30-58-4-20/44

The Physics of Nuclear Reactions With Small and Medium Energies . Conference in Moscow

3) A great number of phenomena connected with the non-spheroidal form of equilibrium of the nuclei can be under_stood from the viewpoint of the collective model.
The following reports were delivered:

1) P. E. Nemirovskiy: On results of the theoretical analysis of the interaction of neutrons of small and medium energies with nuclei.

2) V. V. Vladimirskiy, Ye. V. Inopin, S. I. Drozdov: On problems of the optical model.

3) V. M. Agranovich, A. S. Davydov: On theoretical foundations of the nuclear models.

4) B. L. Birbrair, L. A. Sliva: On the form of equilibrium of the nucleus.

5) N. A. Vlasov: On excited states of the α-particle.

6) F. L. Shapiro: On the problem of the state 0^+.

7) I. I. Levintov: On the radius determination of the α-particle.

Card 2/3   8) Ye. K. Zavoyskiy: On the construction of accelerators.

30- 58-4-20/44

The Physics of Nuclear Reactions With Small and Medium Energies. Conference in Moscow

9.) G. Barshall(USA): On the investigation of polarization phenomena.

10.) Yu. A. Aleksandrov: On the electromagnetic interaction of fast neutrons and nuclei.

11.)G. N. Flerov: On works of his group concerning nuclear reactions.

12.)A. I. Alikhanov: On measurements of the polarization of electrons forming during β-decay.

1. Nuclear physics—USSR

Card 3/3

AUTHOR: Inopin, Ye. V.   SOV/56-34-6-12/51

TITLE: The Scattering of Neutrons by Non-Spherical Nuclei
            (Rasseyaniye neytronov nesfericheskimi yadrami)

ABSTRACT: This paper calculates the scattering of neutrons by a semi-
            transparent non-spherical even-even nucleus (with zero spin).
            The shape of this nucleus may be a rotation ellipsoid with
            arbitrary excentricity. For the sake of determinateness, the
            author investigates a prolate ellipsoid, using the adiabatic
            approximation. But in this paper the scattering amplitudes
            are not calculated in the quasiclassical approximation, but
            by means of the well-known particular solutions of the wave
            equation in spheroidal coordinates. The solution of this
            problem may be reduced to the solution of the problem of
            the scattering on a nucleus with fixed orientation, that
            is to the determination of the scattering amplitude (which
            depends on the orientation of the nucleus) and to the averag-
            ing of this amplitude with respect to the orientation. The
Card 1/3   author then introduces spheroidal coordinates. In spheroidal

The Scattering of Neutrons by Non-Spherical Nuclei   SOV/56-34-6-12/51

coordinates the wave equation has a set of particular solu-
tions which may be characterized by the quantum numbers l
and m . These numbers can have the same values as the quantum
numbers of the orbital moments and its projection. An ex-
plicit expression for the particular solution ψ_{lm} is given.

In the third part of this paper the scattering amplitudes
are calculated. Then the various cross sections of the scat-
tering of neutrons by non-spherical nuclei are obtained. First
en expression is given for the excitation of all rotation
ttates, including the elastic scattering) and then follows
the total cross section of all processes. Then the differential
cross sections are calculated. At last the author reports
on the numerical computations and on the comparison of their
results with the experiment. The angular distributions for
a spherical and for a non-spherical nucleus differ little
for normal angles and noticeably for great angles. The angular
distribution of a non-spherical nucleus is more similar to
the experimental results than that of a spherical nucleus.
The non-sphericity has a noticeable influence on the scatter-
ing, but for more definite conclusions additional experiments
and more exact calculations are necessary. Especially the

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The Scattering of Neutrons by Non-Spherical Nuclei   SOV/56-34-6-12/51

contribution from the scattering with production of a compound nucleus has to be investigated. It would be advantageous to investigate the excitation of the rotation levels by neutrons. The author thanks V. N. Gribov for his useful discussion and Z. V. Gerasimenko for his help in the numerical computations. There are 2 figures, 1 table, and 10 references, 3 of which are Soviet.

ASSOCIATION: Fiziko-tekhnicheskiy institut Akademii nauk Ukrainskoy SSR (Physical-Technical Institute of the AS Ukrainian SSR)

Card 3/3

INOPIN, YE.U.

SOV/89-...-18/26

21 (7), 21 (8)
AUTHOR: Rudakov, V. P.

TITLE: II All-Union Conference on Nuclear Spectroscopy
             (II Vsesoyuznoye soveshchaniye po yadernoy spektroskopii)

PERIODICAL: Atomnaya energiya, 1959, Vol 7, Nr 1, pp 70-75 (USSR)

ABSTRACT: The II All-Union Conference was held from January 26 to
             Februar/ 2, 1959 at Khar'kov. More than 300 participants heard
             100 lectures, the most important of which dealt with the
             following fields: Nuclear Theory, General problems of β-decay,
             4. S. Davydov (MGU): Theoretical classification of low-energy
             excited nuclear states, L. K. Peker: Deformed nuclei. B. L.
             Birbrain, L. K. Peker, L. A. Sliv (LFTI): Quadrupole
             oscillations of deformed nuclei. I. ...
             ...

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Card 3/3

INOPIN, Ye.V. [Inopin, IE.V.]

Scattering of high energy electrons on light nonspherical nuclei
[with summary in English]. Ukr. fiz. zhur. 4 no.1:17-29 Ja-F '59.
(MIRA 12:6)

1.Fiziko-tekhnicheskiy institut AN USSR.
(Electrons--Scattering)

INOPIN, Ye.V.; KAGANOV, M.I. [Kahanov, M.I.]; KRUGLIKH, A.A. [Kruhlykh, A.A.];
KHIZHNYAK, M.A. [Khyzhniak, M.A.]

Scientific conference of young scientists at the Physical and
Technological Institute of the Ukrainian Academy of Sciences. Ukr.
fiz. zhur. 4 no.3:406-408 My-Je '59.   (MIRA 13:2)
        (Physics--Congresses) (Technology--Congresses)

21(10)
AUTHORS:

Guseva, M. I., Inopin, Ye. V.,   SOV/56-36-1-1/62
Tsytko, S. P.

TITLE:

Penetration Depth and Distribution Character of Atoms Injected Into a Si^{30} Isotope Target (Glubina proniknoveniya i kharakter raspredeleniya vbitykh atomov v izotopnoy misheni Si^{30})

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 1, pp 3-9 (USSR)

ABSTRACT:

In their introduction, the authors discuss several investiga-tions carried out previously in this field as e.g. by Bohr (Bor) (Ref 1) and Nielson (Nil'sen) (Ref 2). viz. theoretical in-vestigations of the penetration depth and the distribution function of target atoms in the base layer; experimental data were obtained from proton and α-particles scattering tests (Ref 3), resonance capture of protons (Ref 2) and by means of tagged atoms (Ref 4).
The aim of the present paper is the investigation of the pene-tration depth of Si^{30}-ions into copper- and tantalum backings in dependence on the backing material and ion energy, as well as the investigation of Si^{30} atom distribution in the surface layer of the backing. Estimation of data is possible by

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Penetration Depth and Distribution Character of   SOV/56-36-1-1/62
Atoms Injected Into a Si^{30} Isotope Target

means of the reaction $Si^{30}(p,\gamma)P^{31}$. All measurements with this
reaction were carried out on a silicon target with 940 keV
protons.
First, the preparation of the isotope target is described. The
silicon isotope was electromagnetically precipitated (ion cur-
rent 30 μA) on to the tantalum- or copper backing (14 mm dia-
meter, 0.2-0.5 mm thickness)(see also references 5,6). Four
such targets were produced, 3 of which with Cu- and one with
Ta- backing. Preparation data are given by table 1. In the
next paragraph the authors describe the investigation method,
which is based, in principle, on measuring the γ-yield in
the case of resonance at E_p = 940 keV in the above-mentioned
reaction.   Width, shape, and height of the resonance peak were
determined (Fig 2). This resonance peak was measured by means
of the electrostatic precision generator of the FTI AN USSR
(Physical-Technical Institute, AS UkrSSR). The γ-yield was
measured on a NeJ(Tl)-crystal by means of the photomultiplier
FEU-19. A block scheme of the experimental arrangement is
shown by figure 1. Results are given by diagrams and in table 2.
Card 2/4   Figure 3 shows the γ-yield of the reaction $Si^{30}(p,\gamma)P^{31}$ for

Penetration Depth and Distribution Character of   SOV/56-36-1-1/62
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2 targets with copper backing, figure 4 shows the depth dis-
tribution function of Si^{30}-ions in a tantalum backing. The
authors obtained the following results:
1) The penetration depth of Si^{30}-ions in tantalum in the case
of an ion energy of 25 keV was experimentally determined as
amounting to 30 mkg/cm^2, which agrees well with theory.
2) The distribution of the silicon atoms which penetrated into
the tantalum backing is similar to the distribution following
from the diffusion theory for thermal neutrons.
3) In a layer of 30 mkg/cm^2 2 silicon atoms correspond, on the
average, to each tantalum atom, which indicates a considerable
deformation of the tantalum lattice and the existence of an
intermetallic TaSi$_2$-compound.
4) The experimentally determined penetration depth of silicon
atoms in copper is 3 to 4 times greater than that calculated
on the basis of Nielson's formula and smaller than that
following from the theory developed by N. Bohr.
The authors finally thank K. D. Sinel'nikov and A. K. Val'ter
for the interest they displayed in the work and for their dis-
cussions, and they also express their gratitude to Yu. P. Antuf'-

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Penetration Depth and Distribution Character of $\qquad$ SOV/56-36-1-1/62
Atoms Injected Into a Si^{30} Isotope Target

yev, V. Yu. Gonchar, A. N. L'vov, P. M. Tutakin, and
Ye. G. Kopanets for taking part in measurements, and, finally,
they express their thanks to A. A. Taygikalo and his collabor-
ators. There are 4 figures, 2 tables, and 9 references, 6 of
which are Soviet.

ASSOCIATION: Fiziko-tekhnicheskiy institut Akademii nauk Ukrainskoy SSR
(Physico-Technical Institute of the Academy of Sciences,
Ukrainskaya SSR)

SUBMITTED: October 5, 1957, (initially) and September 15, 1958, (after
revision)

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24(5)
AUTHORS: Vysotskiy, G. L., Inopin, Ye. V.,   SOV/56-36-2-33/63
             Kresnin, A. A.

TITLE: The Scattering of Neutrons by Oriented Nonspherical Nuclei
             (Rasseyaniye neytronov oriyentirovannymi nesfericheskimi
             yadrami)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959,
             Vol 36, Nr 2, pp 574-580   (USSR)

ABSTRACT: In earlier papers (S. I. Drozdov, Inopin, Refs 1-3) the
             influence exercised by the nonsphericity of nuclei on total
             cross section in neutron scattering was investigated. At
             neutron energies of some tens of Mev the total neutron cross
             section varies as a result of nonsphericity by 2-3% in the
             case of experimentally observable nonsphericity. The nucleus
             is considered to be an ellipsoid with the semiaxes a and b;
             a is assumed to lie in the same direction as the symmetry axis
             of the nucleus. If the direction of the symmetry axis
             coincides with the incident neutron beam, $6_t^{\parallel} = 2\pi b^2$; if the

             symmetry axis is vertical to the inciding beam, then

Card 1/3 $6_t^{\perp} = 2\pi ab$ $(6_t^{\perp}/6_t^{\parallel} = a/b)$ and, correspondingly $6_t^{\perp}/6_t^{\parallel} > 1$ or

The Scattering of Neutrons by Oriented   SOV/56-36-2-33/63
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$6 \frac{1}{t'} / 6\frac{u}{t} < 1$. a/b values of 1.3-1.4 were found experimentally,
which would correspond to a nonsphericity effect of 30-40%.
This value, of course, is based on the assumption of a com-
plete orientation of nuclear spins, which cannot be realized
in practice. In the case of incomplete orientation the
symmetry axis performs a precise motion round the direction
of spin, which is to be neglected only in the case of very
large spins, i.e. in the quasiclassical case. The authors
investigate these conditions and calculate the total cross
section and neutron angular distribution in neutron scattering
on oriented nonspherical nuclei by using adiabatic approxima-
tion (cf.Refs 1-3); this is justified in the case of neutron
energies of more than several Mev. Concrete examples are
calculated by means of the black nucleus model; results
therefore hold good only for the neutron energy range of
several tens of Mev. Results show that the nonsphericity
effects are more appreciable in oriented than in nonoriented
nuclei. The angular distribution of neutrons scattered on
oriented nonspherical nuclei shows noticeably azimuthal

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Nonspherical Nuclei

asymmetry (Figs 3,4). A table contains the formulae for
$\bar{\sigma}(f_k)/\bar{\sigma}(0)$ for spin values between 1 and 7/2. There are
4 figures, 1 table, and 8 references, 6 of which are Soviet.

ASSOCIATION: Fiziko-tekhnicheskiy institut Akademii nauk Ukrainskoy SSR
               (Physico-Technical Institute of the Academy of Sciences,
               Ukr SSR)

SUBMITTED: August 23, 1958

Card 3/3

INOPIN, Ye. V. [Inopin, IE.V.]

Stripping of alpha particles from Be^9, C^{12}, and O^{16} nuclei. Ukr. fiz. zhur. 5 no.6:744-751 '60.   (MIRA 14:3)

1. Fiziko-tekhnicheskiy institut AN USSR.
              (Particles(Nuclear physics))
              (Nuclear reactions)

INOPIN, Ye.V.

    Structure of gigantic resonance in photonuclear reactions.
    Zhur.eksp.i teor.fiz. 38 no.3:992-994 Mr '60.
                                 (MIRA 13:7)

    1. Fiziko-tekhnicheskiy institut Akademii nauk SSSR.
        (Nuclei, Atomic) (Nuclear reactions)

83723

S/056/60/038/004/016/048
B006/B056

26.2246
24.6520

AUTHORS: Inopin, Ye. V., Tishchenko, B. I.

TITLE: Scattering of Electrons by Nuclei According to the α-Particle
                Model

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960,
                Vol. 38, No. 4, pp. 1160 - 1166

TEXT: On the basis of the structure of α-particle nuclei, the present
paper theoretically investigates the elastic and inelastic electron
scattering and analyzes experimental data concerning the nuclei Be^9, C^{12},
and O^{16}. The target nucleus is considered to be a system of α-particles at
rest relatively to one another which, as a result of the action of the
field of the incident electrons, rotates as a whole. The rotational states
are taken into account in the calculations by the quantum numbers I and K;
$\sigma_{IK}(\theta)$ is searched for, where θ is the scattering angle. Calculations are
carried out in Born approximation, which is sufficient for investigating
electron scattering from light nuclei. First, Be^9 is investigated (for the

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Scattering of Electrons by Nuclei According to   S/056/60/038/004/016/048
the α-Particle Model   B006/B056

simplest nucleus with α-structure Be^8 is unstable). $I_0 = 3/2$, $K_0 = 3/2$;
the excited states are characterized by $K=K_0=3/2$ and $I = 5/2$, $7/2$ ... . For
the elastic and inelastic scattering cross sections on excited states ex-
pressions of the form $\sigma_{IK}(\theta) = X\sigma_\alpha(\theta)\left[j_1^2(qd)+Yj_{1+2}^2(qd)\right]$ are given, where
the j_1 are spherical Bessel functions, q is the transferred momentum,
2d - the distance between the α-particles, and $\sigma_\alpha(\theta)$ - the elastic
scattering cross section on an α-particle; X and Y are numerical constants.
For electron energies of $\lesssim 200$ Mev the terms with j_4 are small, and one may
put $\sigma_{5/2,3/2}(\theta) = \frac{9}{5}\sigma_{7/2,3/2}(\theta)$. These results are compared in Fig. 1 with
corresponding experimental data (for an electron energy of 190 Mev,
1 - elastic scattering, 2 - inelastic scattering from the 2.5-Mev level,
3 - inelastic scattering from the 6.8-Mev level). The C^{12}-nucleus is
investigated in the following; the three α-particles are assumed to form
the corners of a regular triangle. A formula is first given for the

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Scattering of Electrons by Nuclei According to   S/056/60/038/0...../016/048
the α-Particle Model   B006/B056

purpose of determining the rotational level energy ε_K^I , which is discussed, after which formulas are given for the cross sections of the elastic scattering of level excitation 2^+ and 3^-. According to these formulas (6), the differential cross sections are calculated for an electron energy of 187 Mev, and are compared with experimental values in Fig. 2 (as a function of 6); 1 - elastic scattering, 2 - inelastic scattering from the 4.43-Mev level, and 3 - inelastic scattering from the 9.61-Mev level. In Fig. 3 the curves $\frac{d\sigma}{d\Omega}$ (θ) calculated for 420-Mev electrons are compared with experimental data. The O^{16}-nucleus is considered to be a regular tetrahedron with α-particles at the corners. $\sigma_{oo}(\theta) = 16\sigma_\alpha(\theta)j_o^2\sqrt{(3/2)}qd$ holds for elastic scattering. In Fig. 4 the $\frac{d\sigma}{d\Omega}$ (θ)-curves calculated are compared with experimental data (for $E_{el} = 420$ Mev). Finally, the results obtained are discussed. There are 5 figures and 18 references: 1 Soviet, 1 Italian, 2 Dutch, 2 British, and 12 US.

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Scattering of Electrons by Nuclei According to   83723
the α-Particle Model   S/056/6./038/003/016/046
                                                   B006/B056

ASSOCIATION: Fiziko-tekhnicheskiy institut Akademii nauk Ukrainskoy SSR
              (Institute of Physics and Technology of the Academy of
              Sciences, Ukrainskaya SSR)

SUBMITTED: August 12, 1959

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85684

S/056/60/038/006/026/049/XX
B006/B070

24.4500

AUTHORS: Volkov, D. V., Inopin, Ye. V.

TITLE: Motion of Nucleons in an Anisotropic Oscillator Potential Taking Into Account Spin-Orbit Interaction

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 38, No. 6, pp. 1765-1770

TEXT: A method is proposed for the calculation of the wave functions and level energies of nucleons moving in an oscillator potential. This problem appears in treating the bound state of individual nucleons according to the generalized model (where it was solved by Nilsson), and is of particular interest for deformed nuclei, as was shown by A. S. Davydov et al. and B. T. Geylikman. The method proposed in the present paper is suitable for calculating the wave functions and eigenvalues of nucleon energies in non-axial nuclei. It is mentioned in the introduction that this method differs from that of Nilsson in important respects, and this difference is discussed. The present method is based on the smallness of

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Motion of Nucleons in an Anisotropic
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B006/B070

the spin-orbit coupling constant ($\varkappa \approx 0.05$). In the representation of the anisotropic oscillator, the spin-orbit coupling is diagonalized when terms only up to the order of $\varkappa^2$ are considered. Taking into account the spin-orbit coupling, the Hamiltonian describing the motion of the nucleons in the nuclear field has the form:

$$H = H_o + \lambda \vec{s} \text{ grad} \left[V(\vec{r}), \vec{p} \right] ; \quad H_o = \vec{p}^2/2 + V(\vec{r}); \quad (\lambda - \text{coupling constant};$$

$$M = \hbar = 1; \quad M - \text{nucleon mass}); \quad V(\vec{r}) = \frac{1}{2} \sum_i \omega_i^2 x_i^2. \quad \text{Taking } x_k = \frac{1}{\sqrt{2\omega_k}} (a_k^+ + a_k),$$

and

$$p_k = i \sqrt{\frac{\omega_k}{2}} (a_k^+ - a_k), \quad \text{where} \left[a_k, a_l^+ \right] = \delta_{kl}, \quad \left[a_k, a_l \right] = \left[a_k^+, a_l^+ \right] = 0 \text{ holds for}$$

the operators a_k and a_k^+, the Hamiltonian takes the form

$$H = \frac{1}{2} \sum_i \omega_i (a_i a_i^+ + a_i^+ a_i) + i\varkappa \sum_{ikl} \epsilon_{ikl} \sigma_i f_{kl} a_k^+ a_l ; \quad (\varkappa = -\lambda \omega_o/2; \quad \sigma_i \text{ are Pauli}$$

matrices) in the approximation made here; addends containing terms of the

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Motion of Nucleons in an Anisotropic   S/056/60/038/006/026/049/XX
Oscillator Potential Taking Into Account   B006/B070
Spin-Orbit Interaction

type $a_1 a_k - a_1^+ a_k^+$ can be neglected. It is shown in the following that the
problem can be reduced to a simple analytical solution in the limiting case
of a strong deformation of the nucleus. Since the spin-orbit coupling
makes a contribution of the order of $\varkappa^2$, the case of a strongly non-
spherical nucleus with large non-axiality cannot be considered. In the
case of a strongly non-spherical nucleus with arbitrary non-axiality, the
terms which are non-diagonal with respect to n_z are negligible, and after
a canonical transformation, the Hamiltonian takes the form:

$$H = A(N, n_z) + \frac{1}{2} \omega_0 \sqrt{\Delta^2 + (2\varkappa')^2} (a_x^{+'} a_x^{'} - a_y^{+'} a_y^{'}).$$ Fig. 1 shows the nuclear
energy as a function of non-axiality: a - oscillator without spin-orbit
coupling; b - real oscillator. The non-physical region is shaded. Broken
lines show the case when a small perturbation of the nucleus displaces
the energy minimum. From the curves it can be concluded that the spin-
orbit coupling stabilizes the axial nuclear form against the influence of
small perturbations. G. Ya. Lyubarskiy is thanked for discussions. There

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Motion of Nucleons in an Anisotropic
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S/056/60/038/006/026/049/XX
B006/B070

are 2 figures and 3 references: 2 Soviet and 1 Danish.

ASSOCIATION: Fiziko-tekhnicheskiy institut Akademii nauk Ukrainskoy SSR
                (Institute of Physics and Technology of the Academy of
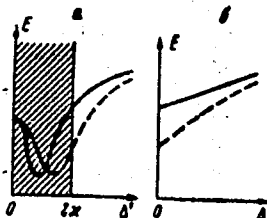   Sciences Ukrainskaya SSR)

SUBMITTED: December 21, 1959

Fig. 1

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INOPIN, Ye.V. [Inopin, IE.V.]; TISHCHENKO, B.I.

Deformations of light nuclei. Ukr. fiz. zhur. 6 no.3:291-296 My-Je '61.
(MIRA 14:8)

1. Fiziko-tekhnicheskiy institut AN USSR, g. Khar'kov.
(Nuclei, Atomic)

TISHCHENKO, B.I.; KRESNIN, A.A.; INOPIN, Ye.V.

Motion of nucleons in deformed light nuclei. Izv. AN SSSR.
Ser. fiz. 26 no.1:138-147 Ja '62.   (MIRA 15:2)

1. Fiziko-tekhnicheskiy institut AN USSR.
            (Nuclear spin)
            (Wave mechanics)

S/185/62/007/004/001/018
D407/D301

AUTHORS: Inopin, Ye. V., and Berezhnoy, Yu. A.

TITLE: On the effect of spread of nucleus boundary
                on diffraction scattering

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 7, no. 4,
                1962, 343-347

TEXT: A simple method is proposed for ascertaining the
effect of nuclear-boundary spread on diffraction scattering.
It is shown that the free path of the scattered particles can
be estimated by comparing experimental and theoretical results.
The diffraction-scattering amplitude of a particle by a non-
spherical nucleus is

$$ f(\alpha, \theta) \;=\; \frac{iK}{2\pi} \int \omega(\rho)\, e^{-i\vec{\varkappa}\vec{\rho}}\; d\vec{\rho}, \qquad (1) $$

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On the effect of...

S/185/62/007/004/001/018
D407/D301

where α is the deformation parameter, θ --the scattering angle, K--the wave vector of the incident particle, $\varkappa$ --the change in the wave vector during the scattering. The function $\omega(\rho)$ characterizes the absorbing properties of the nucleus. The spread of the boundary is described by the function $\omega(\rho)$:

$$\omega(\rho) = \int \omega_0(u)\, \Phi\,(|u - \vec{\rho}|\,)du, \qquad (2)$$

where the function $\Phi(z)$ has to be a positive quantity which decreases rapidly for large values of the argument. From Eqs. (1) and (2) one obtains

$$F(\theta) = \int \Phi(z) e^{-i\vec{\varkappa}\,\vec{z}}\, dz, \qquad (4)$$

where $F(\theta)$ characterizes the spread. If the function $\Phi(z)$ is taken in the form

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$$\bar{\Phi}(z) = \frac{1}{\pi\Delta^2}\, e^{-\frac{z^2}{\Delta^2}}, \qquad\qquad (7)$$

then

$$F(\theta) = e^{-\frac{1}{4} K^2 \Delta^2 \sin^2\theta}. \qquad\qquad (8)$$

As an application of the above theory, the scattering of α - particles by Mg^{24}-nuclei is considered (elastic scattering as well as scattering with excitation of the first vibrational level of the Mg^{24}-atom). The differential cross-section curves (theoretical and experimental) of the elastic scattering are compared. The width of the spread $\Delta = 0.79 \cdot 10^{-13}$ cm. The

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differential scattering cross-section curves (with excitation of the first vibrational level) were also compared. It was found that theory and experiment were in good agreement in the region of large angles. The free path of α -particles in Mg^{24} -atoms was estimated; it was found to be $2 \cdot 10^{-13}$ cm, which is in good agreement with the results of other investigators. There are 4 figures and 7 references: 3 Soviet-bloc and 4 non-Soviet-bloc. The references to the English-language publications read as follows: J. S. Blair, Phys. Rev., 115, 928, 1959; D. K. McDaniels, J. S. Blair, S. W. Chen, G. W. Farwell, Nucl. Phys., 17, 614, 1960; J. S. Blair, G. W. Farwell, D. K. Daniels, Nucl. Phys., 17, 641, 1960; C. E. Porter, Phys. Rev., 99, 1400, 1955.

ASSOCIATION: Fizyko-tekhnichnyy instytut AN URSR (Physico-technical Institute of the AS UkrRSR), Kharkiv

SUBMITTED: August 21, 1961

Card 4/4

VADIA, V.; INOPIN, Ye.; YUSEF, M.

Electron scattering by nuclei according to the α-particle
model of the nucleus. Zhur. eksp. i teor. fiz. 45 no.4:1164-
1166 0 '63.
                                        (MIRA 16:11)

L 11956-65   EWT(1)   APWL/SSD/ASD(a)-5/ASD(dp)

ACCESSION NR: AP4046404   8/0056/64/047/003/0892/0895

AUTHOR: Iaopin, Ie. V.

TITLE: On the determination of the change in parity in inelastic
scattering

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47,
no. 3, 1964, 892-895

TOPIC TAGS: inelastic scattering, parity, differential cross section

ABSTRACT: The purpose of this paper was to verify a hypothesis first
advanced by Glendenning (Phys. Rev. v. 114, 1297, 1959) that the dif-
ferential cross-section for forward inelastic scattering vanishes
when there is a parity change. Although this hypothesis was proved
on the basis of the distorted-wave method by Kromminga and McCarthy
(Phys. Rev. Let. v. 6, 62, 1961), it was considered of interest to
obtain for the same rule a derivation not based on the assumption

Card 1/3

L 11956-65
ACCESSION NR: AP4046404

that the interaction is small. To this end, numerical calculations
were made of the inelastic scattering due to the direct interaction
mechanism. The results show that the differential forward scatter-
ing cross sections are either very small or very large, depending
on whether the parity of the nucleus has changed during the scat-
tering or not. The results indicate that for a spinless particle
the Glendenning rule follows from some extremely general assumption
an from the symmetry properties of nuclear processes. The assump-
tion ... ... to describe the process of inelastic
... ... The condition for the
... ... approximation is also derived. In
... appears in the adiabatic approximation, is used to
explain the Glendenning rule. It is further shown that whereas it
can be safely assumed that there is no parity change if the angular
distribution has a large value in the forward direction, the opposite
conclusion calls for a more detailed analysis. Orig. art. has: 16

Card 2/3

L 11956-65
ACCESSION NR: AP4046404

formulas

ASSOCIATION:

ENCL:

OTHER:

Card 3/3

INOPIN, Ye.V. [Inopin, IE.V.]; SHEBEKO, A.V. [Shebeko, O.V.)

Effect of diffusion of the nuclear boundary. Ukr. fiz. zhur.
9 no.11:1161-1164 N '64

(MIRA 18:1)

1. Fiziko-tekhnicheskiy institut AN UkrSSR, Khar'kov.

L 64745-65

ACCESSION NR: AP...   50

AUTHOR: Inopin, Ye. V.

UR/0056/65/048/006/1620/1624

TITLE: Diffraction scattering and Regge poles

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 48, no. 6, 1965, 1620-1624

TOPIC TAGS: Regge pole, particle scattering, scattering cross section

APSTRACT:

... nucleus is obtained for diffraction ...

ACCESSION NR: AP5016556

gradual trans..tion layer on the surface of the boundary, as well as
of other factors disregarded in usual diffraction theory. Expressed
in terms of th. Regge-pole theory, the basic hypothesis underlying
the results is that only two complex conjugate Regge poles contribute
to the amplitude. Postponing a detailed comparison of the derived
theory with experiment, the author restr...

L 11909-66

ACC NR: AP6001146   EWT(1)/EWT(m)/T   DIAAP/IJP(c)

SOURCE CODE: UR/0367/65/002/003/0423/0426

AUTHOR: Inopin, Ye. V.

ORG: None

TITLE: Optical potential of a nucleus in excited states

SOURCE: Yadernaya fizika, v. 2, no. 3, 1965, 423-426

TOPIC TAGS: nucleon, Fermi gas, excited nucleus

ABSTRACT: On the basis of the theory of optical potential proposed by A. G. Sitenko (ZhETF 43, 319, 1962), the author calculates the change in the imaginary part of the optical potential caused by excitation of the nucleus, which is described as a nucleonic Fermi gas with a finite temperature. Without giving a good quantitative agreement, such an approach provides a correct qualitative picture of the nature of the change in the optical potential with increasing energy of excitation of the nucleus and increasing energy of the scattered nucleon. It also gives the correct order of magnitude for the relative change of optical potential. Certain qualitative conclusions are drawn with regard to the effect of temperature on the real part of the optical potential. Author is sincerely grateful to A. G. Sitenko for useful discussions. Orig. art. has: 1 table and 20 formulas.

SUB CODE: 20/ SUBM DATE: 06Feb65/ ORIG REF: 001/ OTH REF: 001

Card 1/1

INOPIN, Ye.V.; KRESNIN, A.A.; TISHCHENKO, B.I.

Alpha-particle model of the nucleus and electron scattering.
IAd. fiz. 2 no.5:802-809 N '65.
(MIRA 18:12)

INOPIN, Ye.V.; KHMONIN, A.A.

Theory of diffraction scattering of particles by complex
nuclei. Zhur.eksp. i teor.fiz. 49 no.6:1796-1801 D '65.
(MIRA 19:1)

1. Fiziko-tekhnicheskiy institut AN UkrSSR. Submitted May 4,
1965.

L 17654-66   EW:(1)

ACC NR: AP6002723   SOURCE CODE: UR/0056/65/049/006/1824/1830

AUTHORS: Inopin, Ye. V.; Tishchenko, B. I.; Shebeko, A. V.

ORG: Physicotechnical Institute, Academy of Sciences UkrSSR
(Fiziko-tekhnicheskiy institut Akademii nauk UkrSSR)

TITLE: Description of inelastic diffraction scattering by the com-
plex angular momentum method

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 49,
no. 6, 1965, 1824-1830

TOPIC TAGS: particle diffraction, inelastic scattering, scattering
cross section, alpha particle reactions

ABSTRACT: A new method, which has recently been proposed by one of
the authors (Inopin, ZhETF v. 48, 1620, 1965) for the description of
elastic diffraction scattering by composite nuclei, and which is
shown in a companion paper (Inopin, with A. A. Kresnin ZhETF v. 49,
1796, 1965, ACC NR: AP6002720) to be in agreement with the available
experimental data, is used to obtain a unified description of elastic

Card   1/2

L 17654-66

ACC NR: AP6002723

and inelastic scattering of spinless particles. A simple analytic expression for the inelastic scattering cross section is derived on the basis of the complex angular momentum method. The S-matrix parameters introduced in the earlier papers are used for the inelastic scattering in this paper. The expression obtained yields the well known Blair phase rule, for which a more rigorous proof is obtained in this paper than in the past. The results are compared with experiments on the scattering of α particles by five different nuclei $(Mg^{24}, Ti^{48}, Ni^{58}, Zn^{66}, Sr^{88})$, and the comparison indicates satisfactory qualitative agreement between the theory and the experimental data. The authors thank N. Austern and J. S. Blair for sending a preprint of their paper before publication, and to A. A. Kresnin for valuable discussions. Orig. art. has: 5 figures, 16 formulas and 3 tables.

SUB CODE: 20/ SUBM DATE: 02Jun65/ ORIG REF: 004/ OTH REF: 012

Card 2/2 nst

L 44375-6(EWT(1)/EWT(m)/T

ACC NR: AP6020215   SOURCE CODE: UR/0056/66/050/006/1592/1602

AUTHOR: Inopin, Ye. V.

ORG: Physicotechnical Institute, Academy of Science, Ukrainian SSR (Fiziko-tekhnicheskiy institute Akademii nauk Ukrainskoy SSR)

TITLE: Inelastic diffraction scattering

SOURCE: Zh eksper i teor fiz, v. 50, no. 6, 1966, 1592-1602

TOPIC TAGS: inelastic scattering, scattering cross section, nuclear spin, particle scattering

ABSTRACT: A method has been suggested for solving the problem of inelastic scattering of particles by nuclei, accompanied by excitation of collection states. The method is based on the possibility of separating the variables in the central field when the scattering involves large angular moments. It has been shown that as a result the inelastic scattering cross section can be expressed in terms of the .

Card 1/2

L 44375-66

ACC NR: AP6020215

/

elastic scattering phase shifts. The results obtained by N. Austern and J. A. Blair
(Ann. Phys., 33, 15, 1965) in this connection have been refined and extended to a
nucleus with arbitrary spin and any approximation to the nonsphericity parameter.
Orig. art. has: 66 formulas. [Based on author' s abstract]   [NT]

SUB CODE: 20/ SUBM DATE: 05Jan66/ ORIG REF: 003/ OTH REF: 007/

hs

Card 2/2

ACC NR: AP7005441   SOURCE CODE: UR/0367/66/004/003/0482/0485

INOPIN, YE. V.; SHEBEKO, A. V.

ORG: none

"Inelastic Diffraction Scattering of Particles with Excitation
of Monopole Nuclear Oscillations"

Moscow; Yadernaya Fizika; September, 1966; pp 482-485

TOPIC TAGS: inelastic scattering, scattering cross section

Abstract: The method of complex angular momenta is used to
calculate the cross-sections for the inelastic diffraction
scattering of particles leading to the excitation of monopole
nuclear oscillations. A comparison of the formulae with pre-
vious calculations, based on the distorted wave method, made
it possible to determine the limits of the applicability of this
method. The distorted wave method can be applied under the
condition that the inelastic scattering cross-sections are
considerably smaller than the elastic scattering cross-section.
Orig. art. has: 17 formulas. [JPRS: 38,764]

SUB CODE: 20 / SUBM DATE: 04Dec65 / ORIG REF: 002 / OTH REF: 001

Card 1/1

BELOMESTNOV, K.A., mekhanik; INOSHEVSKIY, A.V., master goryachego peredela

Work has become easier. Metallurg 8 no.2:34 F '63. (MIRA 16:2)

1. Listoprokatnyy tsekh No.1 Severskogo metallurgicheskogo zavoda.
            (Rolling mills—Technological innovations)

INOSOV, V. L.

Inosov, V. L. - "Determination of the transitory process in the stabilized linear systems," Sbornik nauch.-tekhn. statey (Akad. nauk Ukr. SSR, In-t elektrotekhniki), Issue 2, 1948, p. 19-46, - Biblio: 14 items

SO: U-4355, 14 August 53, (Letopis 'Zhurnal 'nykh Statey, No. 15, 1949)

INOSOV, V. L.

Inosov, V. L. and Dashevskiy, L. N. - "Igniting of mercury valves by a dielectric," Sbornik nauch.-tekhn. statey (Akad. nauk Ukr. SSR, In-t elektrotekhniki), Issue 2, 1948, p. 122-35. - Bibliog: 5 items

SO: U-4355, 14 August 53, (Letopis 'Zhurnal 'nykh Statey, No. 15, 1949)

INOSOV, V. L.

Inosov, V. L. and Khrusheva, N. V. - "Phase meter for measuring the phase displacement angle between two voltages for audio frequencies having a low expenditure of power," Sbornik nauch.-tekhn. statey (Akad. nauk Ukr. SSR, In-t elektrotekhniki), Issue 2, 1948, p. 136-40

SO: U-4355, 14 August 53, (Letopis 'Zhurnal 'nykh Statey, No. 15, 1949)

INOSOV, V.L.

CAnd Tech Sci V.L. Inosov, "Analysis of Operationally Connected Reg lating Systems."

Avto i Tele, IX, 6, 1948.

INOSAV, V. L.

37308.   Stabilizatsiya reguliatorow dopolnitel'nym konturom. Ssbornik nauchn-takhn.
Statyey (Akad Nauk ukr. SSR, In-T Elektratekhniki). vyp. 3, 1949, s. 71-80

SO: Letopis' Zhurnal'nykh Statey, Vol. 7, 1949

INOSOV, V. L.

PA 153T30

USSR/Engineering - Generators, Synchro-   Sep 49
nous

"Compounding of High-Power Synchronous Gener-
ators With an Electromagnetic Voltage Corrector,"
V. L. Inosov, L. V. Tsukernik, Candidates Tech
Sci, Inst of Elec Eng, Acad Sci USSR, 8 pp

"Elektrichestvo" No 9

Discusses excitation system for synchronous
generators, combining stator current compounding
of the exciter with electromagnetic voltage cor-
rector which uses saturated transformers as non-
linear element in the measuring device and magnetic
amplifier for increasing the reaction on the

153T30

USSR/Engineering - Generators, Synchro-   Sep 49
nous (Contd)

excitation circuit. Voltage corrector is fed
from voltage transformers of the generator. De-
vice as a whole does not have any breaking con-
tacts or moving parts. It is reliable and easy
to operate and maintains constant voltage with
about 1% variation.

153T30

USSR/Electricity - Power Plants
Voltage Regulators   Apr 50

"Experimental Compounding Installation With an Elec-
tromagnetic Voltage Corrector on a 25,000-kilowatt
Turbogenerator," V. L. Inosov, Cand Tech Sci, V. Ye.
Krutikova, Engr, L. V. Tsukernik, Cand Tech Sci, 4 pp

"Elek Stants"   No 4

Describes installation and gives results of trials. De-
signed by Inst of Elec Eng, Acad Sci of Ukrainian SSR, and
fitted to T2-25-2 turbogenerator made by "Elektrosila"
Plant imeni S. M. Kirov. Concludes corrector is simple
and reliable, since it has no moving parts or elec-
tronic components. Should be widely used at USSR power
stations.

158T19

INOSOV, V. L.

USSR/Electricity - Generators

"Soviet System of Automatic Excitation Regulation in Synchronous Generators," V. L. Inosov, L. V. Taubernik, Engineers

"Rabochiy Energetik" No 1, pp 15-20

Describes construction and discusses performance of devices for compounding synchronous generators with electromagnetic corrector of voltage. System has following advantages: Necessary increase in excitation occurs in cases or large or small overloading of generator and voltage decreases; required voltage is maintained with ± 0.5% precision; device has no

USSR/Electricity - Generators (Contd)　　Jan 52

zone of insensitivity and functions at slightest deviations of current and voltage; simplicity and dependability due to absence of moving parts, contacts and electron-ionic devices.

INOSOV, V.L.

Frequency method for studying the stability of power systems and optimum characteristics of automatic voltage regulators for gene-rators used for long-distance transmission. Sbor.trud.Inst.ele-ktrotekh.AN URSR no.8:63-73 '52.   (MLRA 10:2)
   (Electric power distribution)   (Voltage regulators)

INOSOV, V.L.; KRUTIKOVA, V.Ye.; RUBINSKIY, V.Ye.

Stabilizing tranformer in the circuit of an electromagnetic voltage
corrector. Sbor.trud.Inst.elektrotekh.AN URSR no.8:127-138 '52.
(Voltage regulators) (Electric transformers) (MLRA 10:2)

INOSOV, V.L.; KHUTIKOVA, V.Ye.; TSUKERNIK, L.V.

Electromagnetic duplex voltage corrector. Sbor.trud.Inst.elektro-
tekh.AN URSR no.8:139-147 '52.   (MLRA 10:2)
        (Voltage regulators)

INOSOV, V.L.; MICHAYEV, O.K.

Note on Candidate in Technical Sciences V.L.Monin's article "Dimen-
sionless parameters of choke-coupled magnetic amplifiers." Sbor.
trud.Inst.elektrotekh. AN URSR no.10:133 '53.   (MIRA 8:5)
        (Magnetic amplifiers)

INOSOV, V. L.

3

② Elec
②, фКО,

B. T. R.
Vol. 3 No. 4
Apr. 1954
Electrical Engineering

4771* Calculation of Currents and Voltages in Exciter Circuits During Forcing and De-Excitation. (Russian.) V. L. Inosov and L. Y. Tsukernik. Elektrichestvo, 1953, no. 12, Dec., p. 20-26.
Discusses use of excitations with compounding devices and electromagnetic voltage correctors in high voltage generators. Diagrams, graphs, tables.

6-3-54

Inst. Electrotechnics, AS Ukr. SSR.

INOSOV, Viktor Leont'yevich; TSUKERNIK, Lev Veniaminovich; SAPAROVA, A.L.,
redaktor; LARIONOV, G.Ye., tekhnicheskiy redaktor.

[Compounding and electromagnetic voltage corrector in synchronous
generators] Kompaundirovanie i elektromagnitnyi korrektor napriazhe-
niia sinkhronnykh generatorov. Moskva, Gos. energeticheskoe izd-vo,
1954. 149 p.   (MLRA 8:1)
            (Electric generators)

INOSOV, V.L. (Kiyev)

Functional stability analysis of energy systems and requirements
for servomechanism controllers operated in such systems. Avtom. i
telem. 15 no.4:298-309 Jl-Ag '54.   (MLRA 7:11)
        (Electric controllers) (Servomechanisms)

Abs.- W-3148, 7 Feb 55

AID P - 1606

Subject   : USSR/Electricity

Card 1/1   Pub. 27 - 15/27

Authors   : Inosov, V. L, Doc. of Tech. Sci., Shestopalov, V. N.,
              Eng., and Rybinskiy, V. Ye., Eng.

Title   : Arrangement for the measurement of the coasting angle
              of a synchronous machine

Periodical : Elektrichestvo, 3, 70-72, Mr 1955

Abstract   : The authors designed an arrangement to measure the
              relative angles between the emf vectors of the
              generators at the various electric power stations of
              an electric power system. They describe the structure
              and functioning of the arrangement. Two diagrams

Institution: Electrical Engineering Institute of the Academy of
              Sciences of the USSR

Submitted : Ag 24, 1954

Subject   : USSR/Electricity   AID P - 1617

Card 1/2   Pub. 27 - 26/27

Authors   : Berkovich, M. A., Vinogradov, N. V., and Semenov,V.A.,
              Engineers, Moscow

Title   : V. L. Inosov and L. V. Tsukernik. Compounding and the
              Electromagnetic Voltage Regulator of Synchronous
              Generators, Gosenergoizdat, 1954, 152 pp.

Periodical : Elektrichestvo, 3, 86-87, Mr 1955

Abstract   : The authors summarize the table of contents of the
              book which describes various arrangements for
              compounding with the application of electromagnetic
              voltage regulation. These arrangements are used in
              the USSR as the basic methods of automatic regulation
              and field forcing of the excitation of synchronous
              generators. The authors point to the merits of the
              book as well as to several deficiencies, many of them
              consisting in poor proof-reading.

Elektrichestvo, 3, 86-87, Mr 1955   AID P - 1617

Card 2/2   Pub. 27 - 26/27

Institution: None

Submitted : No date

5707   THE COMPOUND-EXCITED SYNCHRONOUS MOTOR.   621.313.313

load torques at which the motor is pulled into synchronism sat-
isfy the conditions of light to medium starting, but the motors
may also be designed for heavy starting conditions. For equal

INOSOV, V.L.; KRUTIKOVA, V.Ye.

Investigating the conditions of synchronizing excited generators
operating out-of-step with the system. Sbor.trud. Inst.
elektrotekh.AN URSR no.13:84-97 '56.   (MLRA 9:10)

(Electric generators)

INOSOV, V.L.

Synchronous compound-wound motor and the theory of its operation.
Sbor.trud.Inst.elektrotekh. AN URSR no.14:93-116 '56. (MLRA 9:12)
(Electric motors, Synchronous)

INOSOV, V.L.; KRUTIKOVA, V.Ye.

Schematic diagram of electric tractor control with a singlephase cable. Nor.trud.Inst.elektrotekh. AN UkSR no.14:124-126 '56.
(Tractors)   (Remote control)   (MIRA 9:12)

NOSOV, P. L.

621.372.543   2.-2054

A Synchronous Filter-Oscillator for Frequency [-controlled] Equipment in Telemechanics. V. L. Inosov & A. M. Lachtin. (Avtomatika i Telemekhanika, Oct. 1956, Vol. 17, No. 10, pp. 936-940.) The operation of this relay filter circuit is based on comparison of the local-oscillator frequency with the input signal. The capture of the local-oscillator frequency by signals within a narrow band about the natural frequency of the oscillator results in an effective narrow-band filter. A suitable circuit is described.

SOV/112-58-1-455

Translation from: Referativnyy zhurnal, Elektrotekhnika, 1958, Nr 1, p 68 (USSR)

AUTHOR: Inosov, V. L.

TITLE: Compound Excited Synchronous Motor
   (Sinkhronnyy dvigatel' smeshannogo vozbuzhdeniya)

PERIODICAL: V sb.: Avtomatizatsiya proizv. protsessov v s. kh., Moscow,
   AN SSSR, 1956, pp 226-234

ABSTRACT: Today's synchronous motors are 1.5-1.7 times more expensive and
   heavier and have efficiency inferior to that of induction motors of the same
   kilowatt capacity. Presence of an exciter in synchronous motors reduces
   operating reliability. However, a synchronous motor with field winding con-
   nected as shown in the accompanying circuit diagram is free of the above dis-
   advantages. From experimental data and an analysis of motor operation, the
   following conclusions are drawn: (1) unity power factor can be kept within 0
   to 1.25 of rated load; (2) stalling torque is no lower than that of other motor
   types; (3) starting is simple; (4) compound-field motor efficiency is no lower

Card 1/2

SOV/112-58-1-455

Compound Excited Synchronous Motor

than that of normal synchronous machines and of wound-rotor induction motors for the same values of kilowatt capacity and rpm; (5) weight, size, and cost of the motor are approximately equal to those of a wound-rotor induction motor for the same values of kilowatt capacity and rpm; (6) the compound-field motor with selenium rectifiers is easier to manufacture within 4 to 50 kw (possibly to 100 kw).

B. Ya. G.

AVAILABLE: Library of Congress

1. Electric motors--Performance   2. Induction motors--Performance

Card 2/2

AUTHORS   Inosov,V.L. Doctor of Technical Sciences,Professor,   105-9-5/32
               Luchuk,A.M.,Engineer
TITLE   A Frequency Supervisory Control Device with Synchronous Filters.
               (Chastotnoye ustroystvo teleupravleniya s sinkhronnymi fil'tromi-
               -Russian)
PERIODICAL   Elektrichestvo, 1957,   Nr 9, pp 23 - 27 (U.S.S.R.)

ABSTRACT   A remote-control device with a frequency code was worked out at
               the Faculty for Electrification of the Ukrainian Agricultural Aca-
               demy. It is of low capacity and can be used for the control of ob-
               jects spread over a large area. It consists of single-type blocks
               which in themselves are combined to an audio-frequency generator
               of low power and a narrow-band filter which,however, is not based
               on resonance phenomena but on the synchronism of the signal fre-
               quency and on that of the local generator. This filter is described
               in detail by the authors in A,1956,Nr 1o. The new plant was in-
               stalled in the agricultural energy system Korsun' - Shevchenko
               in July 1956 and has been working without disturbances until now.
               After this Luchuk A.M., developed a synchronous filter with cry-
               stal triodes. The description of a filter generator with crystal
               triodes is given and the problem of the possible capacity of in-
               stallations with such a filter is investigated. The principle
               of this filter is as follows: the executing relay of the filter
               reacts only if the frequency of the arriving signal coincides with
Card 1/2   that of the local generator. As, however, such a coincidence is

A Frequency Supervisory Control Device with Synchronous 105-9-5/32
Filters.

little probable, the phenomenon of taking account of the local-
generator frequency by the frequency of the arriving signal in
those cases where their difference is small, is utilized. There-
fore the zone of response is determined by the zone of capturing.
The apparatuses described here can easily be produced according
to the newest process for the production of radio apparatuses.
There are 2 figures and 4 Slavic references.

ASSOCIATION   Ukrainian Agricultural Academy.
               (Ukrainskaya sel'skokhozyaystvennaya akademiya).
SUBMITTED   April, 28,1957.
AVAILABLE   Library of Congress.
Card 2/2

AUTHOR: INOSOV,V.L.   PA - 2566
TITLE: The Answer to A.A.Pervozvanskiy's Notes. (Otvet na zameohaniya
            A.A.Pervozvanskogo, Russian)
PERIODICAL: Avtomatika i Telemekhanika, 1957, Vol 18, Nr 3, pp 284 - 284
            (U.S.S.R.)
            Received: 4 / 1957   Reviewed: 6 / 1957

ABSTRACT: This is the author's reply to Pervozvanskiy's (Avtomatika i
            Telemekhanika, 1957, Vol 18, Nr 3, pp 282 - 283) criticism
            of his work in Avtomatika i Telemekhanika 1954, Vol 15, Nr 4:

            1) The asymmetry of the coefficient c_{ik} has been taken into
            account, though not in the manner as was done by Bulgakov in
            his book "Oscillations". The method suggested is not affected
            here. The suggested simple conditions cannot be extended to
            closed control systems.

            2) It is shown that the system is passive and that the term
            investigated can be replaced by a passive term with positive
            dissipation function.

            3) It is stated that the logic of this remark is incomprehen-
            sible. The parameters determining stability are contained
            in the equations derived,

Card 1/2

PA - 2566

The Answer to A.A.Pervozvanskiy's Notes.

Summarizing, the author rejects the statement that his method is based upon erroneous theories and leads to technically unrational conclusions.

ASSOCIATION: Not given
PRESENTED BY:
SUBMITTED:
AVAILABLE: Library of Congress.

Card 2/2

INOSOV, V.L., doktor tekhn. nauk, prof.; KRUTIKOVA, V.Ye., kand. tekhn. nauk
(Kiyev).

Investigating the synchronization of compound-wound motors. Elek-
trichestvo no.2:56-59 F '58.   (MIRA 11:2)
                    (Electric motors, Synchronous)

KAMENEVA, Vera Aleksandrovna; INOSOV, V.L., red.; BORUNOV, N.I.,
    tekhn.red.

    Pavel Petrovich Kopniaev. Moskva, Gos.energ.izd-vo, 1959.
    94 p.   (MIRA 13:1)
        (Kopniaev, Pavel Petrovich, 1867-1932)

Fenosov, V.L.

C, 9200

AUTHOR: Inosov, V. L.

TITLE: Comparison of frequency signal selection methods

TEXT: A comparison is presented of the following signal-selection
method for frequency systems: 1) The resonance method, 2) the syn-
chronous detection method, 3) the self-correlation method, 4) the
method of synchronous storing. It is shown that these methods are
in general equivalent. The best method proves to be the method
of synchronous detection owing to the obtainable low Q-value of
the filters. The method of synchronous storing is not selective as
regards the higher-order odd harmonics, however, the sensitivity
decreases proportionally to the number of the order of the harmo-
nic. The self-correlation method is useful only for separation of

Card 1/2

Comparison of frequency ...

S/194/61/000/012/055/097
D256/D303

a single signal on a background of stochastic disturbance. The
synchronous methods of detection require synchronization of the lo-
cal oscillator with the signal, performed by frequency capturing
or self-tuning of the oscillator. The local oscillator is used at
the same time for reply signalling. /Abstractor's note: Complete
translation._7

Card 2/2

I N o S e v, V. L.

report to be presented at the 1st Intl Congress of the Intl Federation of Automatic
Control, 27 Jun-5 Jul 1960, Moscow, USSR.

INOSOV, Viktor Leont'yevich; KRUTIKOVA, Valentina Yevgen'yevna;
KAMENEVA, Vera Aleksandrovna; POLYANSKIY, N., red.;
GORKAVENKO, L., tekhn.red.

[Synchronous motors with excitation from semiconductor
rectifiers] Sinkhronnye dvigateli s vozbuzhdeniem ot polu-
provodnikovykh vypriamitelei. Kiev, Gos. izd-vo tekhn.lit-ry
USSR, 1960. 125 p.   (MIRA 14:2)
          (Electric motors, Induction)

INOSOV, V.L.; LUTSKIY, V.A.

[Code-pulse telemetering system for the centralized control of gas
mains] Kodoimpul'snaia sistema teleizmereniia dlia dispetcherizatsii
magistral'nykh gazoprovodov. Moskva, 1960. 11 p. (International
Federation of Automatic Control, 1st International Congress, Moscow,
1960. Doklady, no.39).   (MIRA 14:8)
        (Telemetering)   (Gas distribution)

S/102/60/000/005/008/008
D251/D305

AUTHORS: Inosov, V. L. and Luts'kyy, V. O. (Kiyev)

TITLE: Code impulse telemetering systems for dispatcher ser-
               vice of gas mains (Short notes from the speech at
               the First International Congress of IFAC)

PERIODICAL: Avtomatyka, no. 5, 1960, 78-80

TEXT: The author describes the work done in the Instytut avtoma-
tyky Derzhplanu URSR (Institute of Automation of the State Plan of
the UkrSSR) to construct a suitable telemetering system for dis-
patcher service of gas mains. A code-disc system based on manome-
ter and vibrator sensors was found to be suitable, and germanium
photodiodes $\phi\Pi$-1 or $\phi\Pi$-2 (FD-1 or FD-2) used as indicators. The
system was based on the following technical data: 1) The system
employed the control and registration at a central dispatcher
point of the data collected at the control points; 2) the maximum
number of control points was 30, the maximum volume of data from
each point-8 measurements and 1 emergency signal; 3) the error of

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Code impulse telemetering ...   S/102/60/000/005/008/008
                                       D251/D305

the telemetering system was ± 0.5%; 4) the time for testing and
registration at the control-point of 1 parameter was 0.2 - 1 sec,
depending on the speed of the teleprinter; 5) the width of the
frequency band for high-frequency telephone channel working was
300 c/s, for a double pipeline - 600 c/s; the telemetering was
contactless. Initial tests on the Dashava-Kiyev pipeline gave po-
sitive results.

SUBMITTED: May 30, 1960

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35324

S/103/62/023/002/012/015
D230/D301

9,3277 (1524)
7,8200 (1482)

AUTHORS: Inosov, V.L., and Skirta, B.K. (Kiyev)

TITLE: Evaluating the combination frequency level and the
permissible fluctuation level of frequency code tele-
mechanics signals sent simultaneously

PERIODICAL: Avtomatika i telemekhanika, v. 23, no. 2, 1962,
214 - 221

TEXT: Evaluation of component combination levels is performed ana-
lytically and the possibility of applying the simultaneous frequen-
cy samples is examined as a function of the coupling channel para-
meters. The engineering aspect is largely governed by the permissi-
ble limits of the variation of attenuation in the coupling channel.
The combination frequencies can, in certain unfavorable conditions,
exceed the operating level of frequency selectors; this leads to
spurious operation of the device. Analytical evaluation of the com-
bination frequency levels is presented for the most frequent trans-
mission case of two sinusoidal signals of equal amplitude. The beat

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Evaluating the combination ...   S/103/62/023/002/012/015
                                        D230/D301

analysis of these two signals results in the following simple rule:
The ratio between the largest combination frequency level and the
signal level at the output of a non-linear, double frequency trans-
mission section is equal to the amplitude ratio of the largest
harmonic curve, and being the maximum output beat envelope, to the
amplitude of the fundamental of this curve. For fixed levels of com-
bination frequencies the permissible transmission range of teleme-
chanics signals, applying simultaneous frequencies, can be calcula-
ted simply. In the experimental work, results were obtained by us-
ing a frequency spectrum analyzer at the output of typical non-li-
near sections: These results are tabulated. There are 7 figures, 4
tables and 1 non-Soviet-bloc references.

SUBMITTED: September 27, 1961

Card 2/2

KOROBKO, M.I., kand. tekhn. nauk, red.; INOSOV, V.L., red.;
OLEFIR, F.F., red.; REZNIK, M.G., red.; PROHUK, V.I.,
red.; SHUMILOV, K.A., red.; PAVLENKO, V.N., red.

[Complete automation in steelmaking] Kompleksnaia avto-
matizatsiia proizvodstva stali. Kiev, In-t tekhn. in-
formatsii, 1963. 198 p.   (MIRA 18:6)

1. Ukraine. Gosudarstvennaya planovaya komissiya. Institut
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L 38180-65   EWT(d)/FEC(k)-2/EED-2/EWP(i)   Pd-4/Pd-4/Pd-4/Pad-4/Pg-4/Pa-4/
SJ-4/PI-4   IJP(c)   BB/GG
AM5004018   BOOK EXPLOITATION

Zarenin, YUriy Henrikhovich (Candidate of Technical Sciences);
    Inosov, Viktor Leont'yevich (Doctor of Technical Sciences)

Codes in technology (Kody v tekhnike). Kiev, Vyd-vo "Tekhnika",
    1964. 0250 p. illus., biblio. Errata slip inserted. 540 copies
    printed.
TOPIC TAGS: data processing, information processing, digital com-
    puter, information transfer, coding method, transfer reliabil-
    ity, error detecting code, error correcting code, nonexcess
    binary code, discrete code, analog code, telemetry code, code

queue, information transfer, coding methods, transfer reliability, error detecting code, error correcting code, nonexcess binary code, discrete code, analog code, telemetry code, code conversion.

PURPOSE AND COVERAGE: This book is intended for use by engineers working in the field of information processing, telecommunications, telemetry, and computer design. It may also be used by scientists in related fields and students in advanced courses on these subjects. The book deals with coding and codes in information theory, as applied to information processing and transfer. It emphasizes those encoders that speed up and improve information transfer. Available published data on coding theory

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are cited. Chapters I to III deal with the fundamentals of coding theory. The problems, methods, and forms of coding which have been adopted in communications, telemechanics, and computer engineering are described in the remaining chapters.

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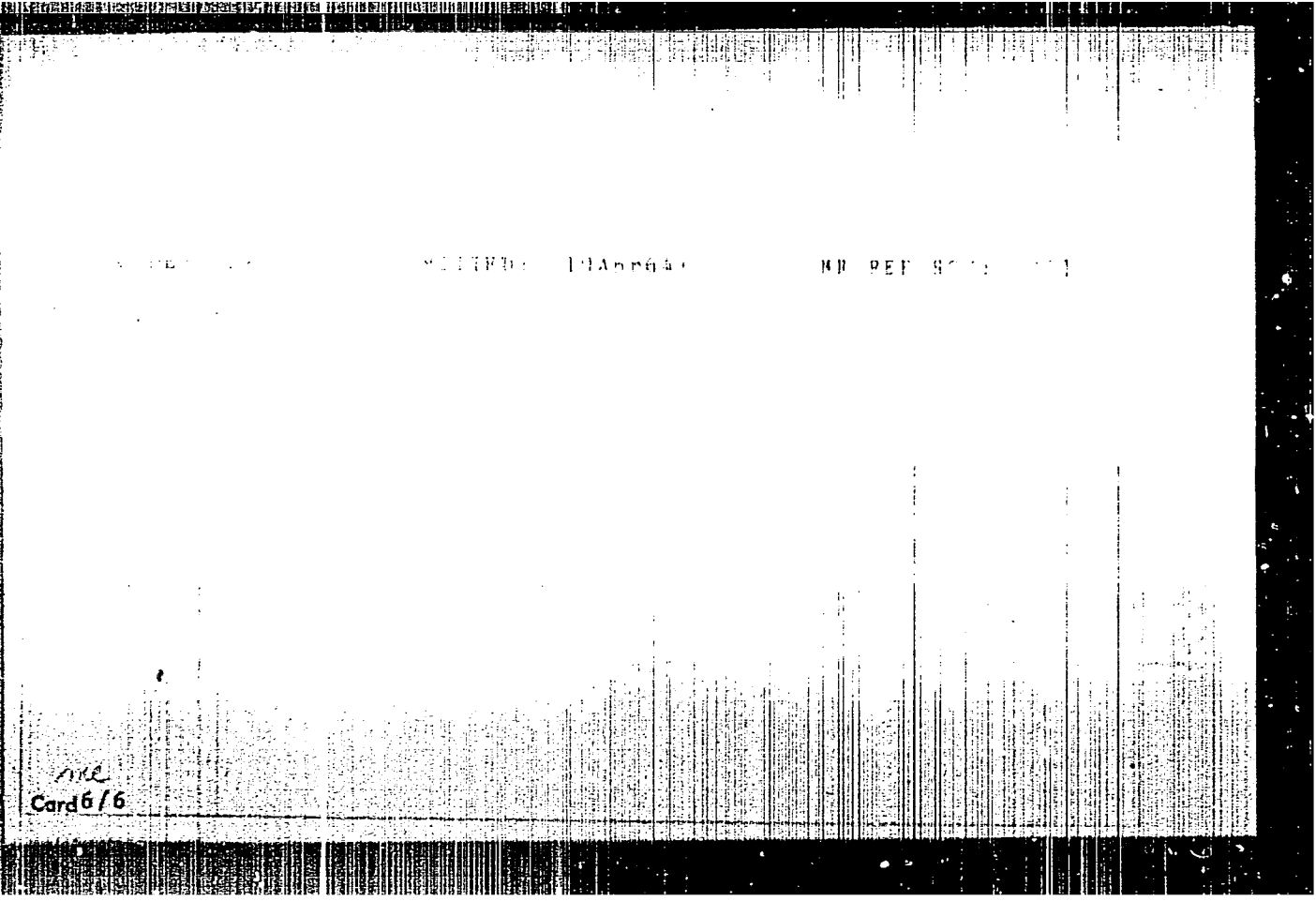
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