction for the alternative energetics. It is rather obvious that the nuclear power station is nothing but the hadron-electric convertor while the radioactive decay is the most significant stage of this convertion. Thus it is time to put forward the following problem: the development of the planet battery, which will convert the hadron radiation energy into electric energy without the radioactive decay like the sun battery treats the light energy.

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Адаменко А. А.

Усовершенствованная концепция ядерной физики

Интегральное природоведение, формируемое в настоящее время, выдвигает усовершенствованный подход при рассмотрении естественных явлений, с учетом существования планетарного неэлектромагнитного излучения и ядерного магнитоподобного поля. В частности, ядерно-физические явления рассматриваются во взаимосвязи с указанными субстанциями, благодаря чему открывается возможность разработки новых ядерных технологий.

Ключевые слова: ядерная физика, ядерная энергетика, планетарное излучение, холодная ядерная реакция.