EFFECTS OF ROTATING MASSES

Rotation is a source of non-electromagnetic impact on nonequilibrium semiconductor charges and radioactive decay

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Based on semiconductor nuclear spectrometry, the results are shown
experimental research on the remote impact of rotating
objects on the decay rate of atomic nuclei and nonequilibrium charges
semiconductor detector .

Introduction

The fact that rotation can be a source of non-electromagnetic influence ,
assumed for a long time . Back in the twenties of the last century e . Cartan tied
the density of the angular momentum of rotation with torsion (torsion) of space - time in
the framework of the gravity model of the general theory of relativity [1]. Experimental
H work . II . Myshkin were essentially the first experimental data ,
confirming the existence of certain forces transmitting angular momentum [2]. In
in the second half of the twentieth century, experimental
studies , showing the generation of non-electromagnetic effects
the rotating flywheel of the gyroscope and its remote influence on the moment
pulse of a macroscopic object [3, 4, 5].

Rotation refers to the fundamental movement . To be more precise , you can
say , that in the world there is no straight-line movements . Any movement in
the gravitational field can be characterized by a certain turning radius .
Naturally , if this radius is relatively large , and the rotation angle is negligible
then the described arc (in the limit) will tend to a straight line . Only in this
case, we can speak of quasi-rectilinear and uniform motion .

In the case of rotation , the source of non-electromagnetic effects can also be
moment of forces , and centrifugal (inertial) forces . Currently there are
several theories linking these forces with such generated
non-electromagnetic fields as a torsion field [6, 28], cogravitational [7],
massodinamicheskoe [8] microlepton [9] chronal [3, 5] , and so on . d . In every case
on the basis of the theory, the possible manifestations of the properties of the listed

fields . These properties can be identified experimentally and compared with
theoretical conclusions .

In recent decades, a number of researchers have carried out experiments on
remote action of rotating objects , as in the angular momentum
test object , and on the readings of various devices [10-18]. Regardless
on , no matter how determined the generated field , in generalizing the results of these
The work revealed the main properties of the generated impact . We list
discovered properties of this phenomenon :

1. The generated field transmits the angular momentum to the test macro-object .
2. The test object in this field undergoes precession .

3. If the sizes and masses of the test and leading objects match , the rotating test object is a source of non-electromagnetic field acting in antiphase on the leading object and decelerating it rotation . Self-heating of both objects takes place here .
4. The degree of impact on test objects nonlinearly depends on the speed rotation of the leading object .
5. Dependence of the manifestation of the effects of the direction (clockwise , and counterclockwise clockwise) rotation . This fact may be associated with education right - and left-sided margin .
6. The field in the space of the axis of rotation is inhomogeneous . Impact degree depends on the location relative to the rotating object .
7. After turning off and stopping rotation , non-electromagnetic effect for a long time is in a quasi-stationary state (the phenomenon memory).
8. Non-electromagnetic field affects the fluctuation of nonequilibrium quantum systems (charges) sensors of radioactive radiation .
9. The generated rotating object field changes (mostly , reduces) decay rate and fluctuation (dispersion) of nuclei of radioactive isotopes .
10. The degree of influence of this field depends on the organization (entropy) internal structure of a rotating object . The more organized structure , the greater the effect on the trial quantum system .
11. Precession and uneven rotation increase the impact on the trial quantum system .
12. The absorber of the field is a material made of twisted lavsan and polyethylene threads . Moreover,–i7i7i7, the material from the right-sided thread in a larger degree absorbs the field when the object is rotated clockwise (view from top , material between the revolved object and the test object). And , conversely , when rotated counterclockwise to absorb the impact you must use a left-handed twist thread .

Thus , the listed properties of non-electromagnetic action generated by a rotating object allow you to associate this field not only with power component (transfer of angular momentum), but also with information influence (transfer of entropy and influence on it in a test object).

Consider the results of some experimental studies , obtained in

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as a result of the remote influence of rotating masses on nonequilibrium quantum semiconductor spectrometry systems .

Instruments and experimental techniques

At the end of the eighties of the last century , using a semiconductor gamma - spectrometry , in multielement neutron - activation analysis the author was the effect of decreasing the activity of the isotope source of gamma - quanta in the presence of a rotating fluid [19]. Subsequent experiments (already in our century) fully confirmed the effect of rotation on the decay of the nucleus .

The measuring equipment was semiconductor , Ge (Li) - detector (DGDK -63 a); preamplifier (PUG –2 K); amplifier (BUI -3 K) and analyzer (AMA –02 Φ 1). Semiconductor

detector , a gamma - radiation and rotating
the rotor shaft is located on the same vertical axis
(fig . 1). In various experiments,
electric motors, both asynchronous (type AIR) and
collector , power of 150-200 watts , enshrined
to the counter . The motor stand was attached to
massive steel table (~ 60 kg) and Dewar vessel
semiconductor detector (PPD) filled
liquid nitrogen (31 kg), located on a soft
platform , preventing transmission
slight vibration from the electric motor to
detector .
The effects were investigated not only on beta - active
nucleus , but also on alpha - radioactive isotopes . IN
semiconductor epitaxial was used as an alpha - particle sensor
GaAs - GEF detector , with gold contact . Detector size 4×2 mm ^{2} . IN
the measuring complex used a preamplifier PUG-01 ,
amplifier UIS –04 and ADC BPA –02 manufactured by NPTs " Aspect ".
Motor shaft without attachments , rotating at angular speeds from 2000 to 8000
about / min in increments of 1000 about / min , as the counter-clockwise , and clockwise (view
top), was above the radioactive isotope source . Distances from
of the radioactive source to the end of the shaft were set by the experimental conditions .
The total absorption peak area (peak), proportional to the amount of
recorded gamma - quantums (pulse FPD) of a given energy and the total integral .
The analyzed spectrum was processed by the " *Search* " program developed by
in Dubna . This program , by calculating the peak area , automatically
sets labels at the point of " inflection " of the Gaussian distribution , which allows you to observe
identical conditions in the process of calculating the next measurements . Width
the energy resolution of the peaks under study did not exceed 3 keV . In one hour

one
2
3
four
five

Fig . 1. Fundamental
scheme of the experiment , where 1-
Dewar vessel ; 2- PPD ; 3-
radioactive tc評sources ;
4- glass with liquid ; five-
electric motor .

of measurements, the drift of the center of gravity of the peak upward or downward is not
exceeded 0.5 keV .
The peak and integral were measured in two modes , 60-100 measurements during operation
engine and 60-100 measurements after stopping . " Live " measurement time
was 30-60 s , the spectrum processing time was 35 s . Peak area , depending on
measurement points , ranged from 4000 to 10000 pulses .
In the experiment, the total integral spectrum I was recorded , starting from

first channel analyzer scale , t . e . the lower limit of the discriminator was
zero (Fig . 2). The figure shows the spectrum of gamma - quantums isotope C about $_{60}$, where
appropriate
manifestation of noise peaks .

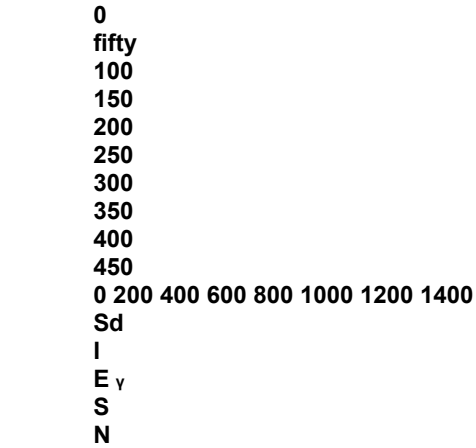

Fig . 2. Pulse - energy spectrum of gamma - quanta of the isotope Co $_{60}$, where S $_{d}$ - peak -
take .

The paper [20] a theoretical analysis of the situation and determined , that the inclusion of
integral spectrum (the entire energy scale of the analyzer) in the experiment ,
allows you to avoid the main unaccounted for effects of the electromagnetic field on
statistics . This is due to the fact , that the generation of electromagnetic pulses typically
manifests itself in the first channels of the scale and a significant increase in these peaks in
in turn, reduces the peak area of the useful signal .

To the input stage of the preamplifier , in addition to the useful signal from the PPD
receives internal noise signals , formed by the reverse current detector ,
input current of the gate of the field-effect transistor , leakage currents of resistances
connected in parallel with the detector . In addition to internal noise signals to the input
a preamplifier can flow signal , generated by the external
electromagnetic sources , in this case it is an electric motor and a system
rotation speed control . In turn , the load resistance of the input
circuit is inversely proportional to the cyclic frequency of the external alternating current

noise signal . All this leads to fluctuations in the load time constant and
an increase in the area of the integral spectrum .

In this case, the noise current is presented in a discrete form in the form of δ - pulses .
In fig . 2, at the beginning of the energy scale (25 keV), a noise peak is seen ,
generated by an external electromagnetic source and increasing the total
integral . And due to the fact that the " dead " time of the amplitude - digital
transducer t $_{m}$, this is the " dead " time of the *extending* type, then the peak area
useful signal will decrease . " Dead " time is processing time
spectrum , m . e . the time of transformation of an analog signal into a digital one and, accordingly ,
termination of registration of a useful signal . We define the integral as N = I - S, where S
- the desired signal peak area (for isotope Co $_{60}$ energy gamma - quantums 1173
keV and 1332 keV). The quantity N is basically the sum of the background pulses , Compton is
effect and noise signals . In this case, of interest is the difference
peak areas in the rotation mode S $_{rot}$ and the average value of the peak in the static mode
$\langle S_{st} \rangle$. The ratio ($S_{rot} - \langle S_{st} \rangle$) / σ_{st}
$_{s}$ defines the relative fluctuation of the area

peak , expressed in units of standard deviation σ_{st}
. But here it is necessary
take into account the effect of noise signals on the spectrum , so you can enter
relative value - q, the value of which reflects the fluctuation of the peak area
(M . E . The rate of decay of the nucleus) normalized by the electromagnetic noise
pulses , t . e .

$q = (S_{rot} - \langle S_{st} \rangle) \sigma_{st} / \{| N_{rot} - \langle N_{st} \rangle | \sigma_{st}\}$, where the module $| N_{rot} - \langle N_{st} \rangle | \geq \sigma_{st}$. (one)

If $| N_{rot} - \langle N_{st} \rangle | < \sigma_{st}$ then the modulus is equated to σ_{st}
. This condition is statistically
justified , ie . to . modulus value less than σ_{st} is within the error
measurements . To assess the proximity of the samples N_{rot} and N_{st}, one can apply the criterion
Fisher , respectively, to find out , what is the share of external noise pulses (if
they are present in the spectrum) and the degree of their influence on the statistics S_{rot} .
The proposed experimental scheme makes it possible to exclude the influence of trivial
reasons for the results of experiments , due to the emerging research opportunity
behavior of two samples - S and N, since fluctuations in the decay intensity
affect , first of all , the shape of the S distribution and, to a much lesser extent, N
(Compton - effect). And the intrinsic noises of the device and external electromagnetic
Interference will be shown in the integral N. Therefore , value of q ~ the S_{rot} - < the S_{st} > , reflects
change in the activity of a radioactive source and, accordingly , the degree of influence
of the non-electromagnetic component of the field generated by the rotation to the excited
atomic nucleus .
Statistical analysis of the experimental results was carried out with a 95% degree
reliability . When constructing histograms , the analyzed series was divided into
intervals with a step $h = (X_{max} - X_{min}) / (n)^{1/2}$, where n is the number of members of the series (
sample).

Analysis of the results of impact on radioactive decay

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Studying the dependence of the magnitude of the shift of the average value of the peak area on
spatial arrangement (along the axis of the motor shaft) of the system
" Source - detector ", a change in this value was noticed , up to a complete
coincidence of distributions when measured in rotation modes and without
rotation . We can say , that in certain points of space exposure effect
disappeared . There was a need for experimental confirmation of the effect
non-electromagnetic field specifically on the radioactive source , and not on the system
" Source - detector ".
The following experiment was carried out : in the no rotation mode, sequentially
the intensity of photons from two isotopes Cs^{137} was measured at distances from
detector surfaces 29 mm and 25 mm . Moreover , the distance was chosen as follows
way , so that the load on the detector from the two sources was the same (in
static mode). At the beginning, 60 measurements of the first source were carried out
(" live " measurement time $t_g = 50$ s), then the second source ($t_g = 50$ s). Research

repeated when the engine rotates counterclockwise (Fig . 3). Rotation
water in a steel glass was created uneven (decentralized)
disc rotating at a speed of 6000 on / min .

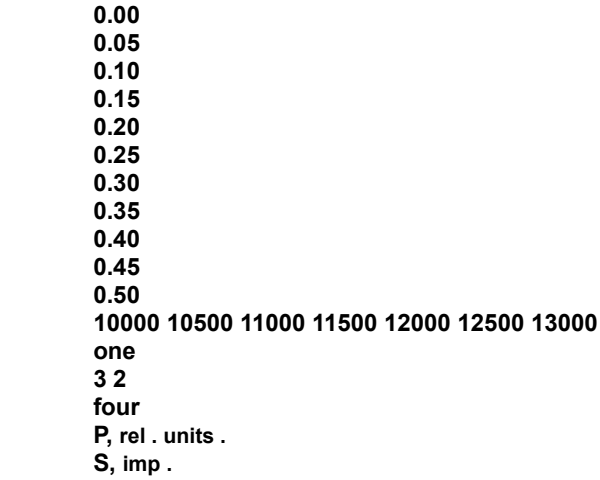

Fig . 3. Histograms of distribution of gamma radiation pulses from two Cs $_{137}$ sources
in various spatial positions , in static mode (1 and 2) and in mode
counterclockwise rotation (3 and 4).

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The following results were obtained , for the first source the average value of the area
peak in static measurement mode (1) - S_{1}^{st} = 12308 imp ., Standard deviation
σ = 268 imp ., in counterclockwise rotation mode (3) - S_{1}^{pr} = 11734 imp .,
σ = 297.4 imp .; for the second source (2) - S_{2}^{st} = 12314 imp ., Σ = 200.6 imp ., (4) -
S_{2}^{pr} = 10688 imp ., Σ = 254.8 imp . Fisher coefficients between distributions of two
isotope sources in different measurement modes : F_{1-2}^{st} = 0.01 and F_{1-2}^{pr} = 425.5 (q_{2} = –8.1).

The experimental results confirm the presence of an impact field associated with
rotation and the potential of this field , at each point in space , is different . All over
visibility , the field generated by rotation affects the quantum states of the internal
the structure of the excited nucleus . By repeating this experiment , the results
confirmed up to the preservation of the distribution forms .

In the case of uniform rotation of the rotor of the electric motor , without precession , and with
constant angular velocity in the absence of water in the glass, the degree of influence on
the decay of atomic nuclei decreased significantly . Distances from radioactive
source (Cs $_{137}$, standard type OSGI) to the end of the shaft were as follows ; 25 mm , 29
mm , 33 mm , 37 mm , 41 mm , 43 mm , 45 mm , 49 mm . At rotor speeds of 7000
Stock / min and 8000 on / min values in comparisons quantities q (for Cs $_{137}$) at different
rotor speed (7000 and 8000 on / min), are the following
laws , in - the first , the maximum value of $\langle q_{8000} \rangle$ = -0.46 acquire the
distance 41 mm (Fig . 4 (the number of measurements is given on the abscissa axis)), at the same time
$\langle Q_{7000} \rangle$ = –0.48 at a distance of 33 mm . In - the second , at distances of 45 and 49 mm in effect
there is almost no shift , but the distribution (histogram) of the peak area

takes the form of a doublet, moreover , the difference between the tops of the histogram is 500 imp . Standard deviation doubled , relative

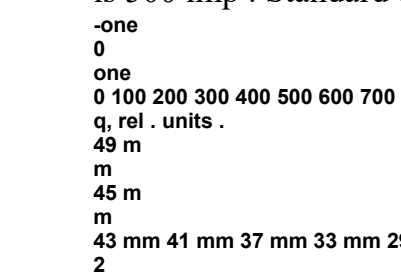

Fig . 4. Distribution of fluctuations of the cesium peak area depending on the point measurements where , 1 - moving average of ten measurements , 2 - trend line . (By abscissa - number of measurements).

points 41 mm . In this case , the difference between the vertices of the distribution doublet q_{49} is 1.08 rel . units . Statistical analysis of the integral sample showed the following result $\langle N_{st} \rangle \approx \langle N_{rot} \rangle$, which indicates the absence of noise effects on the spectrometer reading .

When comparing the results of experiments with uneven rotation of water and uniform rotation of the rotor of the electric motor , where the relative value of the two measurements $q_{4\text{-}2} / q_{7000} = 16.8$ can serve as an indicator of an increase in the degree impact associated with uneven rotation .

In our case, the impact was carried out not only on beta - active isotopes , but also on alpha - decay . At the Siberian Physics and Technology Institute , on the basis of semiconductor detector registering alpha - particle , were conducted independent (test) experiments on remote exposure rotating liquid into a *mixture of* isotopes Am_{241} and Pu_{239} . Peak areas were measured pulse - energy spectrum of alpha - particles , energy 5485.6 keV (Am_{241}) and 5155 keV (Pu_{239}). The motor shaft with a nozzle , rotating at an angular velocity of 8000 Stock / min counterclockwise (top view) of a rotating fluid in a steel beaker .

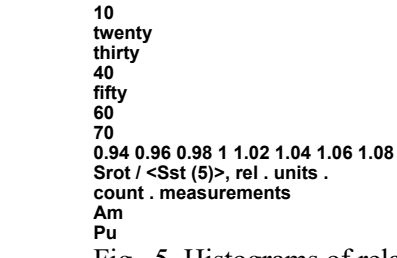

Fig . 5. Histograms of relative measurements of the peak areas of isotopes of americium and plutonium .

Before the experiments, the effect of electromagnetic noise on registered equipment . A possible source of noise was identified , it turned out to be device for switching the speeds of rotation of the electric motor . All additional measures to exclude noise impacts . Temperature regime remained constant over the entire time of measurements . In addition , while measuring two peaks , any noise effect affects proportionally both peaks . Consequently , the direct correlation of the sample values of these peak areas may indicate extraneous noise impact . IN experimentally, no such effects were observed .

The distances from the radioactive source to the bottom of the glass were as follows ; 1 cm , 2 cm , 3 cm , 4 cm , 5 cm . Detector and alpha - source are rigidly connected to each other , the source was attached to the detector from above . All measurements were carried out starting from

distance $L_1 = 5$ cm , further raising the detector with the source along the axis rotation , in steps of one centimeter . Peak measurement at every distance

took place in two modes , one hundred measurements during engine operation and one hundred measurements
after turning it off .

In the papers [15-18] shows , that after switching off the electric motor occurs a sufficiently long relaxation of the altered distribution of the activity of the source at every spatial point . In other words , the field , generated by the rotation , has been in a metastable state for more than a week and , at this point space continues to affect the decay of the nucleus , which , in turn , leads to a changed distribution of the sample of pulses (from the usual Poisson distribution , to multiplet distribution with increasing variance). Therefore , statistical analysis must be carried out in comparison with first sample , obtained before the first measurement in the rotational mode . In our case, it is possible , ie . to . the radioactive source is rigidly attached to the detector . Therefore , the intensity reading at each measurement point should not change (in the absence of influence on the excited nucleus).

Construction of a histogram of the totality of all relative samples $S_{rot} / \langle S_{st} \rangle$ has convincingly shown , that rotation affects the alpha - decay of an atomic nucleus , moreover distribution of the alpha - particle becomes multiplet and intensity americium falls , and plutonium isotope increases (Fig . 5). Univariate ANOVA of these distributions determined the Fisher coefficient $F = 98$, at the critical value $F_k = 3.8$.

Statistical analysis of the results obtained revealed ; *in - the first* , the rotation liquid remotely affects the decay rate of excited nuclei , *in - second* , the magnitude of the changes in decay and dispersion depends on the distance relative to the rotating object and *, in - Third* , the intensity of the peak Am_{241} decreased , and the intensity peak Pu_{239} increased in rotational mode , relatively static measurement mode . Testing statistical hypotheses was carried out according to certain values of the Student and Fisher criteria .

Using the phenomenon of quantum nonlocality (entangled states of quantum ensemble), one can influence one radioactive source , and measure the decay rate of another source previously representing one structure . In the experiment under consideration, the effect on the isotope Zn_{65} and registration of another isotope of the same with the energy of gamma - quanta of 1115 keV [21]. The essence of the experiment is contained in the following reasoning : in - first , when the formation of molecular bonds of zinc salts, zinc atoms also enter into interaction with each other . Electronic shells of an atom , interacting with nucleus , in turn, interact with the shells of other atoms , which and leads to entanglement of certain nuclear states of various quantum systems [22]. Nonlocal correlations are formed between excited nuclei zinc . Consequently , with a sufficient degree of entanglement of the excited quantum states , in the case of external action on these systems , leading to a change in their states (for example , to sample no. 2) in another system (sample no. 1) the quantum states of excited nuclei will also change . In this case a correlation will appear in the rate of decay of nuclei . In - Second , this property

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(nonlocal correlations) of quantum systems allows spaced
impact and measurement , which, respectively , allows you to interpret the change
in readings as a change in the rate of decay of atomic nuclei .
The peak and integral (of the entire spectrum , starting from the first channel) were measured in
three modes , 60 measurements with uniform rotation of water by the rotor nozzle
motor with an angular velocity of 8000 about / min clockwise (top view)
60 measurements after stopping it (motor off) and 60 measurements at
counterclockwise rotation . Peak area corresponded for one sample
~ 7000 imp ., For another ~ 9000 imp . Each sample for all modes was measured
2160 times . The " live " measurement time was 25 s , the spectrum processing time was 60 s .
The average detector load was ~ 3000 pulses / s . The source was rigidly attached to
detector , and the glass with the electric motor moved along the axis of rotation upwards from 1
cm (from the radioactive source to the bottom of the glass) to 12 cm in 1 cm increments .
R_2 = 0.4026
0.97
0.975
0.98
0.985
0.99
0.995
one
0.995 1 1.005 1.01 1.015
S (No. 1) / S_0
S (No. 2) / S_0
R_2 = 0.6471
0.97
0.975
0.98
0.985
0.99
0.995
one
1 1.005 1.01 1.015
S (No. 1) / S_0
Fig . 6. Correlation dependences of relative mean values
areas of peaks of zinc # 2 and # 1 where , measurements in clockwise modes
and static (a), measurement in counterclockwise mode (b).
a b
In fig . 6 (*a* and *b*) show the results of the correlation analysis of the relative
average peaks ($\langle S_i \rangle$ / $\langle S_0 \rangle$) for zinc . Measurements in clockwise rotation modes
arrow and with the motor off (static mode) can be attributed to
one group due to the fact that the static measurement mode follows the
rotation and, accordingly, this space (downward from the bottom of the glass) contains
residual signs and properties of aftereffect (Fig . 6 (*a*)). For these modes
correlation analysis determined the coefficient k = –0.63.
In the case of counterclockwise rotation, the correlation coefficient is
the average values of the peaks of samples of zinc No. 1 and No. 2 is equal to k = 0.8 (Fig . 6 (*b*)).
obviously ,
the change in the sign of the correlation may be associated with a change in the orientation of the
impact
(left or right) when changing the direction of rotation . Statistical analysis
integral sample showed the following results < of N_{st} > > < of N_{rot} > , which indicates the
absence of noise influences on the readings of the spectrometer .

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Thus , the results of the research show , that
a rotating macro-object is a source of non-electromagnetic impact ,

causes changes in both the rate of decay of radioactive nuclei , and their variance .

Analysis of the results of studies of the impact on semiconductor detector

The long-term measurements of gamma - activity of radioactive isotopes semiconductor spectrometric complex in the instrumental spectrum gamma - rays were detected peaks , not identified with the photon energy of the isotope under study , but on the energy scale they were always located approximately 1% above the peak of total absorption (they were given the name - peak - take , see . Fig . 2). It turned out , that in the experiments with the rotating objects , in depending on the conditions of the experiment , the average values of the peak areas - duplicates could change its value several times (Fig . 7). In fig . 7 shows the dependencies the difference between the mean values of the peaks of total absorption and the peaks - duplicates in the modes measurements during rotation and absence of rotation (r . f dS = |. $< S_{rot} >$ - $< S_{st} >$ |). Seen , that dependence is nonlinear .

Further studies have shown , that the appearance of the peak - double due to the influence amplifier . In case of using a different amplifier (with a different time characteristic reaching the maximum amplitude (t)) the peak - double disappeared .

Significant sensitivity of the peak - take from changes in conditions and geometry measurements in experiments with rotation stimulated to , that would understand the physical meaning of the formation of this peak .

0
200
400
600
800
1000
1200
1400
1600
1800
2000
0 1000 2000 3000 4000 5000 6000
ds d , imp .
dS, imp .

Fig . 7. Dependence of the difference in the area of the peak - double on the difference in the area of the peak complete absorption during rotation , relative to the # mode of absence rotation .

Kinetics of nonequilibrium charges under the photoelectric effect in semiconductors in detail studied in [23]. Here it is shown , that in the gap of the semiconductor zone has levels recombination time drifting charges , m . n . sticking zone . IN turn , in a semiconductor device , during the formation of the signal amplitude at the amplifier output , the adhesion process may turn out to be decisive , and the resulting impulse will represent a superposition of two signals - drifting nonequilibrium charges and temporarily recombined in the zone adhesion [24]. In this case, the probability of the appearance of the resulting signal (peak - take) is influenced by the ratio of such time parameters as picking time charges (t_{cob}) on the input capacitor of the preamplifier and the time retention in the sticking zone .

It is also known , that the temporal characteristics of the detector affect defects crystal structure of the semiconductor and, accordingly , the average time confinement in the sticking zone of charges $t_{pr} = N / [\gamma N_p (N – n_z)]$ depends on the amount defects N, concentration of charges in sticking traps n_z and constant recombinations γ . In this case , N_p is the density of free hole states " reduced " to the level of traps depends on the depth of the hole demarcation the level of traps [23]. The position of this level is determined by the same the probability of thermal overshoot and the probability of recombination .

If the time to reach the maximum amplitude of the amplifier output signal $t \neq t_{cob}$, then when $t_{pr} <(t - t_{cob})$ pulse component amplitude , caused by the release previously captured carriers , will increase the output amplitude by ~ 1% (appears peak - double). At $t_{pr} \geq (t - t_{cob})$, the output amplitude will correspond to the amplitude peak absorption . In this case, the amplitude of the pulse of temporarily recombined signals will not be registered apparatus , ie . to . its value is less than the level discrimination . If $(t - t_{cob}) << t_{pr}$, then the peak - double in the instrumental spectrum is not implemented (this is possible even with a significant decrease in the time to reach maximum amplitude of the amplifier output signal).

Thus , the likelihood of the appearance of a peak - double will depend on the ratio mean values t, t_{cob} and t_{pr} , and if the ratio

$$(t - t_{cob}) / t_{pr} \sim 1, \quad (2)$$

then the sensitivity of the sensor to the remote action of rotating objects will be maximum . Therefore , changes in collection time and time retention zone nonequilibrium charge trapping semiconductor (m . e . energy change) change the average value of the peak area - double , which accordingly leads to a change in the average value of the peak of total absorption .

Let us give the following example of simultaneous measurement of ^{137}Cs and ^{60}Co in a static mode (St) and rotational modes in the clockwise (Po) and counterclockwise (Pr) arrows . One hundred measurements were carried out in one geometry . When measuring the isotope ^{137}Cs (with a gamma quantum energy of 661.6 keV), another peak with an average energy of 669.6 keV . Moreover , the frequency

its appearance V in the sample is different for different modes and measurement geometries . This peak is a double of S_d . Simultaneously with cesium, the peaks ^{60C} with an energy of 1173 keV and 1332 keV and, accordingly, the areas of the peaks - doubles , with energies of 1183 keV and 1343 keV . Average peak area - double taking into account the frequency of occurrence in the sample of instrumental spectra is determined by the formula $s_d = S_d V / 100$. The experimental results are recorded in Table 1.

Thus , decreasing the time collection and holding time in the zone semiconductor adhesion increase the likelihood of occurrence peak - take . Changes to statistical distributions of the peak area - double in depending on the conditions of experiments with rotation confirm the fact remote influence of rotation on

nonequilibrium quantum systems . Using relation (2) in
photo-recording semiconductor devices , it becomes possible
build a highly sensitive sensor of frequency - phase characteristics
non-electromagnetic field .

Conclusion

Experts - the experimenters in the field of nuclear physics with distrust and
are skeptical about the results . Extremely difficult , within
traditional concepts , recognize the fact of remote impact of rotation
macroobject on the decay rate of excited atomic nuclei . Even agreeing with
possible generation of a non-electromagnetic field , the question arises about the constant
interaction of this field and of the processes in the excited nuclei , leading to
change in decay constants .

Recognizing the very fact of the presence , and relying on the discovered properties of this field
a number of assumptions and hypotheses can be made that allow, at a formal level,
identify possible approaches to solving the questions posed .

Based on the analysis of the listed properties of this field, two
basic qualities : *informational - power* , transmitting the moment of forces and
orienting vector of moments of test objects ; *informational* ,
transmitting entropy (organization) and influencing the information
entropy of the surrounding space . Moreover , the information - force field
propagates in space at a finite speed , and the information
the impact manifests itself instantly . Perhaps , that rotation is simultaneously
a source of two types of influences .

From the point of view of a synergistic approach, the ensemble of excited atomic nuclei
represents a nonlinear structure in the peaking mode [25]. condition
open structure in this mode is extremely sensitive to microfluctuations
external environment . If under the external environment we take a physical vacuum with its

S 661 **S** 1173 **S** 1332 **S** d
669 **S** d
1183 **S** d
1343
St 10123 9505 8886 1829 120 0
Pr 5536 4742 3988 687 710 522
Po 7085 6386 5769 1331 1543 1173

Table 1. Measurement results
the effects of rotation on averages
gamma peak area values
radiation of radioactive isotopes .

microfluctuational " boiling ", then modulated (polarized along the back)
non-electromagnetic field fluctuations of quantum states of the vacuum , in its
turn , modulate the magnitude of fluctuations in the potential energy of the nucleus ,
respectively and fluctuation , and the decay constant of the excited nuclei .

Another explanation can be the hypothesis of the generation by a rotating object
non-electromagnetic field with torsion , orienting the vectors of the spinors of the test
systems [26]. In this case, a precession of spins of weakly relativistic
particles in an external torsion field , as well as the splitting of energy levels in
spectrum of particles . These processes lead to a change in the energy of quantum objects .

Naturally , if in the recorded device , or in a radioactive source
these effects are manifested , they can lead to the formation of doublets and

other phenomena in the distribution of the registered particle flux .
According to the representation A . H . Kozyrev et al ., The pace (course) of time organized systems depends on the entropy flows of the surrounding systems and on rotating objects , affecting the travel time value pseudovector [3, 27]. Stroke time (respectively, the rate of processes) of the surrounding space of the trial quantum system can change , which will lead to a change in the internal energy of the system itself .
Apparently , all three processes in a system with rotation can occur simultaneously , but the degree of their influence on each quantum object is different . IN Finally, it should be noted , that these properties investigated exposure , based on the experimental results , suggest, the emerging need for the integration of various ideas in the construction of theoretical models of the generated impact .

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