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32245
S/103/61/022/012/002/016
D201/D305

Reducing a non-stationary ...

done by introducing, and by simple transformation of, a function $r_k(t)$

$$r_k(t) = \sum_{i=0}^{n-k} \frac{(-1)^i (k+i)!}{k!\,i!} \psi_{k+i}^{(i)}(t) \qquad (9)$$

or

$$r_k(t) = a_k \varphi_1(t) = a_k \psi_n(t) \qquad (11)$$

where a_k = const., from which it may be seen that functions r_k may or may not be linearly dependent. If they are not, the operator $\Phi(p)$ cannot be reduced to a single stationary operator at any kernel $\varphi_2(t)$. Then the non-stationary operator $\Phi(p)$ may be reduced to a sum of stationary operators

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32244

S/103/61/022/012/002/016
D201/D305

Reducing a non-stationary ...

$$\Phi(p,t) = \sum_{i=0}^{l} \Phi_i(p) \left[\varphi_i(t)\right. \qquad (19)$$

with corresponding kernels by means of simple transformations of the system of functions $r_k(t)$. The number of orders of these transformations (magnitude 1) is equal to the number of functions $\psi_i(t)$, independent of each other, whose linear combination represents a function $r_k(t)$, constituting a system of functions $r_k(t)$. It follows from the solution that a_{ik} may not be single-valued and it follows that there may be several forms of representation of a given non-stationary operator $\Phi(p,t)$ as a sum of stationary operators. There are 2 Soviet-bloc references.

SUBMITTED: April 26, 1961

Card 3/3

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

correlation function and spectral density of the input signal. Eq.(2) requires prior determination of the weighting function and double integration over a real region. Eq.(3) requires the input spectral density to be found. The author proposes simpler formulae based on the Laplace transform of the correlation function. The method has the following steps.

1. From Laplace transform tables the transform of $F_x(p)$, the output (sic) signal correlation function is found.
2. From the same tables, the inverse transforms of the transfer function $W(p)$ and of $W(p)F_x(p)$ are found.

The dispersion $D_y(t)$ is calculated from the formula

$$D_y(t) = 2\int^{t} x_1(u)\, x_2(u)\, du \qquad (12)$$

Eq.(12) is equivalent to a differential equation. The method permits various "short-cuts" of operational calculus to be applied.

SUBMITTED: February 6, 1961

Card 2/2

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

SKLYAREVICH, A.N. (Riga)

Finite equations characterizing an optimum dynamic system. Izv. AN SSSR. Otd. tekh. nauk. Energ. i avtom. no.5:82-88 S-O '62. (MIRA 15:11)

(Automatic control)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

44337

S/024/62/000/006/005/020
E140/E135

AUTHOR: Sklyarevich, A.N. (Riga)

TITLE: Optimal dynamic system with mathematical expectation expandable in harmonic components

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Energetika i avtomatika, no.6, 1962, 67-75

TEXT: At the input of a dynamic system there may frequently be present random processes with mathematical expectation periodically varying with time - in the special case constant. If the mathematical expectation of such a process has a symmetry of only the first or only the second kind, the optimal transfer function of the system may be found by algebraic methods previously discussed by the author (Izv. AN SSSR, OTN, Energetika i avtomatika, no.5, 1962). The method remains valid even where the harmonic components have incommensurable periods. The criterion used to express optimality is the minimum of the steady state mean dispersion of the reproduction error about a zero mathematical expectation. Two simple examples are given as illustrations.

Card 1/1 SUBMITTED: January 25, 1962

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

S/103/62/023/009/001/007
D201/D308

AUTHOR: Sklyarevich, A. N. (Riga)

TITLE: An algebraic method of determining an optimum transfer function

PERIODICAL: Avtomatika i telemekhanika, v. 23, no. 9, 1962, 1154-1164

TEXT: The author presents a method of determining optimum transfer functions which makes it possible to see clearly their physical meaning and properties. It is assumed that both the controlling and perturbation signals are stationary random functions of time with mathematical expectation equal to zero and with given auto- and mutual-correlation functions. For the above assumptions simple algebraic equations are derived which permit determination of the transfer function of a physically realizable system from the condition of minimum dispersion of the reproduction error, provided the operating time is sufficiently long. Determination of the r.m.s. error is carried out by generalizing the method given earlier by

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D201/D308

An algebraic method ...

the author (Avtomatika i telemekhanika, v. ~~23~~ 22, no. 7, 1961). The expression obtained for the optimum transfer function corresponds in the most general case to an unstable dynamic system. Its formal transformation is used for approximate evaluation of the optimization of the system obtained from the determination of the spectral density and of the dispersion of reproduction error. In order that the transfer function of the optimum system determine a stable, physically realizable dynamic system, the set of transfer functions to which the above function belongs, is restricted and only the positions of poles to the left of the integration line are taken into account in the integration process. The method is applied to the following: the problem of smoothing, of determining the optimum differentiator, of anticipation and of determining an optimum dynamic system with given auto- and mutual-correlation functions and the transform operator of the optimum transfer function.

SUBMITTED: May 8, 1962

Card 2/2

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

SKLYAREVICH, A. N.

"Formula for Determining Characteristics for Stationary Linear Systems."

report presented at the 3rd Prague Conference on Information Theory, Statistical Decision Functions and Random Processes, Liblice, Czechoslavakia, 4-14 June 1962.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

ACCESSION NR: AT4038160 S/2690/63/005/000/0005/0016

AUTHOR: Sklyarevich, A. N.

TITLE: Finite-difference formulas for the parameters of an optimal dynamic system

SOURCE: AN LatSSR. Institut elektroniki i vy*chislitel'noy tekhniki, Trudy*, v. 5, 1963. Avtomatika i vy*chislitel'naya tekhnika (Automation and computer engineering, no. 6, 5-16

TOPIC TAGS: information theory, communication theory, correlation analysis, statistical analysis

ABSTRACT: It is shown on the basis of an earlier investigation by the author (Izv. AN SSSR, OTN, Energetika i avtomatika, 1962, no. 5) that finite-difference formulas can be derived to facilitate determination of the transfer function of an optical dynamic system,

$$W(s) = w(s) + \sum_{i} \frac{A_i}{s - \gamma_i} + \sum_{k=1}^{n} \frac{B_k}{s - \lambda_k},$$

where w(s) is the integral part of W(s)

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$$w(s) = \sum_{l=0}^{n} E_l s^l$$

and γ_i and λ_k are roots of some characteristic functions defined in terms of the noise and signal correlation functions (the noise and signal are assumed to have zero mean values). The application of the resultant formulas to a simple system is illustrated by way of an example. Orig. art. has: 41 formulas.

ASSOCIATION: Institut elektroniki i vy*chislitel'noy tekhniki AN LatSSR (Institute of Electronics and Computing Technique, AN LatSSR)

SUBMITTED: 00 ATD PRESS: 3076 ENCL: 00

SUB CODE: DP, MA NR REF SOV: 001 OTHER: 000

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

SKLYAREVICH, A.N. (Riga)

Optimal transfer function with disturbances and periodic mathematical expectancies. Avtom.i telem. 24 no.1:53-63 Ja '63. (MIRA 16:1)

(Automatic control)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

S/103/63/024/002/002/020
D201/D308

AUTHOR: Sklyarevich, A.N. (Riga)

TITLE: Reduction of a non-stationary operator to the product of stationary operators with specific kernels

PERIODICAL: Avtomatika i telemekhanika, v. 24, no. 2, 1963, 136-142

TEXT: Since the dynamics of a linear automatic control system becomes much simpler if the non-stationary operator describing the system can be transformed into a product of stationary operators with specific kernels, the author determines the conditions under which such a transformation can take place and gives the procedure of obtaining the characteristic of this stationary operator presentation.

SUBMITTED: April 12, 1962

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

L 31113-65 EWT(d)/EPF(n)-2/EWP(1) Po-4/Pq-4/Pg-4/Paa-2/Pu-4/Pk-4/Pl-4
EJP(c) WW/BC

ACCESSION NR: AT5000968 S/2690/64/006/000/0005/0018

51
50
B+1

AUTHOR: Sklyarevich, A. N.

TITLE: Special cases of determination of statistical characteristics of the output variable in a linear dynamic system

SOURCE: AN LatSSR. Institut elektroniki i vychislitel'noy tekhniki. Trudy, v. 6. Riga, 1964. Avtomatika i vychislitel'naya tekhnika (Automation and computer technology), no. 7, 5-18

TOPIC TAGS: automatic control, automatic control design, automatic control system, automatic control theory

ABSTRACT: An earlier author's article (Avt. i telemekh., 1961, v. 22, no. 7) presented tables and formulas for calculating the dispersion and correlation function of the output variable in a constant-parameter linear dynamic system when a stationary random process with a known correlation function is applied to

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ACCESSION NR: AT5000968

the system input. The above tables and formulas are applicable if the system transfer function W(s) and the single-variable Laplace transform $F_x(s)$ of the signal correlation function $K_x(\tau)$ at the system input have only simple poles and if the poles of the function W(s) and the product $W(s)F_x(s)$ do not coincide. The present article shows that the above results can be used in determining the statistical characteristics of linear dynamic systems in these particular cases: (1) When the functions W(s) and $W(s)F_x(s)$ have multiple poles and (2) When the poles of these functions partially or entirely coincide (a correlation resonance). The results may also be used for the case of a nonstationary system only if the above relations satisfy some sufficiently broad conditions. Two examples illustrate the method. Orig. art. has: 62 formulas and 1 table.

ASSOCIATION: Institut elektroniki i vychislitel'noy tekhniki AN LatSSR (Institute of Electronics and Computer Technology, AN LatSSR)

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NO REF SOV: 005 OTHER: 000

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L 57483-65 EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(1) Pf-4

ACCESSION NR: AP5015116 UR/0371/65/000/003/0095/0102

AUTHOR: Sklyarevich, A.N.

TITLE: Reduction of operators in automatic control theory

SOURCE: AN LatSSR. Izvestiya. Seriya fizicheskikh i tekhnicheskikh nauk, no. 3, 1965, 95-102

TOPIC TAGS: automatic control theory, automatic control operator reduction, control transfer function, pulse transfer function, random function

ABSTRACT: The dynamic properties of linear automatic control systems are fully characterized by the pulse transfer (weight) function. The existing analytical methods for the evaluation of this function (see, e.g., V. S. Pugachev, Teoriya sluchaynykh funktsiy, M., 1962) are applicable only to simple cases. Consequently, a method for the determination of the pulse transfer function is developed using the formulas for the representation of the given nonstationary rational operator function as a sum of stationary operators (see V. A. Ditkin, A.P. Prudnikov, Operatsionnoye ischisleniye po dvum peremennym i yego prilozheniye, M., 1958). The newly derived equations allow, in the general case, the determination of the interaction equivalent to the given initial conditions. An illustrative example concerning the transfer function described by the equation

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L 57483-65

ACCESSION NR: AP5015116

$$ty'' - (t+1)y' + y = tx' + 2x.$$

is also worked out. Orig. art. has: 42 formulas.

ASSOCIATION: Rizhskiy institut inzhenerov Grazhdanskogo vozdushnogo flota im. Leninskogo komsomola (Riga Institute of Civil Air Fleet Engineers)

SUBMITTED: 04Sep64 ENCL: 00 SUB CODE: IE, MA

NO REF SOV: 005 OTHER: 000

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

L 63990-65 EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(1) IJP(c) BC

AM5017154 BOOK EXPLOITATION UR/ 62-50 15 B+1

Sklyarevich, Akiva Nukhimovich

Operator methods in the statistical dynamics of automatic systems (Operatornyye metody v statisticheskoy dinamike avtomaticheskikh sistem) Moscow, Izd-vo "Nauka", 1965. 459 p. illus., biblio., index. 6650 copies printed. Series note: Teoreticheskiye osnovy tekhnicheskoy kibernetiki

TOPIC TAGS: automatic central system, statistical dynamics, Laplase transform, linear dynamic system, random process, stationary random process, ergodic random process, output variable system, linear dynamic system, constant parameter system

PURPOSE AND COVERAGE: This book is intended for engineers and technicians concerned with the operation of automatic systems. It is stated that the book contains the first systematic presentation of the operational methods which can be applied to the statistical dynamics of automatic systems and that it demonstrates the expediency of their use in investigations of the accuracy of automatic system operations.

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APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

L 2742-66 EWT(d)/EWP(w)/EWP(k)/EWP(h)/EWP(1) IJP(c) JXT(CZ)
ACC NR: AT5028444 SOURCE CODE: UR/2690/65/009/000/0021/0030

AUTHOR: Sklyarevich, A. N.
44, 55
ORG: none*

42
B+1

TITLE: Reduction of a non-stationary differential operator to the product of lower-order operators

SOURCE: *AN LatSSR. Institut elektroniki i vychislitel'noy tekhniki. Trudy, v. 9, 1965. Avtomatika i vychislitel'naya tekhnika, 21-30 44, 55

TOPIC TAGS: automatic control theory, differential operator factorization, frequency response function calculation

14

ABSTRACT: The problem of simplifying the study of linear automatic control systems whose behavior is described by the operator equation 16, 44, 55

$$\Phi(p,t)\,y(t)=x(t), \qquad (1)$$

by means of representing the operator $\Phi(p, t)$ as a product of simpler operators is analyzed. On the basis of the author's earlier studies (Avtomatika i telemekhanika, v. 22, no. 3; and no. 12, 1961) where it was shown that every first-order linear differential operator can be represented in the form

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ACC NR: AT5028444

$$\Phi_1(p,t) = p\,\psi_{11}(t) + \psi_{10}(t), \qquad (2)$$

where $\psi_{11}(t)$ and $\psi_{10}(t)$ are kernels of the operator and p is a differential operator, it is proved that any n-th order linear differential operator can be represented as a product of first-order linear differential operators. It is also shown that there exist an infinite number of representations for the same operator. A method for factorizing linear operators is presented which is used for determining the frequency-response function of the dynamic system on the basis of frequency-response functions of individual components. Two examples illustrate the theory. Orig. art. has: 22 formulas. [LK]

SUB CODE: MA, ME/ SUBM DATE: none/ ORIG REF: 003/ ATD PRESS: 4141

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APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

SKLYAREVICH, Akiva Nukhimovich; REYTEL'BAUM, A., red.

[Reduction of linear operators in problems of automatic control] Privedenie lineinykh operatorov v zadachakh avtomaticheskogo upravleniia. Riga, Zinatne, 1965. 155 p. (MIRA 18:11)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

ACC NR: AP6021930 SOURCE CODE: UR/0197/66/000/003/0035/0043

AUTHOR: Sklyarevich, A.; Tsvetkova, E.

ORG: Institute of Electronics and Computer Technology, AN LatSSR (Institut elektroniki i vychislitel'noy tekhniki AN LatSSR)

TITLE: Statistical characteristics of the number of cycles of faultless operation of a logical automaton in the case of failures

SOURCE: ANLatSSR. Izvestiya, no. 3, 1966, 35-43

TOPIC TAGS: automaton, logic circuit, circuit failure, statistic analysis, statistic distribution, circuit reliability

ABSTRACT: From the instant a failure occurs within a logical automaton to the instant this failure is detected, the automaton accurately carries out a certain number of operations. Since the number of faultless cycles is a statistical event, the authors derived equations yielding the statistical distribution of automaton operations during the transient and stationary operating conditions. The theory applies to arbitrary primitive or inertial automatons with a single output whose operating conditions are specified by a diagram of cycles showing all the

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transitions which are possible within the automaton. The transitions within the automaton occur during a certain operating time interval, the input of the automaton accepts potential signals, the statistical characteristics of input signals remain constant for all intervals of the automaton's operation, the signals appearing at the input are statistically mutually independent, the changes in input signals occur only during the start of an interval, failures also appear only at the start of intervals, all transitions within the automaton are possible, and the logical automaton responds instantaneously, i.e., the output signal changes for all practical purposes simultaneously with the change of input signals so that during the operating time interval there occur no variations in the input or output signals. The methodology is presented for the determination of the statistical characteristic of the number of cycles of faultless operation of automatons following the occurrence of a failure. Orig. art. has: 35 formulas, 1 table, and 2 figures.

SUB CODE: 09,12 / SUBM DATE: 17Aug65/ ORIG REF: 004

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

ACC NR: AM6009588 Monograph UR/

Sklyarevich, Akiva Nukhimovich

Reducing linear operators in problems of automatic control (Privedeniye lineynykh operatorov v zadachakh avtomaticheskogo upravleniya) Riga, Izd-vo "Zinatne," 1965. 155 p. illus., biblio. (At head of title: Akademiya nauk Latviyskoy SSR. Institut elektroniki i vychislitel'noy tekhniki) 2500 copies printed.

TOPIC TAGS: automatic control theory, control system stability, linear automatic control

PURPOSE AND COVERAGE: This book was written with the objective of systematizing methods for reducing linear nonstationary to operators describing automatic control systems with variable parameters to stationary operators, and of applying these methods to the solution of problems in the analysis of such dynamic systems. The greatest attention is paid to methods for reducing linear nonstationary operators to sums and products of stationary operators for corresponding kernels. The application of these methods to finding the weighting function of a linear dynamic system with variable parameters, to determining its stability, and to estimating the upper and lower bounds of the system response to a given input is shown. This book is based on articles

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

ACC NR: AM6009588

published in 1961—1964 in Avtomatika i telemekhanika (Automation and telemechanics), and in the irregular serial Avtomatika i vychislitel'naya tekhnika (Automation and computer engineering) published by the Academy of Sciences, Latvian SSR. It also presents new facts which are, as yet, unpublished elsewhere.

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Ch. VII. The approximation of a nonstationary system by a stationary one. The stability of a nonstationary system -- 131
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Card 2/2 SUB CODE: 09/ SUBM DATE: 07Aug65 / ORIG REF: 012 / OTH REF: 003

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

ACC NR: AP6024854 (N) SOURCE CODE: UR/0371/66/000/002/0083/0090

AUTHOR: Sklyarevich, A. N. -- Sklarovičs, A.; Tsvetkova, E. N. -- Cvetkova, E.

ORG: Institute of electronics and computational techniques AN LatSSR (Institut elektroniki i vychislitel'noy tekhniki AN Latv.SSR)

TITLE: Unconditional statistical characteristics of the number of cycles of perfect work of finite automata

SOURCE: AN LatSSR. Izvestiya. Seriya fizicheskikh i tekhnicheskikh nauk, no. 2, 1966, 83-90

TOPIC TAGS: statistical analysis, distribution function, finite automaton, automaton error theory, automaton reliability theory

ABSTRACT: The problem of finding the distribution function, G(n), of the number n of correct work cycles of a finite automaton from the start until the emergence of error in its output is considered. The non-failure operating time of the automaton is regarded as a random quantity - the sum of two random quantities: the time from start up to the internal occurence of a fault; and the time from the internal fault occurence to the error emergence at the output of the automaton. The statistical characteristics of n_1 - the number of cycles until internal fault occurence, and of n_2 - the number of cycles from the fault occurence until error emergence are assumed to be known and given as the unconditional distribution function $F(n_1)$, and the conditi-

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ACC NR: AP6024854

onal distribution function for n_2 - $\phi(n_2, n_1)$ - under the condition of prior internal error occurence at the n_1-st cycle. General expressions for the desired distribution function G(n) and for the average number of correct cycles, et c. are obtained. An analytical expression for G(n) is obtained in the case of an exponential distribution law of the fault occurence and fault emergence (or fault internal hybernation - Abstractor) time intervals.

SUB CODE: 09, 12/ SUBM DATE: 18Oct65/ ORIG REF: 002

Card 2/2

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2"

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"The Relationship between Complementary and Contrasting Colors," Dok. AN, 67, No. 1, 1949. Mor., Mil. Med. Acad. im. S. M. Kirov, -c1949-.

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"The Relationship between the Intensity of Simultaneous Color Contrast and the Saturation and Color Tone of Induced Color," Dok. AN, 67, No. 2, 1949. Mbr., Mil. Med. Acad. im. S.M. Kirov., -c1949-.

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YUR'YEV, M.A.; SKLYAREVICH, V.V.; KHITUN, V.A. [authors]; OSTROUMOV, G.B. [reviewer].

"Manual and practical studies in physics." Reviewed by G.B.Ostroumov. Usp.fiz.nauk 50 no.2:323-324 Je '53. (MLRA 6:7)
(Physics) (IUr'ev, M.A.) (Skliarevich, V.V.) (Khitun, V.A.)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2"

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FEDOROV, N.T., SKLYAREVICH, V.V.

Determining the colors of simultaneous contrast in the after-image. Probl.fiziol.opt. 12:219-224 '58 (MIRA 11:6)

1. Kafedra meditsinskoy fiziki Voyenno-meditsinskoy ordena Lenina akademii im. S.M. Kirova.
(COLOR SENSE)
(AFTERIMAGES)

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Color measurements in the region of higher colorimetry. Probl. fiziol.opt. 12:225-238 '58 (MIRA 11:6)

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(COLORIMETRY)

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YUR'YEV, Mikhail Alekseyevich; SKLYAREVICH, Viktor Vladimirovich; KHITUN, Vsevolod Andreyevich; GOFMAN, Irina Arturovna; YUZHAKOV, V.M., red.; PERKOVSKAYA, G.Ye., red. izd-va; MURASHOVA, V.A., tekhn. red.

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[Laboratory manual on physics] Praktikum po fizike. [By] M.A.Iur'ev i dr. Moskva, Vysshaia shkola, 1965. 334 p. (MIRA 18:12)

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SKLYAREVSKAYA, M., inzhener.

Combined air foam play pipes. Pozn.delo 3 no.5:17 My '57. (MLRA 10:7)
(Fire extinction--Chemical systems)

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SKLYAREVSKAYA, M., inzh.

Initiative of efficiency promoters in factories. Pozh.delo 4 no.12:3-6 D '58. (MIRA 11:12)
(Factories--Fires and fire prevention)

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TOCHILKINA, V.; SKLYAREVSKAYA, M.

Using an induction motor for corn drying. Pozh.delo 8 no.1:26-27 Ja '62. (MIRA 15:1)

1. Starshiy inspektor Upravleniya pozharnoy okhrany Ministerstva vnutrennikh del USSR (for Sklyarevskaya).
(Corn (Maize)--Drying) (Fire prevention)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2"

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TOCHILKINA, V.G. [Tochylkina, V.H.], inzh.; SKLYAREVSKAYA, M.B. [Skliarevs'ka, M.B.], inzh.

Corn dryer with a reactive motor. Mekh. sil'. hosp. 12 no.12:20-21 D '61. (MIRA 17:1)

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SKLYAREVSKAYA, R.Ya. (Molotov).

Four years of work in controlling helminthiasis. Med.paraz.i paraz.bol. no.4:353-356 Jl-Ag '53. (MLRA 6:9)

(Worms, Intestinal and parasitic)

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SKLYAREVSKAYA, Ye., inzh.

Mechanization of heavy work on livestock farms. Nauka i pered. op. v sel'khoz. 9 no.4:60-61 Ap '59. (MIRA 12:6)
(Farm mechanization) (Stock and stockbreeding)

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KSP-1,8 ensilage harvester. Nauka i pered. op. v sel'khoz. o no.7: 60-61 Jl '59. (MIRA 12:11)
(Ensilage) (Harvesting machinery)

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SKLYAREVSKIY, B.I.

621.398 : 621.316.1 : 621.395.5

2473. CHANNELS FOR SIGNALLING OVER CONDUCTORS OF COMMUNICATION LINES. B.I. Sklyarevskiy.
Elekt. Stantsii, 1956, No. 9, 39-42. In Russian.

Outlines several different arrangements for transmitting signals over telephone circuits for remote control of power systems. The frequency band 300-2300 c/s may be used for the telephone connection and 4300-2400 c/s or 3300-2700 c/s for the transmission of signals according to whether the same or a second frequency is used in the opposite direction. Special reference is made to U.S.S.R equipment

F Bussemann

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Reliability of [illegible] communication systems. Fisk. stat. 35 [illegible] 64 [illegible] 64. (MIRA 17:6)

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SKLYAREVSKIY, L., kand.med.nauk

These plants are needed in medicine. Nauka i zhizn' 29 no.7: 86-87 Jl '62. (MIRA 16:6)

(Botany, Medical)

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SKLYAREVSKIY, L. YA.

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SO: [illegible], [illegible] Dec 1954

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SKLYAREVSKIY, L.Ya.

Food poisoning from aconite. Vop.pit. 14 no.6:42-43 N-D '55. (MLRA 9:1)

1. Iz buyro subednomeditsinskoy ekspertizy Ministerstva zdravookhraneniya Kazakhskoy SSR.
(ACONITE--TOXICOLOGY) (FOOD POISONING)

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Experimental study of acute sodium fluosilicate poisoning. Trudy Inst.kraev.pat. AN Kazakh.SSR 4:226-234 '56. (MLRA 10:3)
(SODIUM FLUOSILICATES—TOXICOLOGY)

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SKLYAREVSKIY, L.Ya., kand.med.nauk

Medicine made from madder Rubia tinctorum. Nauka i zhizn' 29 no.6:70-71 Je '62. (MIRA 15:10)

(MADDER) (MATERIA MEDICA, VEGETABLE)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2"

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SKLYAREVSKIY, L. Ya., kand. med. nauk

Ginseng and its relatives. Nauka i zhizn' 29 no.9:75-79 S '62. (MIRA 15:10)

(GINSENG)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2"

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KONDRATENKO, P.T.; SKLYAREVSKIY, L.Ya.; KHOTIN, A.A.

Problems of biological science in studying and using medicinal plants. Apt. delo 12 no.6:3-8 N-D '63. (MIRA 17:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut lekarstvennykh i aromaticheskikh rasteniy.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2"

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SKLYAREVSKIY, L. Ya.; KONOVALOV, M.N.

Methodology used in determining the requirement for new drugs. Med. promyshl. SSSR 17 no.8:24-25 Ag'63 (MIRA 17:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut lekarstvennykh i aromaticheskikh rasteniy.

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SKLYAREVSKIY, L. Ya.; SKRONNOVA, I. V.; KONOVALOV, M. N.

"Clinico-morphological demonstration of toxic effects produced by Sekurinin."

report submitted for 3rd Hungarian Conf, Therapy & Pharmacology, Budapest, 9-12 Oct 64.

VILAR Medico-biological Dept, Riga.

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SKLYAREVSKIY, Lazar' Yakovlevich, kand. med. nauk; YUKHNOVSKAYA, S.I., red.

[Poisonous plants] IAdovitye rasteniia. Moskva, Meditsina, 1964. 47 p. (MIRA 17:11)

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SKLYAREVSKIY, M.A., agronom-entomolog; BAGRYANTSEV, A.I., agronom-ekonomist

Hexachloran suspensions for controlling wireworms. Zashch. rast. ot vred. i bol. 9 no. 4:8 '64. (MIRA 17:5)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

MADOYAN, A.A.; SHALAGIN, A.D.; MADOYAN, L.G.; SKLYAREVSKIY, N.P.

Study of the starting operation of the TP-170-1 boiler.
Energ. i elektrotekh. prom. no.2:18-22 Ap-Je '63. (MIRA 16:7)

1. Yuzhnoye otdeleniye Gosudarstvennogo tresta po organizatsii i ratsionalizatsii rayonnykh elektrostantsiy i setey i Odesskaya teploelektrotsentral'.
(Boilers)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

KALINOVSKIY, N.N., kand.tekhn.nauk; SHALAGIN, A.D., inzh.; SKLYAREVSKIY, N.P., inzh.

Testing of airtight chloroprene rubber coatings during the operation of the condenser of a sea water cooled thermal electric power plant. Energomashinostroenie 9 no.9:32-35 S '63. (MIRA 16:10)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

PA - 2669

AUTHOR SKLYAREVSKIY,V.V., FOMENKO, D.E., STEPANOV,E.P.

TITLE Investigation of U^{235} Fission γRays in the Energy Range up to 25o keV
(Izlucheniye γ-luchey deleniya U^{235} v oblasti energiy do 25o keV-
Russian)

PERIODICAL Zhurmal Eksperim. i Teoret. Fiziki,1957, Vol,32, No.2, pp 256-262
U.S.S.R.
Received 5/1957 Reviewed 6/1957

ABSTRACT The process described in the paper under review uses the method of geometrical fission, in which the γ-rays that are emitted from the fission product are measured separately. With the aid of this method it was possible to determine that the main part of the γ-rays(at fissions in the energy range up to 25o keV) is emitted by the fission products. The experimental arrangement is demonstrated in a sketch. An ionization chamber with a layer of U^{235} was placed into a bundle of thermal neutrons of a reactor. The spectrum of the γ-rays was measured by means of a scintillation spectrometer with NaJ(Tl) crystal.
The results and their discussion: Several diagrams show the spectra of the true and of the accidental coincidences. The peaks of these spectra are probably caused by secondary effects. The peak at 6o keV is created by nonelastic scattering of the fission neutrons by the iodine nuclei in the NaJ(Tl) crystals. The peak at 75 keV characterizes the Roentgen-K-radiation of lead which is caused in the protective layer (surrounding the crystal) by γ-rays

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

Investigation of U^{235} Fission γ-Rays in the Energy Range up to 25o keV. PA - 2669

and fission neutrons. The spectra were recorded in different positions of the crystal and they have almost identical shapes but different intensities. The spectrum of the γ-rays which are created at fission in the energy range from loo to 25o keV consists of many lines. These lines correspond to the γ-rays which are emitted by different fission products in excited states. These states are created after the emission of neutrons and hard γ-rays by the fission fragments. The life span of these states ($\sim 10^{-9}$sec) obviously indicates a dipole-like character of the transitions. To the quadrupole transition with the life span of 10^{-9} sec there corresponds a quadrupole moment of the nucleus of $\sim 2.5 \cdot 10^{-24} cm^2$.
(6 reproductions and 1 chart).

ASSOCIATION Institute of Atomic Energy, Academy of Sciences of the USSR.
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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

SKLYAREVSKIY, V.V., Cand Phys-Math Sci--(diss) "Study of soft gamma-rays ~~originating~~ occurring in the interaction ~~of~~ between thermal neutrons ~~with the~~ and nuclei." Mos, 1958. Cover, 4 pp (Mos Engin-Phys Inst), 100 copies (KL,[illegible]-58,102)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

SKLYAREVSKIY, V. V.

89-1-2/29

AUTHORS: Sklyarevskiy, V.V., Stepanov, Ye.P., Obinyakov, B.A.

TITLE: The Measuring of Gamma Quanta Produced by the Capture of Thermal Neutrons in Some Rare Earth Nuclei (Issledovaniye γ-luchey, voznikayushchikh pri zakhvate teplovykh neytronov yadrami nekotorykh redkozemel'nykh elementov)

PERIODICAL: Atomnaya Energiya, 1958, Vol. 4, Nr 1, pp. 22-25 (USSR)

ABSTRACT: By means of a scintillation spectrometer the energies of the γ quanta, their intensities, and the conversion coefficients were measured as follows:

γ radiating nucleus	E_γ in KeV	intensity (number of quanta per neutron capture	multipole order	α_K	α_L
Er^{168}	82	0.18	E 2	1.6	2.1
	185	0.64	E 2	0.20	0.084
Hf^{178}	92	0.19	E 2	1.0	1.7
	213	0.55	E 2	0.13	0.07
Gd^{158}	79	0.104	E 2	2.0	2.05
	183	0.22	E 2	0.22	0.09

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

The Measuring of Gamma Quanta Produced by the Capture of Thermal Neutrons in Some Rare Earth Nuclei 89-1-2/29

Gd^{156}	87	0.137	E 2	1.37	1.25
	196	0.277	E 2	0.17	0.054
Dy^{165}	78	0.028	M 1	4.1	0.68
	104	0.018	E 3	3.4	22.6
	180	0.16	E 2	0.22	0.1
Eu^{152}	72	0.044			
	90	0.20			
Ho^{168}	121	0.20			
	142	0.31			
Ta^{182}	107	0.152			
	133	0.30			
	170	0.22			
	272	0.7			
Tu^{170}	150	0.073			

There are 5 figures, 1 table, and 12 references, 6 of which are Slavic.

SUBMITTED: August 8, 1957

AVAILABLE: Library of Congress

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

SOV/89-5-4-8/24

AUTHORS: Sklyarevskiy, V. V., Stepanov, Ye. P., Obinyakov, B. A.

TITLE: The Spectrum of Soft γ-Rays Produced at the Capture of Thermal Neutrons of the Nuclei Cu^{63}, Cu^{65}, Ag^{107}, Ag^{109}, and In^{115} (Spektry myagkikh γ-luchey, voznikayushchikh pri zakhvate teplovykh neytronov yadrami Cu^{63}, Cu^{65}, Ag^{107}, Ag^{109} i In^{115})

PERIODICAL: Atomnaya energiya, 1958, Vol 5, Nr 4, pp 454-456 (USSR)

ABSTRACT: The soft γ-rays were measured by means of a scintillation spectrometer with a NaJ(TI)-crystal. The experimental arrangement and the measuring method are precisely described (Ref 1). The following γ-quanta were measured:

γ-emitting isotope	E_γ in keV	Intensity (Number of the quanta per captured neutron)
Cu^{64}	155 ± 5	0,23 ± 0,04
	205 ± 10	0,05 ± 0,02
	276 ± 10	0,25 ± 0,05

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

SOV/89-5-4-8/24

The Spectrum of Soft γ-Rays Produced at the Capture of Thermal Neutrons of the Nuclei Cu^{63}, Cu^{65}, Ag^{107}, Ag^{109}, and In^{115}

Cu^{66}	92 ± 5	0,13 ± 0,03
	180 ± 10	0,34 ± 0,10
Ag^{108}	82 ± 2	0,20 ± 0,04
	117 ± 2	0,11 ± 0,02
	199 ± 3	0,34 ± 0,06
Ag^{110}	78 ± 3	0,09 ± 0,03
	116 ± 2	0,21 ± 0,04
	196 ± 3	0,32 ± 0,06
	232 ± 10	0,07 ± 0,02
In^{116}	70 ± 5	0,05 ± 0,02
	102 ± 3	0,18 ± 0,04
	175 ± 5	0,31 ± 0,06
	285 ± 10	0,42 ± 0,08

The results obtained agree well with previously obtained results.

V. S. Zolotarev placed a sufficiently large amount of enriched

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

SOV/89-5-4-8/24

The Spectrum of Hard γ-Rays Produced at the Capture of Thermal Neutrons of the Nuclei Cu^{63}, Cu^{65}, Ag^{107}, Ag^{109}, and In^{115}

isotopes at the authors' disposal. L. V. Groshev and D. P. Grechukhin took part in discussions on this paper.
There are 2 figures, 1 table, and 5 references, 4 of which are Soviet.

SUBMITTED: May 10, 1958

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APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

21(8) SOV/56-36-1-52/62

AUTHORS: Sklyarevskiy, V. V., Stepanov, Ye. P., Medvedev, B. A.

TITLE: The X-Ray K-Radiation of the Fragments of Fission and the Charge Distribution of Fragments (Rentgenovskoye K-izlucheniye oskolkov deleniya i raspredeleniye oskolkov po zaryadam)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 1, pp 326-328 (USSR)

ABSTRACT: The present paper deals with new measurements of the spectrum of the soft γ-rays produced in the fission of U^{235}. On the basis of the results obtained by these measurements, the widths of the distribution of heavy and light fragments over the charges were then estimated. The experimental system consisted of an ionization chamber with a layer of U^{235} (which was subjected to the action of a beam of thermal neutrons of the RFT reactor of the AS USSR) and of a xenon-proportional counter for recording γ-rays. A diagram shows the spectrum of the γ-rays in the fission of U^{235} within the energy range of 10-50 kev. The spectrum contains two intense non-monochromatic lines, the maxima of

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which correspond to the energies (16 ± 1) and (31 ± 1.5) kev; the half-widths amount to 35 and 22% respectively. These lines undoubtedly belong to the X-ray K-radiation of the fragments of the light and heavy groups. The energy distribution W(E) of the X-ray K-radiation of the fragments is apparently connected with the charge distribution W(Z) of the fragments. On the basis of the results obtained it is therefore possible to estimate the widths of W(Z). In this connection it may be assumed that the distributions W(E) and W(Z) are Gaussian curves with the total widths δ_E and δ_Z at half the height of the line. The values of δ_Z/Z_0 are (14.5 ± 3)% and (8.5 ± 1.5)% for the light and for the heavy group of fragments respectively. Here $\delta_Z/Z_0 = \delta_E/2E_0$ holds, and the energies E_0 correspond to the positions of distribution maxima with respect to E. The values obtained here for the width of the distribution of fragments over the charges are only approximated values. The intensity of the line with the energy of 16 kev amounted to 0.10 ± 0.03 quanta per fission. The authors thank

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The X-Ray K-Radiation of the Fragments of Fission and the Charge Distribution of Fragments SOV/56-36-1-52/62

V. M. Strutinskiy for some valuable advice. There are 1 figure and 4 Soviet references.

SUBMITTED: September 13, 1958

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

SOV/56-36-2-59/63

21(8)

AUTHORS: Samoylov, B. N., Sklyarevskiy, V. V., Stepanov, Ye. P.

TITLE: The Polarization of the Au^{198} Nuclei in a Solution of Gold in Iron (Polyarizatsiya yader Au^{198} v rastvore zolota v zheleze)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 2, pp 644-645 (USSR)

ABSTRACT: G. R. Khutsishvili (Ref 1) suggested a method for the polarization of the nuclei of ferromagnetic elements. The authors tried to generalize this method to nuclei of non-ferromagnetic elements introduced into a ferromagnetic. The present paper discusses the results of the investigation of the polarization specified in the title. The sample of the Au-Fe-alloy (0.3 weight percent) - a disk of 0.3 cm diameter and 0.01 cm thickness) was irradiated by thermal neutrons in a reactor. After irradiation, the sample was tempered in vacuum and it was fastened to the end of a copper "cold conductor". Au^{198} is desintegrated by β-decay (transition $2^- \rightarrow 2^+$) and then a γ-radiation of 411 kev (transition $2^+ \rightarrow 0^+$) is emitted. At a temperature of $\sim 0.015^\circ K$, the value of anisotropy is equal to 3.3%. The degree of magnetization of the sample in a constant magnetic field amounted to ~ 0.6 of the saturation value.

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SOV/56-36-2-52/63

The Polarization of the Au^{198} Nuclei in a Solution of Gold in Iron

The true value of the anisotropy (which corresponds to a 100% magnetization of the sample), therefore is equal to $\varepsilon = 3.3/0.6 = 5.5\%$. According to these results, the value of $\beta = \mu H/kTI$ is within the interval 0.3 - 0.4, and the polarization f_1 of the nuclei Au^{198} - within the interval 0.25 - 0.35. (μ denotes the magnetic moment of Au^{198}, I - the spin of Au^{198}, and H - the magnetic field on the nucleus Au^{198}). At $T = 0.015^{\circ}K$, from the measured value $\beta = 0.3 - 0.4$ $H = (0.5 - 0.7).10^6$ Oe. can be deduced. Such a high field strength can be explained only by the existence of a magnetic moment in the electron shell of the Au atoms contained in the Au-Fe alloy. The formation of such a magnetic moment can be caused by the exchange interaction between the electron shells of the Au and Fe atoms in the Au-Fe alloy. It is not impossible, however, that the Au atoms in the Au-Fe alloy are paramagnetic ions which have no exchange bonds with the Fe atoms. It is hoped that the method of introducing nuclei into ferromagnetic alloys considerably increases the number of the elements which are subjected to polarization. Moreover, the investigation of the polarization of nuclei in various alloys may supply data concerning the magnetic properties of the atoms in these

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

SOV/56-36-2-59/63

The Polarization of the Au^{198} Nuclei in a Solution of Gold in Iron alloys. There are 4 references, 1 of which is Soviet.

SUBMITTED: November 25, 1958

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APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

24(3), 21(0) SOV/56-36-5-7/76

AUTHORS: Samoylov, B. N., Sklyarevskiy, V. V., Stepanov, Ye. P.

TITLE: Polarization of Cobalt- and Iron Nuclei in Ferromagnetics (Polyarizatsiya yader kobal'ta i zheleza v ferromagnetikakh)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 5, pp 1366-1367 (USSR)

ABSTRACT: Several years ago Khutsishvili suggested a method for the polarization of the nuclei of ferromagnetic substances, which was verified experimentally at 0.05 - 0.08°K by N. Ye. Alekseyevskiy, I. F. Shchegolev and N. V. Zavaritskiy. Similar experiments were successfully carried out also at Oxford. The authors of the present report describe the results obtained by polarization investigations on Co^{60}- and Fe^{59}-nuclei. They worked with the polycrystalline ferromagnetic alloy "Permendure" (Co:Fe=50:50); the sample had a thickness of 0.2 mm and a diameter of 3mm. It was irradiated in a reactor with thermal neutrons, after which it was tempered in a vacuum, following which it was subjected to cold- and magnetic treatment (1000 oe). The

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

Polarization of Cobalt- and Iron Nuclei in Ferromagnetics

SOV/56-36-5-7/76

occurring γ-radiation was recorded by means of two scintillation counters with CsJ-crystals. The activity of the samples amounted to 3 - 4 μC. Several series of measurements were carried out on two samples. The results are shown by a figure, a diagram which represents $\sqrt{\varepsilon}(1/T)$. It holds that $\varepsilon = 1 - N(0)/N(\pi/2)$. N(0) is the number of counts along the field, $N(\pi/2)$ is the number of counts transverse to the field. The measuring results are scattered about a straight line which may be represented by $\varepsilon = 1.2.10^{-4}T^{-2}$. At very low temperatures a deviation from this law occurs. For $H = 2.5.10^5$G the authors obtained a value of the constant of hyperfine splitting $A = 2.4.10^{-2}$ ^oK, which is in good agreement with the values obtained in reference 4. Experiments carried out with respect to the polarization of iron nuclei in Armco iron samples (3 mm diameter, 0.1 mm thickness, activity 2-3μC) showed that within the range of from 0.01 - 0.03 to 1 ^oK no anisotropy

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

Polarization of Cobalt- and Iron Nuclei in Ferromagnetics

SOV/56-36-5-7/76

of γ-radiation could be observed. At $H = 2.5 \cdot 10^5$ G and $\varepsilon \lesssim 0.5\%$, μ was determined as amounting to $\mu \leq 1.5$ nuclear magnetons. The authors finally thank Ye. K. Zavoyskiy for his interest and advice, and L. V. Groshev for discussing the results. There are 1 figure and 5 references, 2 of which are Soviet.

SUBMITTED: November 25, 1958

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

24(3) SOV/56-36-6-56/66

AUTHORS: Samoylov, B. N., Sklyarevskiy, V. V., Stepanov, Ye. P.

TITLE: Nuclear Polarization of Weakly Magnetic Elements, Introduced Into Ferromagnetics (Polyarizatsiya yader slabomagnitnykh elementov, vvedennykh v ferromagnetik)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 6, pp 1944-1946 (USSR)

ABSTRACT: Following an earlier paper (Ref 1) on the polarization of Au^{198}-nuclei in Au-Fe-alloys, the authors in the present "Letter to the Editor" publish results obtained by polarization measurements of Sb^{122}-nuclei in weak Sb-solutions in iron and of In^{114m}-nuclei in such In-solutions in Fe. An Sb-Fe-alloy (0.6 weight% Sb) was irradiated in a reactor with thermal neutrons; the activity of the Sb^{122} amounted to about 4 μC. The results obtained by one of each of the measurements of the anisotropy of γ-radiation carried out are given by a figure (E_γ = 566 kev (transition $2^+ \rightarrow 0^+$), γ-emission after

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Nuclear Polarization of Weakly Magnetic Elements, Introduced Into Ferromagnetics SOV/56-36-6-56/66

β-decay of Sb^{122} (transition $2^- \rightarrow 2^+$)). The experimental points show the dependence of the intensity of the γ-rays counted by means of a detector at angles of $\theta = 0^\circ$ and 90° to the field direction upon time after demagnetization of the salt. Between 5 to 50 min the temperature changed from 0.025 to 0.035° K. 10 minutes after demagnetization a γ-anisotropy of $\varepsilon = 2.5$ % was measured at a temperature of 0.03° K. ($\varepsilon = 1-N(0^\circ)/N(90^\circ)$ - N denotes the number of counts at an angle (θ)). For In-Fe (0.5 weight% In) the following results are obtained: In^{114m}: $E_\gamma = 192$ kev ($5^+ \rightarrow 1^+$), T (5 min after demagnetization) 0.035° K; $\varepsilon \approx 8$ % at T = 0.04° K. Further, Cr^{51} was investigated in Cr-Fe. Results: $E_\gamma = 320$ kev ($5/2^- \rightarrow 7/2^-$), γ-emission after K-capture of the Cr^{51} ($7/2^- \rightarrow 5/2^-$) within the temperature interval of from 0.03 to 1° K. There follows a short discussion of measurement accuracy and of the results obtained. It may be concluded from these results that the method of the nuclear polarization of weakly magnetic atoms by introducing them into a ferromagnetic has universal character and

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

Nuclear Polarization of Weakly Magnetic Elements, Introduced Into Ferromagnetics SOV/56-36-6-56/66

renders it possible to attain relatively high degrees of polarization. The authors finally thank Ye. K. Zavoyskiy for his valuable advice, L. D. Puzikov for his assistance in calculating the angular distribution of γ-radiation, and L. V. Groshev, V. M. Galitskiy, and D. P. Grechukhin for discussions. There are 1 figure and 4 references, 1 of which is Soviet.

SUBMITTED: March 10, 1959

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APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

SKLYAREVSKIY, V. V.

"Polarization of Nuclei of Weakly Magnetic Elements Introduced in Ferromagnets."

report submitted for the Intl. Conference on Low Temperature Physics, IUPAP, Toronto, 29 Aug--3 Sep 60.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

SAMOYLOV, B.N.; SKLYAREVSKIY, V.V.; STEPANOV, Ye.P.

Polarization of the nuclei of diamagnetic elements dissolved in iron. Zhur.eksp.i teor.fiz. 38 no.2:359-371 F '60. (MIRA 14:5)
(Diamagnetism) (Nuclei, Atomic)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

SAMOYLOV, B.N.; SKLYAREVSKIY, V.V.; GORODCHENKO, V.D.; [redacted]
STEPANOV, Ye.P.

Asymmetry of the beta radiation from Co 60 nuclei polarized in a cobalt-iron alloy. Zhur. eksp. i teor. fiz. 40 no.6:1871-1874 Je '61. (MIRA 14:8)

(Beta rays)
(Cobalt--Isotopes)
(Cobalt--Iron alloys)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

SKLYAREVSKIY, V.V.; SAMOYLOV, B.N.; STEPANOV, Ye.P.

Temperature dependence of the magnitude of the hyperfine splitting of Dy^{161} levels in paramagnetic dysprosium oxide. Zhur. eksp i teor. fiz. 40 no.6:1874-1876 Je '61. (MIRA 14:8)

(Dyprosium--Isotopes)
(Dyprosium oxide--Magnetic properties)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

S/056/61/041/006/018/054
B102/B138

AUTHORS: Samoylov, B. N., Sklyarevskiy, V. V., Gorobchenko, V. D.

TITLE: Determination of the sign of the local magnetic field on nuclei of gold dissolved in iron or nickel

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 41, no. 6(12), 1961, 1783-1786

TEXT: In a previous paper (Ref. 2: ZhETF, 40, 1871, 1961) the authors have reported on a method of determining the magnitude and sign of a local magnetic field from the asymmetry in angular distribution of the β-radiation of polarized nuclei. Theoretical problem are discussed first. The asymmetry, which is defined as $\varepsilon_\beta = [N(0)-N(\pi)]/N_0$, where N_0 denotes the isotropic count, is given by

$$\varepsilon_\beta \approx -\frac{1/3 + 2\sqrt{3/3}\,\lambda/\mu}{1+(\lambda/\mu)^2}\,\frac{p}{W}\,\frac{\mu_n H_n}{k}\,\frac{1}{T}. \qquad (4);$$

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$p = \sqrt{W^2-1}$ is the electron momentum, λ and μ are parameters, linear combinations of the nuclear matrix elements as defined by Morita-Morita (Phys. Rev. 109, 2048, 1958), μ_I is the nuclear magnetic moment and H_n the local field. The experimental arrangement has been described in Ref. 2. After activation by thermal neutrons the specimens, containing ~0.3% by weight gold and ~ 1% by weight iron and nickel, respectively, were annealed at ~1000°C for 2-3 hr. ε_n was plotted as a function of 1/T and after corrections had been incorporated, it was found from the gradient of the straight lines that: $\varepsilon_n = -(8.9\pm0.3)\cdot10^{-3}T^{-1}$ for gold in iron and $\varepsilon_n = -(1.6\pm0.1)\cdot10^{-3}T^{-1}$ for gold in nickel. With Eq. (4) the following was found

$$H_n = (6{,}2\pm0{,}2)\frac{\sqrt{1+(\lambda/\mu)^2}}{1/3+2\sqrt{2/3}\lambda/\mu}\cdot10^5\ \text{Oe};\quad H_n = (1{,}1\pm0{,}07)\frac{1+(\lambda/\mu)^2}{1/3+2\sqrt{2/3}\lambda/\mu}\cdot10^5\ \text{Oe}. \qquad (A)$$

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for gold in iron and gold in nickel, respectively. With R. M. Steffen's value $\lambda/\mu = -1 \pm 0.7$ (Phys. Rev. 118, 765, 1960) the local field strength $H_q \approx -1.0 \cdot 10^6$ oe is calculated for iron and is in agreement with earlier measurements by the authors (ZhETF, 38, 359, 1960). In nickel it is $\approx -1.8 \cdot 10^6$ oe, which is 5.6 times less, but in both cases it is in the opposite direction to the domain field. This could either be attributed to the contact field of the inner s-shells electrons or to contact interaction with polarized electrons. The latter, however, is in contradiction with results by Ye. I. Kondorskiy (ZhETF, 40, 381, 1961). The authors thank Ye. K. Zavoyskiy, L. V. Groshev, Ya. A. Smorodinskiy, D. P. Grechukhin, D. F. Zaretskiy, Yu. M. Kagan and L. D. Puzikov for discussions and O. A. Chilashvili, V. N. Agureyev, N. V. Razzhivin, I. B. Filippov, N. Ye. Yukovich, V. A. Drozdov and V. D. Sheffer for assistance. There are 2 figures and 8 references: 4 Soviet and 4 non-Soviet. The four most recent references to English-language publications read as follows: B. N. Samoilov et al. Proc. VII Int. Conf. Low Temp. Physics, Toronto, 1960, p. 171; L. D. Roberts, J. O. Thomson. Bull. Amer. Phys. Soc., 6, 230, 1961;

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

S/056/61/041/006/018/054
B102/B138

Determination of the sign of the local . . .

D. A. Goodings, V. Heine. Phys. Rev. Lett., 5, 370, 1960; A. J. Freeman, R. E. Watson. Phys. Rev. Lett., 5, 498, 1960.

SUBMITTED: July 17, 1961

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APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

SAMOYLOV, B. N., SKL[illegible], V. V. and [illegible], V. [illegible]

"The sign of the local magnetic field on nuclei of gold dissolved in iron and nickel"

report to be submitted for the 8th Intl. Conf. on Low Temperature Physics (IUPAP) London, England, 16-22 Sep 62

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

SKLYAREVSKIY, V. V., ALESHIN, , P., GOROBCHENKO, V. D., LUKASHEVICH, T. I., SAMOYLOV, B. N., and STEPANOV, YE. P.,

"Unsplit Absorption line of Dy^{161} of Natural Width in Dy_2O_3 at t = 500°C,"

report presented at the 3rd Intl. Conf. on the Mossbauer Effect, Cornell Univ., New York, 4-7 Sep 63.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

SKLYAREVSKIY, V. V., STEPANOV, YE. P., ALESHIN, K, P., and SAMOYLOV, B. N.,

"The Mossbauer Effect in Te^{125},"

report presented at the 3rd Intl. Conf. on the Mossbauer Effect, Cornell Univ., New York, 4-7 Sep 63

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2"

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L 16552-65 EWT(1)/EEC(t) Peb ESD(t)/ESD(gs)/AEDC(a)/SSD/AFWL/AS(mp)-2/
IJP(c)
ACCESSION NR: AP4044667 S/0120/64/000/004/0043/0049

AUTHOR: Aleshin, K. P.; Lukashevich, I. I.; Samoylov, B. N.; Sklyarevskiy, V. V.; Stepanov, Ye. P.; Filippov, N. I.

TITLE: System for investigating the Mossbauer effect

SOURCE: Pribory* i tekhnika eksperimenta, no. 4, 1964, 43-49

TOPIC TAGS: Mossbauer effect, Mossbauer effect investigation, vibrator, aerodynamic vibrator, Mossbauer spectrum, gamma ray, gamma ray source

ABSTRACT: The proposed system, in which motion is produced by a special electrodynamic vibrator at a constant velocity of up to ~ 8 cm/sec, was designed for investigating the Mossbauer effect. The low amplitude of source motion (1—2 mm) makes it possible to conduct both the absorption and the dispersion measurements of the Mossbauer spectra. The electrodynamic vibrator, which is described in detail, provides for a constant velocity within ± 1%. The vibrator makes it possible to conduct measurements at frequencies of up to 20 cps. The maximum velocity of 8 cm/sec is achieved at 16 cps. The electronic part of the system provides for registration by means of a NaI (Tl) crystal and a photomultiplier of γ-quanta passing through a resonant absorber. From the photomultiplier the pulses are applied to a single-channel analyzer whose window is directed toward the photopeak of the

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L 16552-65

ACCESSION NR: AP4044667

γ-rays investigated. The equipment is designed so as to make it possible to change the measurement time easily and to pass from one operating frequency to another. The resolution time of the registration channel is ∿ 1 μsec. The characteristics and velocity calibration of the system were studied by measuring the absorption spectrum of Fe^{57} γ-rays with an energy of 14.4 kev. The source was Co^{57}, and the absorber was $Fe_2^{57}O_3$. Measurements of the line drift have shown that after heating the system for 2 hr, the drift in velocity does not exceed ± 0.5% for 8 hr of operation. Orig. art. has: 6 figures.

ASSOCIATION: none

SUBMITTED: 23Jul63 ENCL: 00 SUB CODE: EM, EC, NP

NO REF SOV: 003 OTHER: 003

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APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001551020005-2

L 24372-66 EWT(1)/EWT(m)/EPF(n)-2 IJP(c) JD/JG

ACC NR: AP6010437 SOURCE CODE: UR/0386/66/003/005/0212/0216

AUTHOR: Sklyarevskiy, V. V.; Lukashevich, I. I.; Romanov, V. P.; Filippov, N. I.; Venevtsev, Yu. N.; Viskov, A. S.

ORG: none

TITLE: Mossbauer effect in the ferroelectric $Pb(Fe_{1/2}Nb_{1/2})O_3$

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 3, no. 5, 1966, 212-216

TOPIC TAGS: ferroelectric material, Mossbauer spectrum, miltiplet splitting, critical point, phase transition, Curie point, electron spin

ABSTRACT: The purpose of the investigation was to check on the presence of a minimum of the probability of the Mossbauer effect on Sn^{119} in the investigated compound, similar to that observed for $Ba(TiSn)O_3$ (with different Ti/Sn ratios) by V. A. Bokov et al. (FTT v. 7, 1886, 1965 and elsewhere). It was also desired to check on other singularities in the behavior of the quadrupole splitting and of the position of the symmetry center of the Mossbauer spectrum observed near the temperature T_c of the ferroelectric phase transition. To this end, the authors investigated the variation of the parameter of the Mossbauer absorption spectrum of Fe^{57} nuclei of the ferroelectric in question at the phase transition temperature (T_c = 114C). The absorbers were made by the usual ceramic technology, using $Fe_2^{57}O_3$ (60% Fe^{57}). The source was Co^{57} in stainless steel. The apparatus for the Mossbauer spectra is described by the authors elsewhere (PTE No. 4, 43, 1964). The results confirm the existence of the

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ACC NR: AP6010437

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singularities in the vicinity of the Curie point T_c = 214C and a minimum in the Mossbauer-effect probability. These singularities are apparently connected with the fact that an anomalous decrease in the frequency of one of the transverse optical branches of the lattice takes place on approaching the ferroelectric transition point in crystals with perovskite structure. The decrease in the quadrupole splitting with increase of temperature to T_c is connected with a decrease in the spontaneous polarization. The asymmetry of the quadrupole-splitting line, which has a minimum near T_c and reverses sign, can be due either to anisotropy of the Mossbauer-effect probability or to relaxation of the electron spins in a ferromagnet. It is concluded that an investigation of the temperature variation of the asymmetry can give important information on the dynamics of the realignment of the crystal structure during the ferroelectric transition. The authors thank F. Ye. Chukreyev and V. I. Man'ko for the computer programming, Yu. M. Kagan, A. M. Afanas'yev, B. N. Samoilov, and B. I. Verkin for discussions, K. P. Aleshin for producing the electronic part of the Mossbauer spectrometer, I. B. Filippov for help with the experiments, and L. I. Kazakevich and E. M. Kabanova for help with the measurements. Orig. art. has: 2 figures.

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ACC NR: AP7007680 SOURCE CODE: UR/0386/66/003/002/0081/0085

AUTHOR: Lukashevich, I. I.; Sklyarevskii, V.V.; Aleshin, K.P.; Samoylov, B. N.; Stepanov, Ye. P.; Filippov, N. I.

ORG: none

TITLE: Mossbauer effect on Dy sup 161 impurity nuclei in metallic gadolinium

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu, v. 3, no. 2, 1966, 81-85

TOPIC TAGS: dysprosium, gadolinium, Mossbauer effect, Mossbauer spectrum, cryostat, gamma spectrometer

ABSTRACT: Irradiation of metallic gadolinium in a reactor (97% Gd^{160}) gives rise to the reaction $Gd^{160}(n\gamma)Gd^{161} \xrightarrow{3.7\ min} Tb^{161}$, and the decay of the Tb^{161} causes emission of γ rays of Dy^{161}. The authors investigated the Mossbauer spectra of such a source, constituting in fact Dy^{161} impurity nuclei in a gadolinium lattice. The magnetic properties of the gadolinium matrix were investigated by studying the hyperfine splitting of the γ rays of these Dy^{161} nuclei.

The absorber used was polycrystalline Dy_2O_3 (40 mg/cm^2, 90% Dy^{161}). At T = 300°K, the $Dy_2^{161}O_3$ has a "thick" absorption line (~1 cm/sec, Γ_{nat} = 0.02 cm/sec), which is suitable, however, for the study of large magnetic hyperfine splittings of the source (~25 cm/sec). A Mossbauer spectrometer was used with a permanent-magnet vibrator, operating in

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the constant-velocity mode. The spectra were measured at different source temperatures from 5 to 300°K. (See Fig. 1)

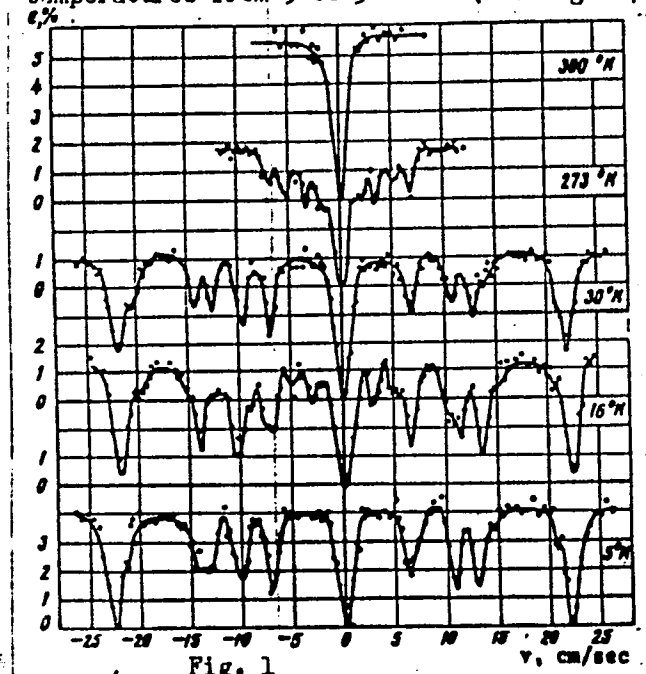

Fig. 1

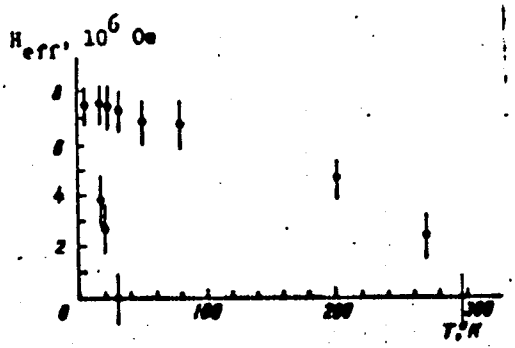

Fig. 2.

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At T = 5°K the spectrum is the usual hyperfine splitting spectrum of Dy^{161}, consisting of 14 lines (not all lines are resolved). The magnitude of the magnetic splitting corresponds to a field ~7.3 x 10⁶ Oe on the Dy nuclei. At T = 16°K the number of lines increases, and at T = 30°K it assumes the previous value, but the relative intensity of the central peak increases sharply compared with the spectrum at 5°K. With further rise in temperature the magnetic splitting decreases gradually and finally vanishes near the Curie point of gadolinium.

This behavior of the spectra can be explained as follows. At T = 5°K there are two different systems of lines (two different spectra) with approximately identical hyperfine splitting. With increasing temperature, the magnetic splitting of one of these spectra decreases rapidly and vanishes at T = 30°K. The lines of the spectra are crowded together and enter the central peak, thus increasing its intensity. Measurements of individual spectral lines at T = 7.5 and 10°K have made it possible to trace the broadening and the splitting of the spectral lines at 5°K. In addition, we measured the individual lines of the spectrum at T = 5°K with an absorber heated to T = 800°K and having a narrower line than at T = 300°K. These measurements have shown that the spectral lines at 5°K are doublets, i.e., this spectrum consists of two different spectra with somewhat differing hyperfine splittings. Two systems of hyperfine splittings were found to correspond to two different states of the electron shell of the Dy ions, produced in the β decay of Tb^{161}. A distinctive feature of this case is that it is observed in a metal, where the relaxation times of the electron shell should seemingly be small. Figure 2 shows the temperature dependence of the

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