

EFENDIZADE, A.A.; LISTENGARTEN, B.A.

Static characteristics of an asynchronous electric drive with  
nonsymmetric supply voltage. Izv. AN Azerb. SSR. Ser. fiz.-mat.  
i tekhn. nauk no.5:101-107 '63. (MIRA 17:3)

EFENDIZADE, A.A.; LISTENGARTEN, B.A.

Investigation of the performance of an electric drill fed by a  
system of two conductor-pipes. Izv. vys. ucheb. zav.; neft' i  
gaz 6 no.10:93-96 '63. (MIRA 17:3)

1. Azerbaydzhanskiy institut nefti i khimii im. M.Azizbekova i  
Energeticheskiy institut im. I.G.Yes'mana.

EFENDIZADE, A.A.; LISTENGARTEN, B.A.; FRADKIN, A.B.

Investigating the operation of an electric drill with  
sweep-frequency voltage power supply. Neft.khoz. 41 no. 1:  
23-28 Ja '63. (MIRA 17:7)

KADYMOV, Ya.B.; LISTENGARTEN, B.A.

Calculating the elongation of rods in the period of initial deformation. Neft. khoz. 42 no.3:38-41 Mr '64. (MIRA 17:7)

ACCESSION NR: AP4035073

S/0103/64/025/004/0484/0491

AUTHOR: Kady\*mov, Ya. B. (Baku); Listengarten, B. A. (Baku)

TITLE: Approximate method of calculating transient processes in automatic-control systems containing distributed-parameter elements

SOURCE: Avtomatika i telemekhanika, v. 25, no. 4, 1964, 484-491

TOPIC TAGS: automatic control, automatic control transient process, distributed parameter automatic control, sampled data automatic control

ABSTRACT: Transient processes in electric-drive systems and in automatic-control systems are theoretically studied by regarding the distributed-parameter elements of such systems as sampled-data closed-loop systems. An equation describing the motion of a long-shaft electric drive is converted into a discrete equation by establishing a relation between the operator  $p$  and the discrete time period between two successive values of

ACCESSION NR: AP4035073

the independent variable. T is set at  $T = \frac{2\tau}{\lambda}$ , where  $\tau$  is the time of wave propagation and  $\lambda$  is any integer. Formulas suitable for numerical computations (on an adding machine or a computer) are developed. The error is lower for higher  $\lambda$ . Orig. art. has: 40 formulas and 1 table.

ASSOCIATION: none

SUBMITTED: 17Nov62

DATE ACQ: 26May64

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SUB CODE: IE

NO REF SOV: 004

OTHER: 000

Card 2/2

LISTENGARTEN, B.M.; TER-OGANESOVA, A.G.

Determining reservoir rock permeability on the basis of the  
study of water influx of wells. Azerb.neft.khoz. 35 no.5:6-8  
My '56. (MLRA 9:10)

(Permeability) (Oil field flooding)

AMBARTSUMYAN, A.P.; BRISK, M.I.; LISTENGARTEN, B.M.; PIRVERDYAN, A.M.

Effect of petroleum viscosity on the effectiveness of flooding.  
Azerb.neft.khoz. 35 no.7:18-22 J1 '56. (MLRA 9:12)  
(Oil field flooding)

AMBARTSUMYAN, A.P.; BRISK, M.I.; LISTENGARTEN, B.M.; PIRVERDYAN, A.M.

Effect of petroleum viscosity on the effectiveness of water  
flooding. Azerb.neft.khoz. 35 no.8:19-22 Ag '56. (MLRA 9:10)

(Oil field flooding)



*LISTENGARTEN, B.M.*

**EIVAZOV, E.G.; OVNATANOV, S.T.; LISTENGARTEN, B.M.**

Book by A.G. Aliev, L.V. Minzberg, L.A. Nikolaeva ("Collecting properties of Kirmaki series rocks of the Apsheron Peninsula").

Reviewed by E.G. Eivazov, S.T. Ovnatanov, B.M. Listengarten).

Azerb.neft.khoz. 36 no.7:48 J1 '57.

(MIRA 10:10)

(Apsheron Peninsula--Petroleum geology)

(Aliev, A.G.) (Minzberg, L.V.) (Nikolaeva, L.A.)

**MELIK-ASLANOV, L.S.; LISTENGARTEN, B.M.; AMBARTSUMYAN, A.P.**

Consolidating areas of exploitation and widening filters used in fields of the Kirmaki series. Azerb. neft. khoz. 37 no.5:24-26 My '58.  
(MIRA 11:8)

(Apshehon Peninsula--Filters and filtration)

AKSEL'ROD, S.M.; GADZHI-KASIMOV, A.S.; LISTENGARTEN, B.M.; PUTKARADZE, L.A.

Using the induced sodium activity method for determining the water-oil contact in the Balakhan'-Sabunchi-Ramany field (Oil Field Administration of the Lenin Petroleum Trust). Azerb.neft.khoz.  
38 no.11:11-12 N '59. (MIRA 13:5)  
(Apshehon Peninsula--Oil well logging, Radiation)

ZEYNALLY, M. I.; ~~LISTENGARTEN, B. M.~~; AMBARTSUMYAN, A. P.; GUKASOVA, Ye. K.

Effectiveness of production methods used in the exploitation of  
the Kirmaki series in fields of the Oil Field Administration of  
the Lenin Petroleum Trust. Azerb. neft. khoz. 39 no. 7:20-22 J1  
'60. (MIRA 13:10)  
(Caucasus, Northern--Oil fields--Production methods)

ABRAMYAN, S.L.; AKSEL'ROD, S.M.; ALEKSEYEV, F.A.; AL'TSHEL', S.A. [deceased].  
BESPALOV, D.F.; GADZHI-KASIMOV, A.S.; ZHILIN, K.A.; LISTENGARTEN, B.M.;  
ODINOKOV, V.P.; PUTKARADZE, L.A.; SHIMELEVICH, Yu.S.

Neutron-neutron pulse method for investigating wells and results of  
its use in the Balakhan'-Sabunchi-Ramany field. Azerb. neft. khoz.  
39 no.11:9-13 N '60. (MIRA 13:12)  
(Apscheron Peninsula—Oil well logging, Radiation)

LISTENGARTEN, Boris Moiseyevich; AKSEL'ROD, S.M., red.; SHTEYNCEL',  
A.S., red.; MIRKISHEVA, S., tekhn. red.

[Practice of the Oil Field Administration of the Lenin  
Petroleum Trust in using radioactive methods in oil-field  
geology] Radioaktivnye metody v neftepromyslovoi geologii;  
opyt NPU "Leninest". Baku, Azerbaidzhanskoe gos. izd-vo,  
1961. 150 p. (Azerbaijan--Oil well logging, Radiation)  
(MIRA 15:2)

LISTENGARTEN, B.M.

Distortion of gamma-ray logging curves resulting from lost  
circulation. Azerb. neft. khoz. 40 no.1:11-12 Ja '61.

(MIRA 14:8)

(Apsheron Peninsula--Oil well logging, Radiation)  
(Oil well drilling fluids)

ALIBEKOV, B.I.; LISTENGARTEN, B.M.; SAPOZHOK, V.M.; AMIROV, A.D.,  
spets. red.; RASHEVSKAYA, T.A., red.

[Petroleum production by the open method; based on a  
study of the Kirmaku Oil Field] Dobycha nefti otkrytym  
sposobom; na primere mestorozhdeniia Kirmaku. Baku,  
Azerneshr, 1964. 122 p. (MIRA 17:12)



SAMEDOV, F.I.; LISTENGARTEN, B.M.; SULTANOV, Ch.A.

Coefficient of the gas discharge of gas and gas-condensate  
pools in Azerbaijan. Izv. AN Azerb. SSR. Ser. geol-geog.  
nauk no.4:67-73 '64. (MIRA 17:12)

SAMEDOV, F.I.; ANDRIANOV, S.I.; LISTENGARTEN, B.M.; SULTANOV, Ch.A.

Effect of well flooding on the ultimate gas-recovery factor in  
the upper sector of the Sub-Kirmaki region of Zyrya. Gaz. prom.  
9 no.1:5-8 '64. (MIRA 17:12)

ERLIKH, G.M.; VARTANOVA, N.A.; LISTGARTEN, B.M.

Field tests of high-strength drill pipes and casing. Burenie  
no.11:28-29 '64. (MIRA 10:5)

1. AzNIIburneft' i Azerbaydzhanskiy nauchno-issledovatel'skiy  
institut neftyanogo mashinostroyeniya.

GADZHI-KASUMOV, A.S.; KREYNIN, Ye.F.; ILSTENGARTEN, B.M.; EYVAZOV, E.G.

Decrease in the specific gravity of petroleum in the process of oil  
field development. Geol. nefti i gaza 9 no.4:57-59 Ap '65. (MIRA 18:8)

1. Neftepromyslovoye upravleniye Kirovneft'.

SAMEDOV, F.I.; LISTENGARTEN, B.M.; SULTANOV, Ch.A.

Recovery factor of gas-condensate oil pool in horizons VII  
of the Karadag area. Izv. AN Azerb. SSR. Ser. geol.-geog.  
nauk no.3:72-77 '65. (MIRA 18:9)

LISTENGARTEN, B.M.; SOZINA, V.S.; KONDRUSHKIN, Yu.M.

Recovery factor of the oil pool of the Sub-Kirmaki series in  
the eastern part of the Ramany area in the Balakhany-  
Sabunchi-Ramany field. Neft. khoz. 43 no.8:18-22 Ag '65.  
(MIRA 18:12)

LISTENGARTEN, G.A.

Erythromyelosis (Di Guglielmo's syndrome) as one of the rare forms  
of acute leukemia. Trudy TSIU 62:346-356 '63.

(MIRA 18:3)

1. III kafedra terapii (zav. chlen-korrespondent AMN SSSR prof.  
I.A.Kassirskiy) Tsentral'nogo instituta usovershenstvovaniya  
vrachey.

LISTENGARTEN, G.A.

Clinical forms and hematological variants of erythromyelosis.  
Probl.gemat.i perel.krovi no.7:36-41 '61. (MIRA 14:9)

1. Iz kafedry terapii (zav. - chlen-korrespondent AMN SSSR  
prof. I.A. Kassirskiy) Tsentral'nogo instituta usovershenst-  
vovaniya vrachey. (HEMOPOIETIC SYSTEM--DISEASES)



LISTENGARTEN, G.A.

Current views on erythromyelosis (Di Guglielmo's syndrome);  
review of the literature. Probl.gemat.i perel.krovi no.2:  
28-33 '62. (MIRA 15:1)

1. Iz 3-y kafedry terapii (zav. - chlen-korrespondent AMN SSSR  
prof. I.A. Kassirskiy) Tsentral'nogo instituta usovershenstvo-  
vaniya vrachey.

(HEMOPOIETIC SYSTEM--DISEASES)

LISTENGARTEN, G.A.

Hemolytic syndrome in erythromyelosis. Vop.biofiz., biokhim. i  
pat.erit. no.2:270-279 '61. (MIRA 16:3)

1. Iz III kafedry terapii (zav. - chlen-korrespondent AMN SSSR  
prof. I.A. Kassirskiy) Tsentral'nogo instituta usovershenstvo-  
vaniya vrachey (dir. - M.D. Kovrigina).  
(HEMOPOIETIC SYSTEM - DISEASES)

LISTENGARTEN, G.A.

Diagnosis and differential diagnosis of erythromyelosis (Di  
Guglielmo's syndrome). Probl. gemat. i perel. krovi no.10:  
23-27 '62. (MIRA 17:12)

1. Iz 3-y kafedry terapii (zav. - chlen-korrespondent AMN SSSR  
prof. I.A. Kassirskiy) Tsentral'nogo instituta usovershenstvovaniya  
vrachey (direktor M.D. Kovrigina).

BAGIYEV, A.D.; LISTENGARTEN, L.B.; SOZINA, V.S.

Recent data on the oil potential of the Surakhany series in the  
Balakhan'-Sabunchi-Ramany field. Azerb. neft. khoz. 40 no.10:  
4-6 0 '61. (MIRA 15:3)  
(Apsheeron Peninsula--Petroleum geology)

LISTENGARTEN, L.B.

Designing the shaft of a sinking centrifugal electric pump.  
Izv. vys. ucheb. zav.; neft' i gaz 7 no.7:76 '64.

(MIRA 17:9)

1. Azerbaydzhanskiy nauchno-issledovatel'skiy institut po dobyche  
nefti.

ALIBEKOV, B.I.; LISTENGARTEN, L.B.; PIRVERDYAN, A.M.

Pouring degassed liquid to combat the harmful effect of gas  
on the operation of a sinking centrifugal electric pump.  
Izv. vys. ucheb. zav.; neft' i gaz 6 no.8:51-55 '63.

(MIRA 17:6)

1. Azerbaydzhanskiy institut nefti i khimii imeni M. Azizbekova,  
Azerbaydzhanskiy nauchno-issledovatel'skiy institut po dobyche  
nefti i neftepromyslovoye upravleniye "Leninneft'."

ALIBEKOV, B.I.; LISTENGARTEN, L.B.; CHUBANOV, O.V.

Experimental investigation of a sinking electrocentrifugal pump  
operating on air-water mixtures. Izv.vys.uceb.zav.; neft' i gaz  
6 no.11:117-120 '63. (MIRA 17:9)

L 26461-66

ACC NR: AP6017380

SOURCE CODE: UR/0230/65/000/011/0017/0019

AUTHOR: Abdulragimov, A. I. (Engineer); Vlasov, S. N. (Engineer); Pirverdyan, A. M. (Doctor of technical sciences); Shvarts, Ya. A. (Doctor of technical sciences); Listengarten, L. B. (Engineer); Yakubov, Yu. G. (Engineer)

ORG: / Abdulragimov, Vlasov / Baktunnel'stroy; / Pirverdyan, Shvarts, Listengarten / AzNIL IN; / Yakubov / Bakmetroproyekt

19  
B

TITLE: Construction of tunnels in soils with high hydrostatic pressure

SOURCE: Transportnoye stroitel'stvo, no. 11, 1965, 17-19

TOPIC TAGS: railway tunnel, construction, hydrostatic pressure

ABSTRACT: Part of the Baku subway system had to be passed through fine-grained sandy loam with underground water pressure of over 4 atm. Experiments showed that continuous out-pumping could lower the water table somewhat in the area of the operations. After analysing several plans, it was decided that 43 wells would be dug, 27 in an outer ring, 16 in an inner ring, to lower the water pressure in the work area; as the tunnel was dug under compressed air, the wells were systematically checked and freed of filtered air. The pressure in the work tunnels was 1.5-1.7 atm. Orig. art. has: 4 figures. [JPRS]

SUB CODE: 13 / SUBM DATE: none

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PB



ABDULRAGIMOV, A.I., inzh.; VLASOV, S.N., inzh.; PIRVERDYAN, A.M.,  
doktor tekhn. nauk; SHVARTS, Ya.A., doktor tekhn. nauk;  
LISTENGARTEN, L.B., inzh.; YAKUBOV, Yu.G., inzh.

Practices in building tunnels in soil with great hydrostatic  
pressure. Transp. stroi. 15 no.11:17-19 N '65.

(MIRA 18:11)

1. Baktonnel'stroy (for Abdulragimov, Vlasov). 2. Azerbaydzhanskiy  
nauchno-issledovatel'skiy institut po dobyche nefi (for Pirverdyan,  
Shvarts, Listengarten). 3. Bakmetroproyekt (for Yakubov).

LISTENGARTEN, M. A.

USSR/Nuclear Physics - Internal Conversion - Jan 52

"Internal Conversion of Magnetic Dipole Radiation on the  $L_1$ -Shell Taking Into Account the Finite Size of the Nucleus," I. A. Sliv, M. A. Listengarten, Leningrad Phys-Tech Inst, Acad Sci USSR "Zhur Ekaper 1 Teoret Fiz" Vol XXII, No 1, pp 29-33

Calculates the coeff of conversion of magnetic dipole radiation of the  $L_1$ -shell taking into account the finite size of the nucleus. Presents results for  $Z = 83$  graphically. Finds that the

USSR/Nuclear Physics - Internal Conversion (Contd) Jan 52

ratio of the coeffs of conversion,  $B_K^{(1)}/B_{L_1}^{(1)}$ , approximately equals 8.5. Analyzes the 3 gamma lines of RaC. Submitted 29 Mar 51.

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INTERNAL CONVERSION IN  $L_1$ ,  $L_2$ ,  $L_3$ , AND  $M_1$  AND  $M_2$  SUBSHELLS OF  $\text{ThC}(\text{B}^{214})$ . E. M. Kriyan & G. D. Latyshev, M. A. Listengarten, L. A. Ostretsov, and A. G. Sergeev. (Gosstroy Izdatpril Inst. of Transmutations). Invent. Akad. Nauk S.S.S.R. Ser. Fiz. 23, 363-6(1956) Mar. (in Russian)

Conversion coefficients in  $L_1$ ,  $L_2$ ,  $L_3$ , and  $M_1$ ,  $M_2$  subshells of the  $\text{ThC}(\text{B}^{214})$  nuclear  $\gamma$  transition at 239.9 kev were investigated, and measurements were made on the "ketron" spectrometer. To obtain more accurate results, an attempt was made to achieve complete separation of the corresponding conversion lines. A comparison of experimentally obtained rates  $L_1$ ,  $L_2$ ,  $L_3$  with the theoretical ratios for  $\gamma$  transitions with  $h\nu = 239.9$  kev in  $\text{ThC}(\text{B}^{214})$  indicated that it is a purely dipole transition. The results showed the effectiveness of the method in determination of the multiplicity of  $\gamma$  radiations by the magnitudes of the  $L_1$ ,  $L_2$ ,  $L_3$  ratio. (R.V.J.)

*LISTENGARTEN, M. A.*

**KRISYUK, E.M.; VITMAN, A.D.; VOROB'YEV, V.D.; VOROB'YEV, I.V.; IL'IN, K.I.;  
LATYSHEV, G.D.; LISTENGARTEN, M.A.; SERGEYEV, A.G.**

**Internal conversion in the  $Pb^{208}$  atom in 2615 kev transitions.  
Izv.AN SSSR.Ser.fiz.20 no.8:883-890 Ag '56. (MLRA 9:12)**

**1. Kafedra fiziki Leningradskogo instituta inzhenerov zheleznodorozhnogo transporta imeni V.N.Obratsova.  
(Lead--Isotopes)**

NOV/48-22-7-1/26

AUTHOR: Listengarten, N. A.

TITLE: Internal Conversion (Vnutrennyaya konversiya)

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya fizicheskaya, 1958,  
Vol. 22, Nr 7, pp. 759-774 (USSR)

ABSTRACT: The author investigates to what extent the theory of internal conversion (IC) agrees with experiment, and how far theory and experiment have to be defined more precisely. In order to determine under what conditions the corrections to the internal conversion coefficients (ICC) can arise that are due to the details of nuclear structure, formula (1) for the ICC is first discussed. From this investigation the following basic conclusion can be drawn: an appreciable influence of nuclear structure upon the ICC can occur only if the corresponding  $\gamma$ -transition is very highly forbidden. For transitions with a normal lifetime, all earlier deductions made in reference 4 concerning the independence of the ICC from nuclear structure remain valid (in the range of 1-2%). The attempts encountered in literature to attribute the differences between experimental and theoretical values of the ICC to the influence of nuclear structure, regardless whether the transi-

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## Internal Conversion

NOV/48-22-7-1/26

tion under consideration being forbidden or permitted, are wrong. - The physical character of such an internal nuclear conversion is completely analogous to that of the  $0 - 0$  transitions: radiation transition is forbidden whereas the conversion transition taking place at the expense of the electron entering the interior of the nucleus is possible. Under these conditions details of nuclear structure highly influence the probability of a conversion transition. - Structure corrections of 15 - 20 % to the ICC values are to be expected for a forbiddenness not below  $10^3$ . Apparently structure correction will be the more considerable the stronger the  $\gamma$ -transition is (the other conditions being equal). - With diminishing  $Z$  the role of the nuclear zone in the ICC becomes smaller. Therefore the order of  $\gamma$ -radiation forbiddenness required for an appreciable effect of the nuclear structure must grow rapidly. - The structure correction may vary greatly for the neighboring nuclei, and even for the various transitions in one and the same nucleus. - For the occurrence of structure corrections to the ICC, the exclusion of  $\gamma$ -radiation is by itself not sufficient. It is necessary that this exclusion be of no (or of much less) influence upon the radiation-free transition due to the nuclear

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## Internal Conversion

SOV/43-22-7-1/26

zone. - Furthermore it is shown that the influence of nuclear structure upon the ICC is on principle possible in ranges exceeding 1,5 - 2 %. However, its existence has not been established yet. - In computing the ICC, the method of allowance for the screening of the nuclear charge due to the atomic electrons was obtained as an important physical approximation. For heavy atoms the statistical model is a good approximation, giving extremely small errors. For light nuclei ( $Z \leq 30$ ) with low energies  $E \leq 50$  keV the errors are 10-15 %. Next it is investigated how far the theoretical and experimental ICC values agree for some groups of nuclei. It is stated that the ratio of M/L depends very slightly on the energy, on the nuclear charge, and the multipole order, and that it is about 0,3 in all cases. Finally, after having stated that in general ICC measurements are very inaccurate and contradictory in a number of cases, the author acknowledges L. A. Sliv who made available to him some results concerning ICC calculations for the L shell even before publication, and discussed with him the paper under review. There are 7 figures, 5 tables, and 104 references, 20 of which are Soviet.

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SOV/48-23-2-14/20

21(7)

AUTHORS:

Listengarten, M. A., Band, I. M.

TITLE:

On the Influence Exercised by Shielding Upon the Probability of EO Conversion on K and L Shells in the Case of Low Energies (O vliyanii ekranirovaniya na veroyatnost' EO-konversii na K- i L-obolochkakh pri malykh energiyakh)

PERIODICAL:

Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 2, pp 235-237 (USSR)

ABSTRACT:

On the one hand, EO conversion is closely connected with the nuclear structure, on the other hand it was shown that this conversion is possible not only in  $0 \rightarrow 0$  transitions but also in transitions between any levels with equal spin and parity (Refs 1-3). For the probability of the occurrence of EO conversion on K-,  $L_I$ ,  $L_{II}$  shells the expression

$$W = \Omega(k, Z) \cdot q^Z \text{ with}$$

$$\Omega(k, Z) = \frac{\alpha^2 \pi}{9} a_i^2 a_f^2 R_0^4$$

is derived from a general formula for the probability of EO conversion ( $\alpha$  = fine-structure constant,  $a_i$  and  $a_f$  -

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amplitudes of the wave function of the electron,  $q$  - nuclear



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On the Influence Exercised by Shielding Upon the Probability of E0 Conversion on K and L Shells in the Case of Low Energies

part of the matrix element). Taking into account the finite nuclear dimensions and the shielding, the authors computed the wave function of the electron, amplitudes  $a_i$  and  $a_f$  as well as the function for conversion on K and L shells up to transition energies 5 keV above the threshold value. For the purpose of computing the wave function of the discrete and continuous spectrum the authors used the nuclear model of an equally charged ball and the statistical atomic model of Thoma-Fermi-Dirac (more accurate details are given in reference 7). It was shown that also in the case of low energies only a small influence is exercised by shielding upon the wave function and no corrections of the values computed by Church and Wenneser (Ref 2) can be given. For E0 conversions which occur only on the L shell the calculated values of function  $\Omega(k, Z)$  for  $Z = 49, 61, 73, 84$  and  $98$  for low energies are listed in figure 1. According to figure 1, parameter  $\phi$  may be obtained from the probability of an E0 conversion on the  $L_I$  shell, which was determined by experiment. The authors thank L. A. Sliv and B. S. Dzhelapov for their interest in the paper.

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SOV/48-23-2-14/20

On the Influence Exercised by Shielding Upon the Probability of EO Conversions  
on K and L Shells in the Case of Low Energies

There are 2 figures and 9 references, 5 of which are Soviet.

ASSOCIATION: Leningradskiy gos. universitet im. A. A. Zhdanova  
(Leningrad State University imeni A. A. Zhdanov)

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SOV/48-23-2-15/20

21(7)

AUTHORS:

Voykhanskiy, M. Ye., Listengarten, M. A.

TITLE:

On the Selection Rules of Conversion Transitions (O pravilakh otbora pri konversionnykh perekhodakh)

PERIODICAL:

Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 2, pp 238-243 (USSR)

ABSTRACT:

The conversion probability is determined by the sum of the internal and external matrix elements  $\langle M_e \rangle$  and  $\langle U_\gamma \rangle$ . Both matrix elements are subject to various selection rules. If there is a selection rule according to which the probabilities of internal conversion are not influenced in the case of strong decrease of the probability of  $\gamma$  radiation and external conversion, the nucleus largely contributes to conversion and the CIC (coefficients of internal conversion) depend on the nuclear structure. Therefore, CIC measurements may indicate the nuclear structure. Also the problem of selection rules for conversions on forbidden transitions is connected herewith. In the present paper the selection rule is given in a general form for transitions of any multipole order on the basis of asymptotic quantum numbers for the matrix

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SOV/48-23-2-15/20

## On the Selection Rules of Conversion Transitions

elements of  $\langle M_e \rangle$  internal conversion in nonspherical nuclei. In addition, the selection rule for electric conversion transitions is given more accurately than in reference 5, taking into account the complete term for the nuclear currents of transitions. The influence exercised by the nuclear structure upon the CIC is determined by the quantity of parameter  $\lambda = \langle M_e \rangle / \langle U_\gamma \rangle$ . In the case of a magnetic  $2^1$ -pole radiation the CIC depend only on one parameter  $\lambda_1^0$ , in the case of electric multipoles they depend on  $\lambda_1^{(+1)}$  and  $\lambda_1^{(-1)}$ . The obtained selection rules, with respect to the asymptotic quantum numbers, for the matrix elements of inner conversion in nonspherical nuclei are given in table 1 (electric multipole order) and table 2 (magnetic multipole order). For electric dipole conversions it was found that they differ from all other radiation and conversion transitions at small energies by their spin. There are 2 tables and 11 references, 4 of which are Soviet.

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S07/48-23-2-15/20

On the Selection Rules of Conversion Transitions

ASSOCIATION: Nauchno-issledovatel'skiy fizicheskiy institut Leningradskogo  
gos. universiteta im. A. A. Zhdanova  
(Scientific Research Institute of Physics of Leningrad  
State University imeni A. A. Zhdanov)

Card 3/3

S/048/60/024/009/016/016/XX  
B006/B060

AUTHOR: Listengarten, M. A.

TITLE: The Auger Effect 19

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1960,  
Vol. 24, No. 9, pp. 1041-1075

TEXT: This is a reproduction of a very comprehensive synopsis submitted before the X Vsesoyuznoye soveshchaniye po yadernoy spektroskopii (10th All-Union Conference of Nuclear Spectroscopy) held in Moscow from January 19 to 27, 1960. After a description of the Auger effect, the author discusses the aims pursued by a study of this effect (determination of the spectral lines of Auger electrons, their energy, and relative intensities, determination of the absolute probability of the effect, etc). The first part deals with the classification of Auger electrons. The series of Auger electrons is specified according to the primary vacancy (e.g., L-series), and the group according to the two final vacancies (e.g., the K-series has the groups K-LL, K-MN, etc.). Each group then consists of individual lines differing by their electron

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The Auger Effect

S/048/60/024/009/016/016/XX  
B006/B060

energy. The lines are designated according to the state (i.e., according to quantum numbers) of the finally doubly-ionized atom. The choice of quantum numbers is dependent on whether relativistic effects or interaction of electrons (or holes) are taken into account. Hence, there are four possibilities of designation: 1) according to the j-j coupling, 2) in non-relativistic single-electron approximation, 3) in the limit case of LS-coupling, and 4) for intermediate coupling. For these four cases, but in a different succession, Table 1 gives a classification of the K-LL group of the Auger electrons. Part 2 of the article under consideration deals with the energies of Auger electrons. The K-LL group is first discussed in great detail, and the energy functions relative to 9 lines are written. Table 2 gives for  $Z = 29, 32, 47, 62, 64, 74, 78, 79, 80, 83, 84, 93,$  and 94 a comparison of energy values determined experimentally with such obtained theoretically. Table 3 compares experimental and theoretical results for the relative position of lines of the K-LL group. The discussion is also extended to the lines of the K-LM group (Fig. 1), to the other groups of the K-series, and the L-series. Part 3 offers a survey of experimental and theoretical results relative to the intensities of groups and lines of Auger electrons. Table 4 collects data concerning the K-LL Auger transition probabilities, and Table 5 data on the

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## The Auger Effect

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experimentally determined relative intensities of the lines of the K-LL group. The mean values of the latter are compiled in Table 6. Table 7 gives an experimental and theoretical comparison of the relative intensities of the lines of the K-LL group. The relative intensities of the lines of the K-LL and K-LM groups calculated in intermediate coupling approximation are specified in Table 8, experimental and theoretical results of a determination of relative intensities of the lines of the K-LX group in Table 9, the results relative to the groups of the K-series in Table 10, the mean values of the relative intensities of the lines of the K-LX group in Table 11, and those of the L-XY group ( $X, Y \neq K, L$ ) in Table 12. Part 4 deals with the K-fluorescence yield. Table 14 gives an experimental-theoretical comparison, Table 15 the values obtained semi-empirically, Table 16 averaged relative values. Part 5 briefly deals with the Koster-Kronig transitions (Table 17), Part 6 with the L-fluorescence yield (Tables 18-22), and Part 7 with that of the M-shell. A. A. Konstantinov and E. M. Krisyuk, V. Mokhov, and M. Urin are mentioned. There are 6 figures, 24 tables, and 116 references: 15 Soviet, 7 Canadian, 10 British, 42 US, 7 Dutch, 5 German,



The Auger Effect

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12 French, 4 Italian, 2 Japanese, 2 Swiss, and 7 Swedish.

ASSOCIATION: Nauchno-issledovatel'skiy fizicheskiy institut  
Leningradskogo gos. universiteta im. A. A. Zhdanova  
(Scientific Research Institute of Physics of Leningrad  
State University imeni A. A. Zhdanov) ✓

Card 4/4

*LISTENGARTEN, M.A.*

SOV/5914

PHASE I BOOK EXPLOITATION

Akademiya nauk SSSR. Fiziko-tekhnicheskij institut im. A. F. Ioffe  
Gamma-luchi (Gamma Rays) Moscow, Izd-vo AN SSSR, 1961. 720 p.

Errata slip inserted. 3300 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Fiziko-tekhnicheskij institut  
im. A. F. Ioffe.

Resp. Ed.: L. A. Sliv, Doctor of Physics and Mathematics; Ed. of  
Publishing House: N. K. Zaychik; Tech. Ed.: A. V. Smirnova.

PURPOSE: This book is intended for theoretical and experimental  
physicists working in the field of nuclear spectroscopy and in  
related fields where gamma rays are utilized. It may also be  
useful to advanced students of physics.

COVERAGE: The book, representing a symposium of papers whose authors  
are specialists in their areas, attempts to provide the fullest  
possible coverage of theoretical and experimental methods of

APPROVED FOR RELEASE: 06/20/2000

CIA-RDP86-00513R000930120012-3"

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## Gamma Rays

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determining nuclear gamma-radiation characteristics and the use of gamma rays to study matter, particularly nuclear structure. The book contains a large number of tables, graphs, and nomographs and can be used as an encyclopedical manual on gamma rays. No personalities are mentioned. References accompany each part.

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Gamma Rays

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PART 3. EXPERIMENTAL STUDY OF RADIATIVE TRANSITIONS IN NUCLEI  
(E. Ye. Berlovich)

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PART 4. INTERNAL CONVERSION OF GAMMA RAYS  
(M. A. Listengarten)

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S/058/62/000/007/022/068  
A061/A101

AUTHOR: Listengarten, M. A.

TITLE: Internal conversion of gamma rays

PERIODICAL: Referativnyy zhurnal, Fizika, no. 7, 1962, 27, abstract 7B218  
(In collection: "Gamma-luchi". Moscow-Leningrad, AN SSSR, 1961,  
271 - 507)

TEXT: This is a review of the present state of the internal conversion theory of gamma rays. The detailed derivation of formulas for the internal conversion coefficient is given. It takes account of the effect of nuclear finite dimensions and shielding. Circumstantial tables, obtained by Sliv and Band for the internal conversion coefficient on K and L shells, are given in an appendix.

V. Gorshkov

[Abstracter's note: Complete translation]

Card 1/1

LISTENGARTEN, M.A.

Calculating the probability of the Auger effect. Izv. AN SSSR.  
Ser. fiz. 25 no.7:792-798 J1 '61. (MIRA 14:7)

1. nauchno-issledovatel'skiy fizicheskiy institut Leningradskogo  
gosudarstvennogo universiteta im. A.A. Zhdanova.  
(Auger effect)

LISTENGARTEN, M. A.

Effect of the nuclear structure on the internal conversion factors of  $\gamma$ -rays. Izv. AN SSSR, Ser. fiz. 10 no.12:1452-1458 D '62. (MIRA 16:1)

(Internal conversion(Nuclear physics))  
(Photonuclear reactions)  
(Gamma rays)

LISTENGARTEN, M.A.

Study of two-quantum transitions of nuclei. Vest. LGU 17 no.16:142-143 '62.

(MIRA 15:9)

(Quantum theory)



34168

S/048/62/026/002/002/032  
B104/B102

24.6.820  
AUTHOR: Listengarten, M. A.

TITLE: Calculation of the Auger effect probability for heavy nuclei

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26,  
no. 2, 1962, 182-190

TEXT: In previous papers the author has studied the Auger effect theory and calculated the probability of an Auger effect for the atomic number  $Z = 81$ . The probabilities for Auger transitions of the K - LL group are calculated for  $Z = 65 - 92$  by the same methods. The expressions used are defined in the afore-mentioned papers. A general formula for the probability of an Auger effect, which is correct for any Auger transition, is derived on the basis of the relativistic theory of retarded interaction of two electrons with jj coupling. The absolute and relative transition probabilities of the most intense lines of the Auger K series show a much better agreement with experimental data for heavy nuclei than those obtained in nonrelativistic approximation. The nonrelativistic theory is open to

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S/048/62/026/002/002/032  
B104/B102

Calculation of the Auger...

a big error, particularly at  $Z = 92 - 94$ . The problem was posed by L. A. Sliv, and partly studied at the Fiziko-tekhnicheskiy institut (Physico-technical Institute). Computations were made by O. K. Daugavet and Ye. F. Ozerova. B. S. Dzhelepov is thanked for interest. There are 6 tables and 22 references: 8 Soviet and 14 non-Soviet. The four most recent references to English-language publications read as follows: Graham R., Meritt J., Canad. J. Phys., 39, 1058 (1961). Ewan G., Meritt. S., Canad. J. Phys., 38, 324 (1960). Ewan G. et al., Canad. J. Phys., 38, 163 (1960). Asaad W. N., Proc. Roy. Soc., 249, 555 (1959). ✓

ASSOCIATION: Nauchno-issledovatel'skiy fizicheskiy institut Leningradskogo gos. universiteta im. A. A. Zhdanova (Scientific Research Institute of Physics of the Leningrad State University imeni A. A. Zhdanov)

Table 1. Calculated probabilities of K - LL Auger transitions per  $10^3$  atomic unit times. Legend: (1) Line; (2) nonrelativistic approximation; (3) relativistic approximation; (B) use of the hydrogen-like function with the Slater constant; (T -  $\Phi$ ) the Thomas - Fermi statistical poten-

Card 2/2 ✓

S/048/62/026/012/001/016  
B117/B186

AUTHOR: Listengarten, M. A.

TITLE: Effect of nuclear structure on  $\gamma$ -ray internal conversion coefficients

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 12, 1962, 1451-1458

TEXT: This is a review article of Western and Soviet work in the field specified in the title, supplementing previously published reviews (Izv. AN SSSR. Ser. fiz., 22, 759 (1958); "Gamma-luch" (Gamma-rays). Editor, L. A. Sliv., Izd. AN SSSR, M.-L., 1961; E. Church, J. Weneser, Ann. Rev. Nucl. Sci., 10, 193 (1960)). It deals primarily with work published in 1960 - 1961. The paper was presented at the 12th Annual Conference on Nuclear Spectroscopy held in Leningrad from January 26 to February 2, 1962. There are 2 figures, 3 tables, and 75 references.

Card 1/1

LISTENGARTEN, M.A.

Design of a  $\beta$ -spectrometer with double and twofold focusing  
at the angle  $\pi/\sqrt{2}$ . Izv. AN SSSR. Ser. fiz. 27 no. 2:290-294 F  
'63. (MIRA 16:2)

(Beta-ray spectrometer)

BAND, I. M.; LISTENGARTEN, M. A.

"Angular Correlations of Conversion Electrons."

report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22  
Feb 64.

IGU, FTI (Leningrad State Univ, Physico Technical Inst)

BAND, I. M.; LISTENGARTEN, M. A.; FERESIN, A. P.

"Comparative Analysis of Tables of Internal Conversion Coefficients."

report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22  
Feb 64.

LGU, FTI (Leningrad State Univ, Physico Technical Inst)

KRAFT, O.Ye., kand. fiziko-matematicheskikh nauk; LISTENGARTEN, M.A.,  
kand. fiziko-matematicheskikh nauk

Recent research in nuclear spectroscopy; conference in Tiflis.  
Vest. AN SSSR 34 no.6:94-97 Je '64 (MIRA 17:8)

L 26948-65 EWT(1) IJP(c)

ACCESSION NR: AP0044530

S/0048/65/029/001/0102/0104

AUTHOR: Band, I.A.; Listengarten, M.A.; Sliv, L.A.

15  
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0

TITLE: Conversion matrix elements / Report, 14th Annual Conference on Nuclear Spectroscopy in Tbilisi, 14-22 Feb 1964/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v.29, no.1, 1965, 102-104

TOPIC TAGS: internal conversion, Gamma radiation, conversion coefficient, conversion matrix

ABSTRACT: An internal conversion coefficient is expressed as the sum of the so-called partial coefficients pertaining to transitions of the electron to different final states of the energy continuum, characterized by the quantum number  $\kappa$ :

$$\alpha_q^{(\tau L)} = \sum_{\kappa} |M_{\kappa}|^2 = \sum_{\kappa} |\text{Re } M_{\kappa} + i \text{Im } M_{\kappa}|^2$$

Here  $\alpha_q^{(\tau L)}$  is the conversion coefficient of type  $\tau$  gamma-radiation (E = electric; M = magnetic) of multipole order L on the q-th shell or subshell, and  $M_{\kappa} \equiv M_{\kappa}^{(\tau L)}$  is the partial conversion matrix element. These matrix elements are intermediate results in calculating internal conversion coefficients, but they also are of independent value and are used in solving other problems. In the present work there



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 were calculated and tabulated the  $M_x$  for E1, E2, M1, and M2 transitions for the following values of the atomic number and transition energy  $k = \hbar\omega/mc^2$ : K-shell:  $Z = 81, 84, 88, 92, 0.20 \leq K \leq 5.0$ , L-shell:  $Z = 49, 53, 57, 61, 65, 69, 73, 77, 81, 84, 88, 92, 95, 98, 0.05 \leq K \leq 0.70$ . The algebraic expressions used for the matrix elements are adduced. The individual numerical values for the matrix elements for any  $k, Z$  and multipolarity, among those listed above, can be obtained from the authors. It will be possible to order photoprints or microfilms of the tables from the Institute of Scientific Information of the Academy of Sciences of the SSSR. The authors are grateful to N.B. Brovtsina, K.I. Golovan, L.I. Freiental and F.I. Lange-len, who participated in compilation of the tables. Orig.art.has: 21 formulas. [02]

ASSOCIATION: none

SUBMITTED: 00/--Jan65

ENCL: 00

SUB CODE: GP, MA

NR SOV REF: 007

OTHER: 001

ATD PRESS: 318

2/2

32031-65 IRP(n) DIAAP  
ACCESSION NR: AP:00:051

S/0048/65/029/002/0258/0265

13  
17  
B

AUTHOR: Listengarten, M.A.; Feresin, A.P.

TITLE: The effect of nuclear structure on L shell internal conversion coefficients for hindered gamma transitions /Report, 14th Annual Conference on Nuclear Spectroscopy held in Tbilisi, 14-22 Feb 1964/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v.29, no.2, 1965, 258-265

TOPIC TAGS: internal conversion, nuclear structure, nuclear model, forbidden transition, internal conversion coefficient

ABSTRACT: Formulas are derived on the basis of earlier work (M.Ye.Voykhanskiy and M.A.Listengarten, Izv.AN SSSR, Ser.fiz.23,238,1959) with the aid of which internal conversion coefficients can be calculated using different nuclear models without repeating calculations of electronic radial wave function integrals. In these formulas the contributions of the nuclear convection currents and spin currents, for which the asymptotic selection rules differ, are kept separate. These formulas are employed to analyze the L shell internal conversion anomalies of the Pa<sup>231</sup> 82.4 keV, the Np<sup>237</sup> 26.4 keV, and the Np<sup>237</sup> 60 keV tran-

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ACCESSION NR: APS005951

sitions and to determine the relative contributions of the different nuclear processes. The results obtained for the  $\text{Pa}^{231}$  transition agree with those of K. L. Church and J. Wenner (Nucl. Phys. 28, 602, 1961), although these authors did not take into account the ordinary conversion matrix elements. This agreement is ascribed to the large magnitude of the anomaly. The formulas were also employed to calculate the difference between the L shell internal conversion coefficients predicted by the nonpenetrating electron model of Rose (M. E. Rose and T. A. Green, Phys. Rev. 110, 105, 1958) and the surface current model of Sliv (I. M. Band, M. A. Listengarten, and L. A. Sliv, Izv. AN SSSR, Ser. fiz. 29, No. 1, 1965). Except for some M1 transitions, this difference was found to be of the order of 1% and thus insufficient to explain the difference between the internal conversion coefficient tables of L. A. Sliv and I. M. Band and those of M. E. Rose. The formulas derived in this paper can also be used to calculate the influence of nuclear structure on the angular correlation of conversion electrons. Tables of the pertinent coefficients for L shell conversion of transitions of three different multipolarities and for a wide range of atomic number and transition energy are promised for a future publication. "I. M. Band and A. Dyukhov participated in the initial stage of this investigation. The results obtained were communicated in Reference 13 (Program and abstracts of reports of the 12th Annual Conference on Nuclear Spectroscopy, p. 83, M. S. U., 1962.)." Orig. art. has: 7 formulas, 2 figures, and 4 tables. [02]

Card 2/3

L 32031-69

ACCESSION NO: AP5005951

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: NP

NO REF SCV: 006

OTHER: 007

ATD PRESS: 3199

Card 3/3

L 31624-45 EWT(m) Feb DIAAF

ACCESSION NR: AP5005953

S/0048/65/029/002/0268/0276

AUTHOR: Band, I.M.; Listengarten, M.A.

TITLE: Angular correlations of conversion electrons. Report, 14th Annual Conference on Nuclear Spectroscopy held in Tbilisi, 14-22 Feb 1964/

SOURCE: AN SSSR, Izvestiya. Seriya fizicheskaya, v.29, no.2, 1965, 268-276

TOPIC TAGS: <sup>14</sup>internal conversion, angular correlation, multipolarity, screening effect, K band, L band, nuclear radius

ABSTRACT: The parameter  $b_2$  in the conversion electron correlation function, tabulated for K-conversion by L.C.Biedenharn and M.E.Rose (Rev.Mod.Phys.85,5,1952) was calculated for  $L_I$  and  $L_{II}$  conversion with the aid of the matrix elements of I. M.Band, M.A.Listengarten and L.A.Sliv (Izv.AN SSSR, Ser.fiz, 29, No.1, 1963) and the results are presented graphically. For the calculations an error of sign in the work of Biedenharn and Rose, pointed out by E.L.Church, A.Schwarzschild and J.Wenner (Phys.Rev.133,1335,1964), was corrected and the effects of screening and the finite nuclear radius were taken into account. The curves presented show the dependence of  $b_2$  on transition energy for K,  $L_I$  and  $L_{II}$  conversion of  $M1$ ,  $E1$ ,  $E2$  and

Car 11/2



I. 29275-66 -EWT(1) IJF(c) AT .SOURCE CODE: UR/0367/66/003/003/0413/0418  
ACC NR: AP6019330

AUTHOR: Listengarten, M. A.; Band, I. M.

ORG: Leningrad State University (Leningradskiy gosudarstvennyy universitet

TITLE: Calculations of the angular correlation parameters for conversion electrons

SOURCE: Yadernaya fizika, v. 3, no. 3, 1966, 413-418

TOPIC TAGS: conversion electron spectrum, electron transition.

ABSTRACT: The conversion electron angular correlation parameters were calculated for the  $L_I$  and  $L_{II}$  shells, for the atomic number in the region  $49 \leq Z \leq 73$  and the transition energy  $h\nu/mc^2$  between 0.05 and 0.7. Screening and finite dimensions of the nucleus were taken into account. A method of extrapolating the parameters to lower Z and higher energies is given. The authors thank L. A. Sliv and D. Ye. Tun. Orig. art. hasi. 3 figures and 4 formulas. [Based on authors' Eng. abst.] [JPRS]

SUB CODE: 20 / SUBM DATE: 07Jul65 / ORIG REF: 007 / OTH REF: 004

Card 1/1 CC

06496-67 EWT(m)  
ACC NR: KP7000460

SOURCE CODE:

UR/0367/66/004/001/0066/0071

VOYKHANSKIY, M. Ye.; LISTENGARTEN, M. A.; FERESIN, A. P.

26  
B

Problem of Penetration Effects in Internal Conversion"

Moscow, Yadernaya Fizika; July, 1966; pp 66-71

ABSTRACT: Anomalies in internal conversion coefficients are connected with the difference in the selection rules for  $\gamma$ -transitions and conversion transitions, due to the penetration of an electron into the nucleus. In cases when the first terms in the expansion of the penetration conversion matrix elements are negligible, higher terms play a significant role, and selection rules with respect to asymptotic quantum numbers are obtained for them. Orig. art. has: 7 formulas and 1 table. [Based on authors' Eng. abst.] [JPRS: 37,330]

ORG: Leningrad State University (Leningradskiy gosudarstvennyy universitet)

TOPIC TAGS: gamma transition, nuclear physics

SUB CODE: 20 / SUBM DATE: 07Jul65 / ORIG REF: 014 / OTH REF: 012

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ABRAMOV, M.A.; ALIVERDIZADE, K.S.; AMIROV, Ye.M.; ARENSON, R.I.; ARSEN'YEV, S.I.; BAGDASAROV, R.M.; BAGDASAROV, G.A.; BADAMYANTS, A.A.; DANIYEL'YAN, G.N.; DZHAFAROV, A.A.; KAZAK, A.S.; KERCHENSKIY, M.M.; KONYUKHOV, S.I.; KRASNOBAYEV, A.V.; KURKOVSKIY, A.I.; LALAZAROV, G.S.; LARIONOV, Ye.P.; LISTENGARTEN, M.Ye.; LIVSHITS, B.L.; LISIKYAN, K.A.; LOGINOVSKIY, V.I.; LYSENKOVSKIY, P.S.; MOLCHANOV, G.V.; MAYDEL'MAN, N.M.; OKHON'KO, S.K.; ROMANIKHIN, V.A.; ROSIN, I.I.; RUSTAMOV, E.M.; SARKISOV, R.T.; SKRYPNIK, P.I.; SOBOLEV, N.A.; TARATUTA, R.N.; TVOROGOVA, L.M.; TER-GRIGORYAN, A.I.; USACHEV, V.I.; FAYN, B.P.; CHICHEROV, I.G.; SHAPIRO, Z.L.; SHEVCHUK, Yu.I.; TSUDIK, A.A.; ABUGOV, P.M., red.; MARTYNOVA, M.P., vedushchiy red.; DANIYEL'YAN, A.A.; TROFIMOV, A.V., tekhn.red.

[Oil field equipment; in six volumes] Neftianoe oborudovanie; v shesti tomakh. Moskva, Gos.nauchno-tekhn.izd-vo neft. i gornotoplivnoi lit-ry. Vol.3. [Petroleum production equipment] Oborudovanie i instrument dlia dobychi nefti. 1960. 183 p. (MIRA 13:4)

(Oil fields--Equipment and supplies)

LISTENGARTEN, R.M.; SARUKHANOVA, N.A.

Characteristics of bitumens in Oligocene-Miocene sediments of  
Kobystan and the Caspian Sea region. Trudy AzNII DN no.4:317-  
322 '56. (MIRA 14:4)  
(Caspian Sea region—Bitumen—Geology)

LISTENGARTEN, R.M.; KHATSKEVICH, N.I.

Comparing the composition of petroleums with the geochemical characteristics of enclosing sediments. Trudy AzNII DN (MIRA 14:5)  
no.9:30-36 '60.  
(Petroleum--Analysis)  
(Geochemical prospecting)

AKHMEDOV, G.A.; KHATSKEVICH, N.I.; LISTENGARTEN, R.M.; PAVLOVA, V.A.;  
SARUKHANOVA, N.A.

Possible oil-forming series in Cretaceous sediments of the  
Caspian-Kuba area. Trudy AzNII DN no.10:19-30 '60. (MIRA 14:4)  
(Azerbaijan--Petroleum geology)

LISTENGARTEN, R.M.; SARUKHANOVA, N.A.

Characteristics of Mesozoic bitumens in the Caspian Sea region.  
Trudy AzNII DN no.10:202-205 '60. (MIRA 14:4)  
(Caspian Sea region--Bitumen)

LISTENGARTEN, T. A.

LISTENGARTEN, T. A.: "Material for the study of erythema nodosum  
in children". Baku, 1955. Azerbaydzhan State Medical Inst.  
(Dissertations for the Degree of Candidate of Medical Sciences)

SO: Knizhnaya letopis', No. 52, 24 December, 1955. Moscow.

LISTENGARTEN, T. A. Cand Med Sci -- (diss) "Data for the study of nodose  
erythema <sup>nodosa</sup> in children." Baku, 1958. 18 pp (Azerbaijdzhan State Med Inst in  
N. Narimanov), 200 copies (KL, 13-58, 100)

LISTENGARTEN, T.A.

Hemoglobinuric fever in children. Azerb. med. zhur. no.9:44-49  
S '60. (MIRA 13:9)

(BLACKWATER FEVER)



LISTENGARTEN, Ye. L.

Possibility of production of experimental streptococcal angina. Vest. otorinolar., Moskva 15 no.4:44-46 July-Aug 1953. (CIML 25:1)

1. Candidate Medical Sciences. 2. Of the Department of Microbiology of Kuybyshev Medical Institute.

LISTENGURT, P.M.

On the vitim Plateau. Geog. v shkole 20 no.3:15-20 My-Je '57.  
(Vitim Plateau) (MIRA 10:6)

LISTENANT, P. M., Cand GeogSci -- (diss) "The role of the economic and geographic situation in the historical development of the cities of Yaroslavl, Kalinin and Bybinsk," Moscow, 1960, 15 pp  
120 cop. (Institute of Geography, AS USSR) (KL, 45-60, 123)

ALAMPIYEV, P.M.; VITYAZEVA, V.A.; LISTENGURT, F.M.; MAKSAKOVSKIY, V.P.;  
POKSHISHEVSKIY, V.V., prof.; SOLOV'YEVA, M.G., dotsent;  
LYALIKOV, N.I., dotsent, red.; ZAK, A.L., tekhn.red.

[Economic geography; toponymy. Collected articles] Ekonomicheskaya  
geografiya: Toponimika; sbornik statei. Moskva, 1960. 169 p.  
(MIRA 14:2)

1. Moscow. Moskovskiy gosudarstvennyy pedagogicheskiy institut.  
Geografo-biologicheskiy fakul'tet.  
(Geography, Economic)  
(Europe, Eastern--Names, Geographical)

ABRAMOVICH, A.D., kand. tekhn. nauk; ANTONOV, M.F., kand. tekhn. nauk; KAPLAN, G.A., inzh.-ekonomist; LEVIN, S.M., inzh.-zemleustroitel'; LISTENGURT, F.M., kand. geogr. nauk; SAMOYLOV, Ya.M., kand. tekhn. nauk; SMOLYAR, I.M., kand. arkhitek.; SOLOFNENKO, N.A., kand. arkht.; STERLIGOV, V.D., kand. arkht.; FALEYEV, V.G., inzh.; Prinsipali uchastiye: BUTUZOVA, V.P.; GLABINA, N.K.; GOL'DSHEYN, A.M.; DEMYANOVSKIY, V.S.; KAPLAN, G.L.; FEDOTOVA, N.A.; TSEYTLIN, G.I.; BURLAKOV, N.Ya., red.; KOMPANEYETS, Z.N., red. izd-va; GOLOVKINA, A.A., tekhn. red.

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Abs Jour : Rcf Zhur - Biol., No 11, 1958, No 49699

Author : Listengurt M.A.

Inst : All-Union Institute of Plant Protection, Moldavian  
Station

Title : Some Questions on Subsurface Soil Fumigation

Orig Pub : Sb. tr. Mold. st. Vses. in-ta zashchity rast.,  
1957, vyp. 2, 227-236

Abstract : An experimental machine for subsurface soil fumi-  
gation for the control of Phylloxera was developed  
and tested. The technological process was ex-  
amined and defined more precisely (the formation  
of slits by rotarydrilling, introduction of the  
the chemical poisons by stages into the slits  
through a needle with a nozzle, used for drilling).  
The nozzle of spiral form or of the pointed drill

Card : 1/2

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(Suslike--Extermination)



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