ACC NR: AM6030648 Monograph UR/

Gevorkyan, Ashot Mushegovich; Ivanov, Andrey Pavlovich; Metelkin, Aleksandr Fedorovich; Moskalev, Mikhail Aleksandrovich

Technology of aircraft engine construction; a manual for thesis writers (Tekhnologiya aviadvigatelestroyeniya; uchebnoye posobiye po diplomnomu proyektirovaniyu) Moscow, Izd-vo "Mashinostroyeniye", 1966. 174 p. illus., biblio., tables. 9200 copies printed. Textbook for students at aviation schools and faculties.

TOPIC TAGS: aircraft engine, ~~production,~~ production engineering, industrial management

PURPOSE AND COVERAGE: The book is intended for students writing theses on aircraft engine technology, for teaching staffs in aviation institutes, and for production engineers. It can also be useful to other machine building specialities. A systematic presentation is given on the planning of thesis writing on aircraft engine production, production management, introduction of new methods, new machinery, quality control, production automation, and equipment replacement and repair. Included as appendices are several tables dealing with production control and production management. There are 36 references, all Soviet.

Card 1/2 UDC: 629.13.003.3 (075.8)

ACC NR: AM6030648

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SUB CODE: 21, 1 / SUBM DATE: 07May66/ ORIG REF: 036/

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SOKOLOV, A.; MOSKALEV, N.

Economic efficiency of new machinery at the "Russkii Dizel'" Plant.
Sots.trud 6 no.3:112-115 Mr '61. (MIRA 14:3)

1. Glavnyy inzhener zavoda "Russkiy dizel' " (for Sokolov).
2. Nachal'nik otdela truda i zarabotnoy platy (for Moskalev).
(Leningrad—Diesel engines)

KOSMALEV, V. I., [illegible], A. [illegible]

Forest Nurseries

Planting the green ash before inundation, Les i step' No. 3, [illegible]

Monthly List of Russian Accessions, Library of Congress, July [illegible].
Unclassified.

MOSKALEV, N. A.

Arboriculture

Growing seedlings without irrimation.. Les i step' 5, No. 2, 1953.

9. Monthly List of Russian Accessions, Library of Congress, June 1953, Uncl.

MOSKALEV, N. M. Cand Tech Sci -- (diss) "Water-pressure transport of silt."
Mos, 1957. 16 pp with graphs (Min of Agriculture USSR. All-Union Order of
Lenin Acad Agr Sci im V. I. Lenin. All-Union Sci Res Inst of Hydraulic Engineering
and Improvement), 100 copies (KL, 11-58, 117)

MOSKALEV, N.M.

Improve the technology of handling petroleum tanker cargoes.
Rech. transp. 18 no.4:10 Ap '59. (MIRA 13:1)

1.Nachal'nik Astrakhanskogo ekspluatatsionnogo uchastka parokhodstva "Volgotanker".
(Tank vessels) (Cargo handling)

KOVALEV, S.A., inzh., red.; CHERNIN, L.A., inzh., red.; KUZNETSOVA, Z.I., kand. tekhn.nauk; MOISEYENKO, A.T., inzh., red.; MOSKALEV, N.M., kand. tekhn. nauk; VOLKOV, A.V., kand. tekhn. nauk, red.; STRASHNYKH, V.P., red.izd-va; PETROVA, V.V., red.izd-va; MODIONOVA, V.M., tekhn. red.

[Construction norms and regulations] Stroitel'nye normy i pravila. Moskva, Gosstroiizdat. Pt.I. Sec.G. ch.I. [Water-supply and sewer system. Hot-water supply. Interior installation. Equipment, fixtures, and materials] Vodoprovod i kanalizatsiia. Goriachee vodosnabzhenie. Vnutrennie ustroistva. Oborudovaniia, armatura i materialy (SNiP I-G. I-62). 1963. 15 p. Pt.I. Sec.V. ch.17. [Asphalt and tar binders] Bitumnye i degtevye viazhushchie (SNiP I-V. 17-62). 963. 8 p.
(MIRA 16:7)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po delam stroitel'stva. 2. Gosudarstvennyy komitet po delam stroitel'stva Soveta Ministrov SSSR (for Kovalev, Moiseyenko). 3. Mezhvedomstvennaya komissiya po peresmotru Stroitel'nykh norm i pravil Akademii stroitel'stva i arkhitektury SSSR (for Chernin, Moskalev). 4. Nauchno-issledovatel'skiy institut sanitarnoy tekhniki Akademii stroitel'stva i arkhitektury SSSR (for Kuznetsova). 5. Gosudarstvennyy Vsesoyuznyy dorozhnyy nauchno-issledovatel'skiy institut Ministerstva transportnogo stroitel'stva SSSR (for Volkov).
(Water-supply engineering) (Sewerage) (Asphalt)

MOISEYENKO, A.T., inzh.; MOSKALEV, N.M., kand. tekhn. nauk; KOSHKIN, V.G., kand. tekhn. nauk; MKERVALI, O.P., inzh., red.; D'YACHKOV, G.D., inzh., red.; YEVDOKIMOV, V.M., inzh., red.; STRASHNYKH, V.P., red. izd-va; MOLCHALINA, Z.S., tekhn. red.; BOROVNEV, N.K., tekhn. red.

[Construction specifications and regulations] Stroitel'nye normy i pravila. Moskva, Gosstroiizdat. Pt.1. Sec.B. ch.3. [Fundations and supports of piles and cylindrical shels; precast construction (SNiP I-B.3-62)] Fundamenty i opory iz svai i tsilindricheskikh obolochek; sbornye konstruktsii SNiP I-B.3-62). 1963. 7 p. Pt.1. Sec.V. ch.15.[Polymer-base materials and products (SNiP I-V.15-62)] Materialy i izdeliia na osnove polimerov (SNiP I-V.15-62). 1963. 26 p. (MIRA 16:6)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po delam stroitel'stva. 2. Gosstroy SSSR (for Mkervali, Moiseyenko). 3. Mezhduvedomstvennaya komissiya po peresmotru stroitel'nykh norm i pravil (for D'yachkov, Moskalev). 4. Gosudarstvennyy institut po proyektirovaniyu osnovaniy i fundamentov "Fundamentproyekt" Ministerstva stroitel'stva RSFSR (for Yevdokimov). 5. Vsesoyuznyy nauchno-issledovatel'skiy institut novykh stroitel'nykh materialov Akademii stroitel'stva i arkhitektury SSSR (for Koshkin).

(Concrete piling) (Polymers)

KONYUKHOV, I.A.; [illegible], V.I.; TSIN' TSYE-KHUAN

Lithological and bituminological features of the Mesozoic and Lower Paleogene sediments in the Fergana Depression in connection with their oil and gas potential. Geol. nefti i gaza 7 no.5:26-30 My '63. (MIA 17:9)

1. Moskovskiy gosudarstvennyy universitet.

MOSKALEV, M.P. (Alma-Ata).

Mechanized rail smoothing. Put' i put.khoz. no.9:26-27 S '57.
(MIRA 10:10)

1. Glavnyy inzhener sluzhby puti.
(Railroads--Rails)

MOSKALEV, N.P.

Scattered bituminous deposits. N. P. Moskalev. *Vestn. Mosk. Univ.* 7, No. 12, *Ser. Fiz.-Mat. i Estestven. Nauk* No. 8, 119–22(1952).—The analyses of over 1000 mineral samples from tertiary deposits of southern Russia by the method of Florovskaya (*Introduction to Luminescent-Bituminous Analysis* 1949) have been used as an aid in mapping oil- and gas-bearing fields. The similarity in chem. compn. of bitumen and petroleum from the same strata confirmed the genetic relation between these substances.
A. P. Kotlaby

DC MET

Chair of Petroleum & Gas.

USSR/Geophysics - Luminescent - Bituminological Method Mar

MOSKALEV, N. P.

"Luminescent-Bituminological Survey from Basic Deposits," N. P. Moskalev, Chair of Geology of Oil and Gas, M...

Vest Mosk~~ov. U~~, Ser ~~Fiz-Mat~~ i Yest Nauk, No 2, pp 157-160

Describes subject survey method which is being widely used for searching for gas and oil. (A...
~~which~~ was developed by V. N. Florovskaya.

MOSKALEV, N.P.

Luminescent-bituminological survey based on original deposits. Vest.Mosk. un. 8 no.3:157-160 Mr '53. (MLRA 6:6)

1. Kafedra geologii nefti i gaza. (Bitumen) (Fluorescence) (Geological surveys)

MILESHINA, A. G., AND MOSKALEV, N. P.

Geochemical Characteristics of the Tertiary and Cretaceous Deposits of the Kerch Peninsula

The authors give the mineralogical characteristics of the rocks of the Datsk strata, Maikop stage, Chokraksk, Karagansk and Konksk horizons of the Kerch Peninsula, and present some paleoclimatic considerations. They also present several tables characterizing the granulometric and mineralogical compositions of investigated specimens, and also thermographic curves. (RZhGeol, No. 5, 1955) Tr. N.-i. in-ta geofiz. i geokhim. metodov razvedki, No. 2, 1954, 68-79.

SO: Sum. No. 744, 8 Dec 55 - Supplementary Survey of Soviet Scientific Abstracts (17)

MOSKALEV, N.P.

Bitumen content of Cretaceous sediments in the Greater Balkhan Range, Tuar-Kyr, and Mar.gyshlak. Vest.Mosk.un.Ser 4: Geol. 15 no.1:26-36 '60. (MIRA 14:4)

1. Kafedra geologii i geokhimii goryuchikh iskopayemykh Moskovskogo universiteta.
(Uzbekistan--Bitumen--Geology)

MILESHINA, A.G.; MOSKALEV, N.P.

Stylolites in limestones as paths of oil migration. Geol. nefti i gaza 6 no.12:51-53 D '62. (MIRA 15:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologorazvedochnyy neftyanoy institut i Moskovskiy gosudarstvennyy universitet.
(Daghestan--Oil sands--Permeability)
(Stylolites)

MOSKALEV, N.P.

Geochemical characteristics of Jurassic sediments in the Fergana Valley. Vest. Mosk. un. Ser. 4: Geol 18 no.5: 44-47 S-O'63. (MIRA 17:2)

1. Kafedra geologii i geokhimii goryuchikh iskopayemykh.

LARINA, O.G.; MOSKALEV, N.P.; AZIMOV, P.K.

Lithology of Jurassic sediments in the Fergana depression.
Vest. Mosk. un. Ser. 4: Geol. 20 no.4:63-69 Jl-Ag '65.
(MIRA 18:9)

1. Kafedra geologii i geokhimii goryuchikh iskopayemykh.

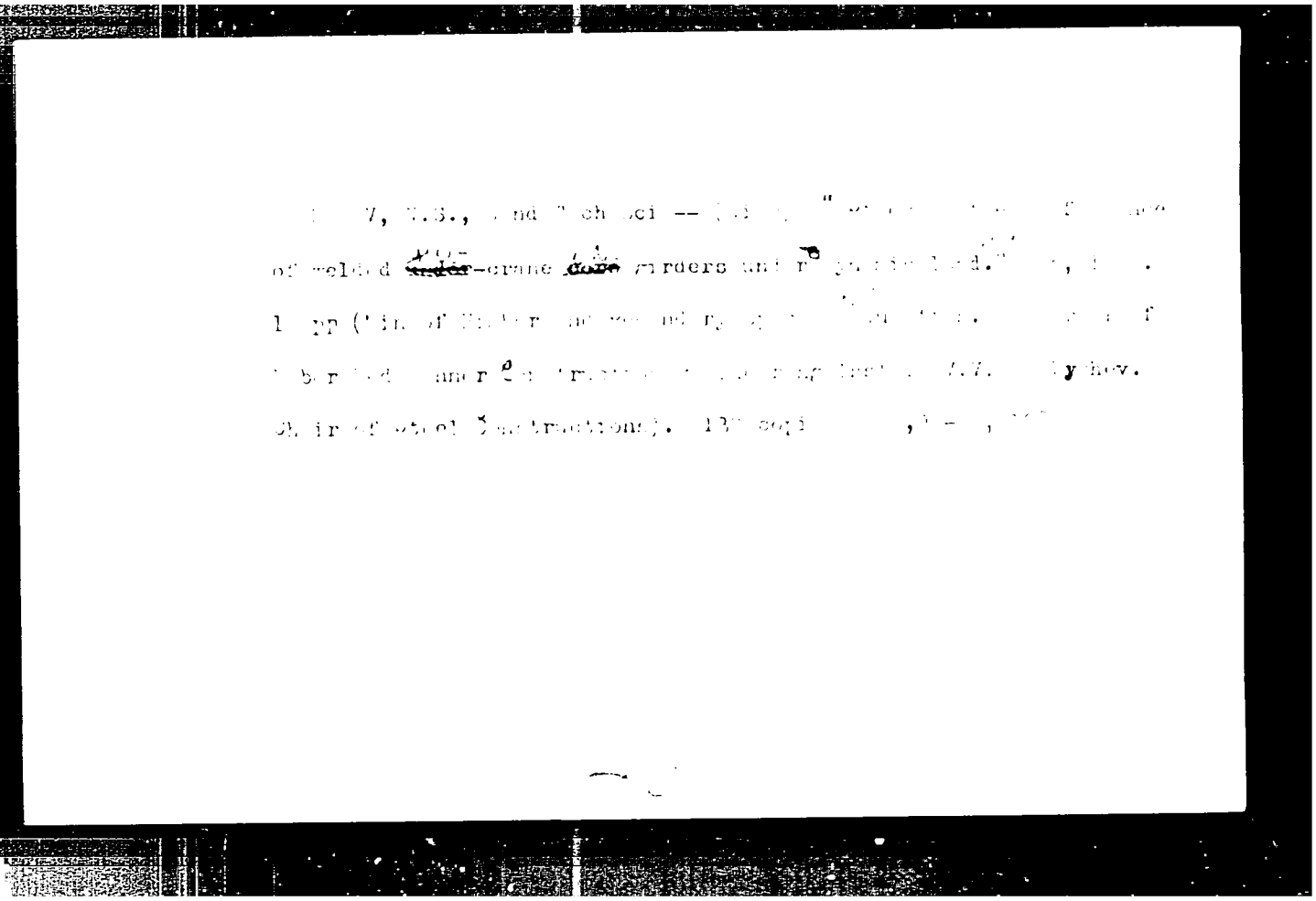
MOSKALEV, N.S., inzh.

Approximation [illegible] stresses in [illegible] due to local torsional load. Nauch.dokl.vys.shkoly; stroi. no.3: 167-172 '58. (MIRA 12:3)

1. Rekomendovana [illegible] Moskovskim inzhenerno-stroitel'nym institutom imeni V.V. [illegible].
(Structural [illegible]) (Girders)

MOSKALEV, N.S., aspirant

Investigating causes for the breaking of welded crane girders.
Sbor.trud.MISI no.22:59-89 ' 58. (MIRA 11:12)
(Girders) (Cranes, derricks, etc.)



S/089/62/012/004/001/014
B102/B104

26 2242

AUTHOR: Moskalev, O. B.

TITLE: Neutron spectrum in a mixture of two non-interacting gases heated to different temperatures

PERIODICAL: Atomnaya energiya, v. 12, no. 4, 1962, 279-282

TEXT: An infinite space is considered which is filled with a mixture of two monatomic gases, which do not react with each other and do not absorb neutrons. The problem is to find the energy spectrum of neutrons scattered from the gas atoms (macroscopic scattering cross sections Σ_1, Σ_2; gas temperatures T_1, T_2). The neutron distribution function is assumed as

$$\int_0^\infty [G_1(v' \to v) + G_2(v' \to v)] N(v')\, dv' = \quad (1), \text{ with}$$

$$= [V_1(v) + V_2(v)] N(v).$$

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S/089/62/013/006/001/014
B102/B104

Neutron spectrum in a mixture ...

$$N_i(v) = \int_0^\infty G_i(v' \to v)\, dv',$$

$$G_i(v' \to v) = \frac{(m_i+1)^2}{4m_i}\,\sigma_i\,\frac{v}{v'}\,\{\operatorname{erf}(\beta_i\theta_i v - \beta_i\zeta_i v') \pm \operatorname{erf}(\beta_i\theta_i v + \beta_i\zeta_i v') \mp e^{\beta_i^2(v'^2 - v^2)} \times [\operatorname{erf}(\beta_i\theta_i v' - \beta_i\zeta_i v) \mp \operatorname{erf}(\beta_i\theta_i v' + \beta_i\zeta_i v)]\};$$

$N_i(v)$ is the neutron density in the velocity space, $G_i(v' \to v)$ is the probability for a neutron scattered from the i-th gas to change its velocity from v' to v; σ_i = const;

$$\beta_i^2 = \frac{1}{2T_i},\quad \theta_i = \frac{m_i+1}{2\sqrt{m_i}},\quad \zeta_i = \sqrt{m_i}\,\theta_i,$$

$$\operatorname{erf}(x) = \frac{2}{\sqrt{\pi}}\int_0^x e^{-u^2}\,du.$$

Card 2/5

Neutron spectrum in a mixture ...

For heavy gases ($m_i \gg 1$) and $E = v^2/2$ (neutron mass = 1), after introducing the flux $\Phi = Nv$, an equation of the type $E\langle T\rangle\Phi'' + E\Phi' + \Phi = 0$ is obtained, where

$$\langle T\rangle = \frac{\Sigma_1 a_1 T_1 + \Sigma_2 a_2 T_2}{\Sigma_1 a_1 + \Sigma_2 a_2},$$

$\Phi(\infty) = 0$. Its solution reads $\Phi(E) = (E/\langle T\rangle^2)\exp(-E/\langle T\rangle)$, i.e., the distribution is Maxwellian. It is shown that the upper limit of integration in (1), ∞, can be replaced by a finite one, n. Then, the system of linear equations

$$\sum_{k=1}^{n} [G_1^{kj} + G_2^{kj} - (V_1^j + V_2^j)\delta_{kj}] N_k = 0,$$

$$G_i^{kj} = G_i(v_k - v_j); \quad V_i^j = \sum_{k=1}^{n} G_i^{kj}$$

is obtained; j = 1,2,...n; i = 1,2; δ_{ik} Kronecker symbol. For n = 7 and one of the unknown N_k taken as equal one, this system was solved with the help of a Strela-1 digital computer. The results obtained fit the above

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Neutron spectrum in a mixture ...

[illegible] curve better than a distribution curve obtained in [illegible] approximation. The spectrum is Maxwellian, not only for heavy (m = [illegible]) but also for light cases (m = 1.2). This result is in contradiction to Ref. [illegible] (L. Kern. Nukleonik, 1, no. 8, 286, 1959). The most important parameter was found to be $1/v$, the reciprocal velocity, averaged over the neutron spectrum (cf. Table). M. V. Maslennikov, L. N. Mayorov, and Yu. S. Kuznetsov are thanked for interest and discussions. There are 1 figure, 1 table, and 5 non-Soviet references. The three references to English-language publications read as follows: D. Kottwitz. Nucl. Sci. and Engng, 7, 345, (1960); H. Herwitz et al. Nucl. Sci. and Engng, 1, 306, 1956; D. Selengut. Nucl. Sci. and Engng, 2, 94, 1961.

SUBMITTED: July 14, 1961

Card 4/5

MOSKALEV, O.B. (Moskva)

Critical operating conditions of a reactor in the case of nonlinear coupling between the temperature and a neutron flux. Zhur.vych.mat.i mat.fiz. 3 no.2:327-336 Mr-Ap '63. (MIRA 16:4)

(Nuclear reactors)

MOSKALEV, O.B.; CHUYANOV, V.A.

Existence and uniqueness of the solution to certain nonlinear problems in the theory of nuclear reactors. Dokl. AN SSSR 153 no.5:1030-1036 D '63. (MIRA 17:1)

1. Predstavleno akademikom S.L. Sobolevym.

MOSKALEV, V.I. (Moskva)

Critical behavior of a [illegible] with nonlinear coupling between temperature and the boundary [illegible] in the approximation of velocity transfer equations. Zhur. vych. mat. i mat. fiz. [illegible] 4 no.1:108 Ja-F '64.

ACCESSION NR: AP4037268 S/0208/64/004/003/0599/0604

AUTHOR: Moskalev, O. B. (Moscow)

TITLE: Critical region in a reactor with nonlinear coupling between neutron flux and temperature in multigroup approximation

SOURCE: Zhurnal vychislitel'noy matematiki i matematicheskoy fiziki, v. 4, no. 3, 1964, 599-604

TOPIC TAGS: thermal neutron, nuclear reactor, continuous operator, dense function, multigroup equation, neutron interaction, secondary neutron

ABSTRACT: A convex thermal reactor with an arbitrary number of sections is considered, with each section characterized by its own neutron-substance interaction cross section. It is assumed that the neutron distribution in the reactor can be represented by a system of multigroup equations and that the reactor temperature is determined by the thermal neutron flux φ_N only. The multigroup equations have the general nonhomogeneous, linear integral form

$$\varphi_j(P) = \int_V dP' K_j(P, P', B\varphi_N)\, \sigma_j(P', B\varphi_N)\, \varphi_j(P') + f(P, B\varphi_N).$$

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ACCESSION NR: AP4037268

This equation is shown to have a unique solution for a fixed f and thus can be represented by some continuous operator L_j acting on f so as to reduce the multigroup equations to the form

$$\varphi_N(P) = \int dP' K_N(P, P', B\varphi_N) [\sigma_N(P', B\varphi_N) \varphi_N(P') + L\varphi_N(P')].$$

The right side of this equation is further represented by the nonlinear operator $A(\varphi)$, which is shown to be continuous and dense. It is explained that $A(\varphi)$ acting on some thermal neutron flow $\varphi(P)$ produces a number of secondary thermal neutrons at point P after a single interaction. This is represented by the inequality

$$A(t\varphi) t\varphi \geq tA(\varphi)\varphi \quad (0 < t < 1).$$

Finally the function $\sigma\varphi + L\varphi$ is found to possess the properties of concavity. "The author expresses his gratitude to V. A. Chuyanov and M. V. Maslennikov for evaluating this work and to Ye. S. Kuznetzov for his interest in the work." Orig. art. has: 9 formulas.

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ACCESSION NR: AP4037268

ASSOCIATION: none

SUBMITTED: 15Nov62	ATD PRESS: 3085	ENCL: 00
SUB CODE: NP	NO REF SOV: 004	OTHER: 000

Card 3/3

ACCESSION NR: AP4029691 S/0089/64/016/004/0304/0309

AUTHOR: Moskalev, O. B.

TITLE: Some nonlinear problems concerning nuclear reactor theory

SOURCE: Atomnaya energiya, v. 16, no. 4, 1964, 304-309

TOPIC TAGS: neutron flux, diffusion approximation, thermal expansion, equation spectrum, reactor criticality, eigenfunction

ABSTRACT: Steady-state nonlinear problems in which the nonlinearity is determined by the dependence of cross sections on neutron flux are discussed, and a method of calculating nonlinearity is presented. It is shown that to design a reactor in which the nonlinear connection between the temperature and neutron flux is essential can be implemented by the use of a preset initial temperature profile within the cells. This step is followed by calculation of (1) the cross sections of a group of neutrons and (2) the reactor's criticality, the latter on the assumption that the cross sections are determined by the

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ACCESSION NR: AP4029691

temperature distribution in the reactor. The neutron fluxes defined by the calculation of criticality can be used to compute the heat release within the reactor and, by making use of equations describing the heat transfer, to determine the temperature in the reactor. Calculations for a homogeneous slab reactor in a single group diffusion approximation are made by way of example to examine the effect of nonlinearity on criticality. It is assumed that the heat transfer in the reactor can be described by an equation of heat conductivity. (The numerical method of solving the above system was developed by R. P. Fedorenko, and the electronic computer was programmed by S. L. Ginsburg). "The author extends his profound gratitude to Ye. S. Kuznetsov for his interest in the project, to R. P. Fedorenko and S. L. Ginsburg for their programming, to L. V. Mayorov and M. V. Maslennikov for their comments, and to O. V. Sysoyeva for the calculations." Orig. art. has: 2 figures and 7 formulas.

ASSOCIATION: none

SUBMITTED: 27Jun63 DATE ACQ: 01May64 ENCL: 00

SUB CODE: NP NO REF SOV: 006 OTHER: 000

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L 57073-65 EWT(m)/EPF(c)/EPF(n)-2/EWG(m)/EPR/EWA(h) Pr-4/Ps-4/Pu-4 WW
ACCESSION NR: AP5014763 UR/0200/65/005/003/0561/0565
517.9:533.9

AUTHOR: Moskalev, O. B. (Moscow)

TITLE: An approximate method for solving the nonlinear equation of transport

SOURCE: Zhurnal vychislitel'noy matematiki i matematicheskoy fiziki, v. 5, no. 3, 1965, 561-565

TOPIC TAGS: nuclear reactor, neutron transport, successive approximation method, approximation method, reactor control

ABSTRACT: A method for solving neutron transport problems in nuclear reactor technology is proposed. It involves the use of successive approximations and represents a variation of existing methods. The problem of the critical reactor state is given as $\lambda\varphi = A_{B\varphi}\varphi$, where $A_{B\varphi}$ is an operator dependent upon neutron density φ, and B is an operator such that $A_{B\varphi}$ describes the neutron transport. The operator B is related to internal reactor temperature by the equation $T = B\varphi$. The computational goal is to use the theory of excitation so as to reach a solution in the form

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ACCESSION NR: AP5014763

$$\varphi = \varphi_0 + \varepsilon\varphi_1 + \varepsilon^2\varphi_2 + \ldots, \qquad \lambda = \lambda_0 + \varepsilon\lambda_1 + \varepsilon^2\lambda_2 + \ldots.$$

The problem is reduced to successive approximation form as

$$(\lambda_0 I + \varepsilon\lambda_1 + \ldots)(C\varphi_0 + \varepsilon\varphi_1 + \ldots) = (FA_{\Sigma\varphi_0} + \varepsilon A_1 + \ldots)(C\varphi_0 + \varepsilon\varphi_1 + \ldots),$$

where C is a function such that

$$\lambda_0 I(C)C\varphi_0 = F(C)A_{\Sigma\varphi_0}C\varphi_0,$$
$$\lambda_1 C\varphi_0 + \lambda_0 I(C)\varphi_1 = F(C)A_{\Sigma\varphi_0}\varphi_1 + A_1 C\varphi_0.$$

The author introduces the neutron transport characteristic equation

$$\lambda\varphi(x) = \int dx' K(x, x', T)\varphi(x'),$$

and derives a solution for the parameter λ, in the form

$$\lambda_1 = \frac{F(C)\int dx\,\varphi_0^+ \int dx' K(x, x', T_0)(T - T_{av})\varphi_0}{\int dx\,\varphi_0^+\varphi_0},$$

where T_{av} is a mean reactor temperature given by

$$T_{av} = \frac{\int dx\,\varphi_0^+ \int dx' K(x, x', T_0)T\varphi_0}{\int dx\,\varphi_0^+ \int dx' K(x, x', T_0)\varphi_0} = \frac{\int dx\,T\varphi_0^+\varphi_0}{\int dx\,\varphi_0^+\varphi_0}.$$

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ACCESSION NR: AP5014763

A computational solution based upon the given dimensions of a particular reactor is offered. A discussion of the accuracy of the approximation is given. The author thanks A. N. Tikhonov and Ye. S. Kuznetsov for their interest in the work. Additional thanks are extended to L. V. Mayorov for his critique and to O. V. Syngayava for computational assistance. Orig. art. has: 7 equations and 1 figure.

ASSOCIATION: none

SUBMITTED: 10Jun64 ENCL: 00 SUB CODE: NP, MA

NO REF SOV: 004 OTHER: 000

Card 3/3

L 45593-65 EPF(c)/EPF(n)-2/EPR/EWT(m)/EWG(m) Pr-4/Ps-4/Pu-4 DM

ACCESSION NR: AP5009118 S/0089/65/018/003/0254/0255

AUTHOR: Moskalev, O. B.; Chuyanov, V. A. 30 B

TITLE: Certain nonlinear problems in the theory of nuclear reactors 19

SOURCE: Atomnaya energiya, v. 18, no. 3, 1965, 254-255

TOPIC TAGS: nuclear reactor design, neutron transport equation, reactor critical condition, reactor neutron flux

ABSTRACT: The article considers an example of design of a nuclear reactor with specified spatial distribution of the power per unit volume of coolant. In the simplest formulation of this problem the cross sections for the interaction between the neutrons and matter are expressed in terms of nonlinear algebraic functions of the neutron flux. Another problem leading to nonlinear transport equation involves the calculation of the stationary mode of a reactor in which the concentration of the poison has reached equilibrium. A specific example is operation of a reactor with sufficiently large per unit energy, when account must be taken of the connection between the

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L 45593-65

ACCESSION NR: AP5009116

distribution of the temperature of the reactor and the neutron flux. In this case the interaction cross sections, and also the external and internal geometrical characteristics of the reactors, depend on the temperature, making the neutron transport equation nonlinear. It is shown that some problems of the theory of nuclear reactors is due to a stationary nonlinear equation of neutron transport, which involves a certain operator (B) whose form depends on the concrete physical problem. The effect of nonlinearity on the criticality of the reactor is considered and it is shown that, because of nonlinearity of the temperature dependence of the activity, a reactor which is supercritical in the cold state may turn out to be critical at sufficiently large power rating. The question of existence of the unique positive nontrivial solution of the Peierls equation $\lambda\Phi(P)=A\Phi$, were A is a nonlinear integral operator (assumed to be monotonic), is also considered, and the solution of the equation is obtained by successive approximations under reasonable physical assumption.

ASSOCIATION: None

SUBMITTED: 21Jan64 ENCL: 00 SUB CODE: NP

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KIRILLOV, G.N., inzhener; KOSKALEV, P.D., mekhanik; PIMENOV, A.N., shofer; KONEV, B.F., inzhener, retsenzent; KAPRALOV, B.A., redaktor; KOGEL', B.I., tekhnicheskiy redaktor.

[Servicing and regulating the feed system of carburetor motors] Obsluzhivanie i regulirovka sistemy pitaniia karbiuratornykh dvigatelei. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. i sudostroit. lit-ry, 1954. 144 p. (MLRA 7:8)
(Automobiles--Engines)

MOSKALEV, I. I.

What's new in the organizatio of t e work of a make-u, yard

Moskv-, Gos. transp. zhel-dor. izd-vo, 1952. 4 . (33-39-9)

TF5[illegible].M6

MOSKALEV, P.I., inzhener (Novosibirsk)

Improving the organization of making up trains. Zhel.dor.transp. 37 no.2:52-54 F '56. (MLRA 9:5)
(Railroads--Making up trains)

MOSKALEV, P.I., inzh.

Specialization of switching tracks in handling cars which are equipped with automatic couplers. Zhel. dor. transp. 40 no.[illegible] '58.
(Railroads--Switching) (Car coupling) (MIRA 11:3)

MOSKALEV, P.I., inzh.

Improving the organization of switching in classification yards. Zhel.dor.transp. 41 no.7:69-73 Jl '59.
(MIRA 12:12)

(Railroads--Making up trains)

MOSKALEV, P.I., dotsent

Yards for the preparation of empty cars for loading are an efficient means for securing the regularity of the work in large areas. Trudy MIIZHT no.25:79-87 '61. (MIRA 16:11)

MOSKALEV, P.I., inzh. (Novosibirsk); POTAPOV, P.R., inzh. (Novosibirsk)

Information and accounting center of a classification yard.
Zhel. dor. transp. 46 no.1:68-70 Ja '64. (MIRA 17:8)

TRUBNIKOV, I.Ye.; OGORODNIK, N.I.; FLEYSHMAN, B.A., dotsent;
MOSKALEV, P.I., dotsent

What are the advantages of concentrated classification operations? Zhel. dor. transp. 46 no.7:32-37 Jl '64.
(MIRA 17:8)

1. Zamestitel' nachal'nika Zapadno-Sibirskoy dorogi (for Trubnikov). 2. Novosibirskiy institut inzhenerov zheleznodorozhnogo transporta (for Fleyshman, Moskalev).

MOSKALEV, P.I., dotsent; SAZHIN, V.V.

Principles of the scientific organization of work in the [illegible] yards. Zhel. dor. transp. 47 no.9:26-32 S '65. (MIRA 18:9)

1. Glavnyy inzh. sortirovochnoy stantsii Inskaya (for Sazhin).

SAYENKO, L.F.; YEGOROV, A.I.; IGNATENKO, Ye.I.; MOSKALEV, P.N.

Production of In^{114m} preparations of high specific activity. Izv. AN SSSR. Ser. fiz. 29 no.7:1236 Jl '65. (MIRA 18:7)

L 62930-65 EWT(m)/EWP(j)/T/EWP(t)/EWP(b) IJP(c) JD/JG/RM

ACCESSION NR: AP5020506 UR/0078/65/010/008/1951/1953
661.865.678+661.865.778+
661.866.678+661.866.978

AUTHOR: Kirin, I. S.; Moskalev, P. N.; Makashev, Yu. A.

TITLE: Formation of unusual rare earth phthalocyanines

SOURCE: Zhurnal neorganicheskoy khimii, v. 10, no. 8, 1965, 1951-1953

TOPIC TAGS: phthalocyanine, neodymium compound, praseodymium compound, erbium compound, lutetium compound, chromatographic analysis

ABSTRACT: The article reports some results indicating the formation of two forms of rare earth phthalocyanines during synthesis of phthalocyanines of neodymium, praseodymium, erbium, and lutetium from the corresponding rare earth acetates and o-phthalonitrile. The products were identified spectrophotometrically in dimethylformamide solutions (see fig. 1 of the Enclosure) The unusual nature of the spectra obtained (two absorption peaks of approximately equal intensity instead of one large and one small peak) indicated the presence of more than one form of phthalocyanine in each case. Two forms were successfully separated by chromatography using columns with Al_2O_3: the green form of neodymium phthalocyanine is thought to have the usual com-

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L 62930-65

ACCESSION NR: AP5020500

position with one molecule of the phthalocyanine ligand; the blue form is thought to contain two molecules of the ligand. This composition agrees with the results of the chromatographic separation: the green form, having one ligand, is more polar, and hence adheres more strongly to Al_2O_3. In an electrochromatographic separation on paper, the green phthalocyanine moved toward the cathode, and the blue one toward the anode; this corresponds to the number of negatively charged ligands in each of the complexes. Orig. art. has: 2 figures.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe Akademii nauk SSSR (Physicotechnical Institute, Academy of Sciences, SSSR)

SUBMITTED: 30Dec64 ENCL: 01 SUB CODE: GC,IC

NO REF SOV: 003 OTHER: 006

L 62930-65

ACCESSION NR: AP5020506

ENCLOSURE: 01

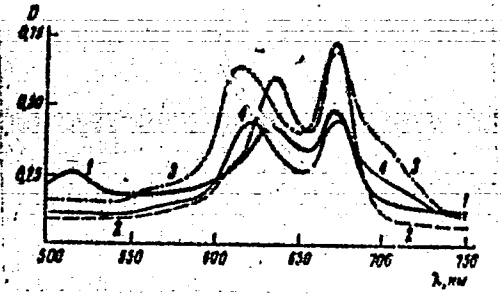

Fig. 1. Absorption spectra in dimethylformamide of the products of synthesis of phthalocyanines of:
1--neodymium; 2--praseodymium; 3--lutetium; 4--erbium

Card 3/3

ACC NR: AP7006252 (A) SOURCE CODE: UR/0079/67/037/001/0280/0280

AUTHOR: Kirin, I. S.; Moskalev, P. N.; Kishin, V. Ya.

ORG: Physicotechnical Institute imeni A. F. Ioffe, Academy of Sciences, SSSR (Fiziko-tekhnicheskiy institut Akademii nauk SSSR)

TITLE: Synthesis of phthalocyanines of certain heavy metals

SOURCE: Zhurnal obshchey khimii, v. 37, no. 1, 1967, 280

TOPIC TAGS: uranium compound, thorium compound, hafnium compound, antimony compound, bismuth compound, phthalocyanine

ABSTRACT: Phthalocyanines of uranium, thorium, hafnium, antimony and bismuth were synthesized from o-phthalonitrile and acetates of UO_2^{2+}, Th^{4+}, Hf^{4+}, Sb^{3+} and Bi^{3+} at 250-300°. The absorption spectra of the products of the synthesis reaction showed several bands at 640-799 mμ, which indicate the formation of various forms of phthalocyanines. For instance, three absorption bands with peaks at 644, 659 and 694 mμ were found in a benzene solution of the product of the synthesis of uranium phthalocyanine. Chromatography on Al_2O_3 was used to separate a form of uranium phthalocyanine characterized by a single strong absorption band in benzene at 644 mμ. From a benzene solution of the raw reaction product resulting from the reaction of synthesis of uranium phthalocyanine, ethyl ether "salted out" a compound having a band with a peak at 693 mμ. In the remaining solution, a single absorption band with

Card 1/2 UDC: 547.584

ACC NR: AP7006252

a peak at 643 mμ was observed. The absorption peaks for the reaction products of phthalocyanines are as follows: 646 and 695 mμ for thorium, 632, 665 and 698 mμ for hafnium, 642, 659 and 706 mμ for bismuth, and 670 and 690 mμ for antimony. The spectra of thorium and hafnium were taken in benzene, and those of antimony and bismuth in dimethylformamide. The observed variety of the forms of heavy metal phthalocyanines is apparently due to the formation of complexes with more or less intricate structures, as well as to the variable valence of the complex-forming reactants.

SUB CODE: 07/ SUBM DATE: 22Jul66

Card 2/2

MOSKALEV, I.Ya., elektromekhanik

Simple network for [illegible] the transmitter [illegible] transceiver. Avtom., telem. i sviaz' 9 no.7:36 Jl '65.
(MIRA 18:8)

1. Novosibirskaya distantsiya Zapadno-Sibirskoy dorogi.

MOSKALEV, S.A., inzh. (Moskva)

Forms for precast reinforced concrete items. Stroi.pred.neft. prom. 2 no.7:22-24 Jl '57. (MIRA 10:10)
(Concrete construction--Formwork)
(Precast concrete)

SOFINSKIY, I.D.; BLOKHIN, P.N.; GEL'BERG, L.A.; ZHDANOV, P.M.; IVASHCHENKO, I.P.; LEVINA, G.P.; NAUMOVA, N.A.; SMIRNOV, N.S.; ARONOVA, R.I.; NIKOLAYEV, N.A.; SHERENTSIS, A.A.; KOVALEVSKIY, I.I.; LOBACHEV, P.V.; SLADKOV, S.P.; DZIGAN, A.V.; FORAFONOV, N.K. Prinimali uchastiye: ARGANSKIY, A.S.; ASMUS, Ye.N.; BUZHALOVA, Ye.M.; BOGATYKH, Ya.D.; BURENIN, V.A.; GOL'DING, N.P.; DOMSHLAK, I.P.; KOSKALEV, S.A.; RABINOVICH, S.G.; ROGOVSKIY, L.V.; KHOKHLOVA, L.P.; SHESTOPAL, N.M.; RUBANENKO, B.R., glavnyy red.; GALKIN, Ya.G., zamest.glavnogo red.; SAPRYKIN, V.A., red.; SHCHEPETOV, V.M., red.; NOVITCHENKO, K.M., nauchnyy red.; VILKOV, G.N., inzh., red.izd-va; TYAPKIN, B.G., red. izd-va; EL'KINA, E.M., tekhn.red.

[Building your own home] Spravochnik individual'nogo zastroishchika. Moskva, Gos.izd-vo lit-ry po stroit.materialam, 1958. 442 p. (MIRA 12:2)

1. Akademiya stroitel'stva i arkhitektury SSSR. (Building)

MOSKALEV, S., inzh.

Demonstration building of dairy barn. Sel'. stroi. 12 no.3:9-10 Mr '58. (MIRA 11:3)
(Dairy barns)

MOSKALEV, S.A., inzh.; ALESHKIN, P.K., inzh., nauchnyy red.; KRYUGER, Yu.V., red.izd-va; GOL'BERG, T.M., tekhn.red.

[Manual on work safety for a loader at construction sites] Pamiatka po tekhnike bezopasnosti dlia gruzchika na stroitel'stve. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam, 1960. 31 p. (MIRA 14:3)
(Building--Safety measures)

MOSKALEV, S.A., inzh.; RONZHINA, A.A., red. izd-va; BOROVNEV, N.K., tekhn. red.

[Pamphlet on safety engineering for gang-saw operators] Pamiatka po tekhnike bezopasnosti dlia mashinistov piloramy. Moskva, Gos. izd-vo lit-ry po stroit., arkhit. i stroit. materialam, 1961. 16 p. (MIRA 14:6)

(Sawmills--Safety measures)

MOSKALEV, S.I.

Grip for loading bundles. Suggested by S.I. Moskalev. Rats. predl. no. 37:10-11 '59. (MIRA 14:1)
(Loading and unloading)

FEDOROV, B.F.; MOSKALEV, S.M.; SHAKHRAY, M.L. professor, redaktor.

[Mechanization of fitting and assembly work] Mekhanizatsiia slesarno-sborochnykh rabot. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1950. 231 p. (MLRA 7:5)
(Machinery--Construction)

BIBIKOV, Yuriy Konstantinovich; MOSKALEV, Stanislav Nikolayevich

[Trade unions in Leningrad during the Soviet regime, 1917-1959] Profsoiuzy Leningrada v gody sovetskoi vlasti, 1917-1959. Moskva, Profizdat, 1960. 189 p. (MIRA 14:10)
(Leningrad—Trade unions)

USSR/Nuclear Physics - Nuclear [illegible]

Abs Jour : Ref Zhur - Fizika, No 4, [illegible]

Author : Yerozolimskiy, B.G., Kutikov, I.Ye., Dubrovin, Y. [illegible], Pevzner, M.I., Daniyan, L. [illegible], Moskalev, S. [illegible]

Inst :

Title : Measurement of the Average Quantity of Neutrons Emitted Per Single Capture, ν [illegible] of Pu^{239} [illegible] a [illegible] ------- [illegible] Is [illegible] Measurement [illegible] of the [illegible] of Pu^{240}.

Orig Pub : Atom. energiya, [illegible], No [illegible], 27-30

Abstract : ν_{eff} was measured for specimens of Pu^{239} with additions of various quantities of Pu^{240} in the vicinity of the Fermi spectrum with a left boundary of [illegible] (gadolinium filter) and 0.4 ev (cadmium filter) for two series of specimens containing the following additions of Pu^{240} (in percent): [illegible], 1.7, 2.5, [illegible], and [illegible]. The [illegible]

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U.S.S.R. Nuclear Physics - Nuclear Reactions.

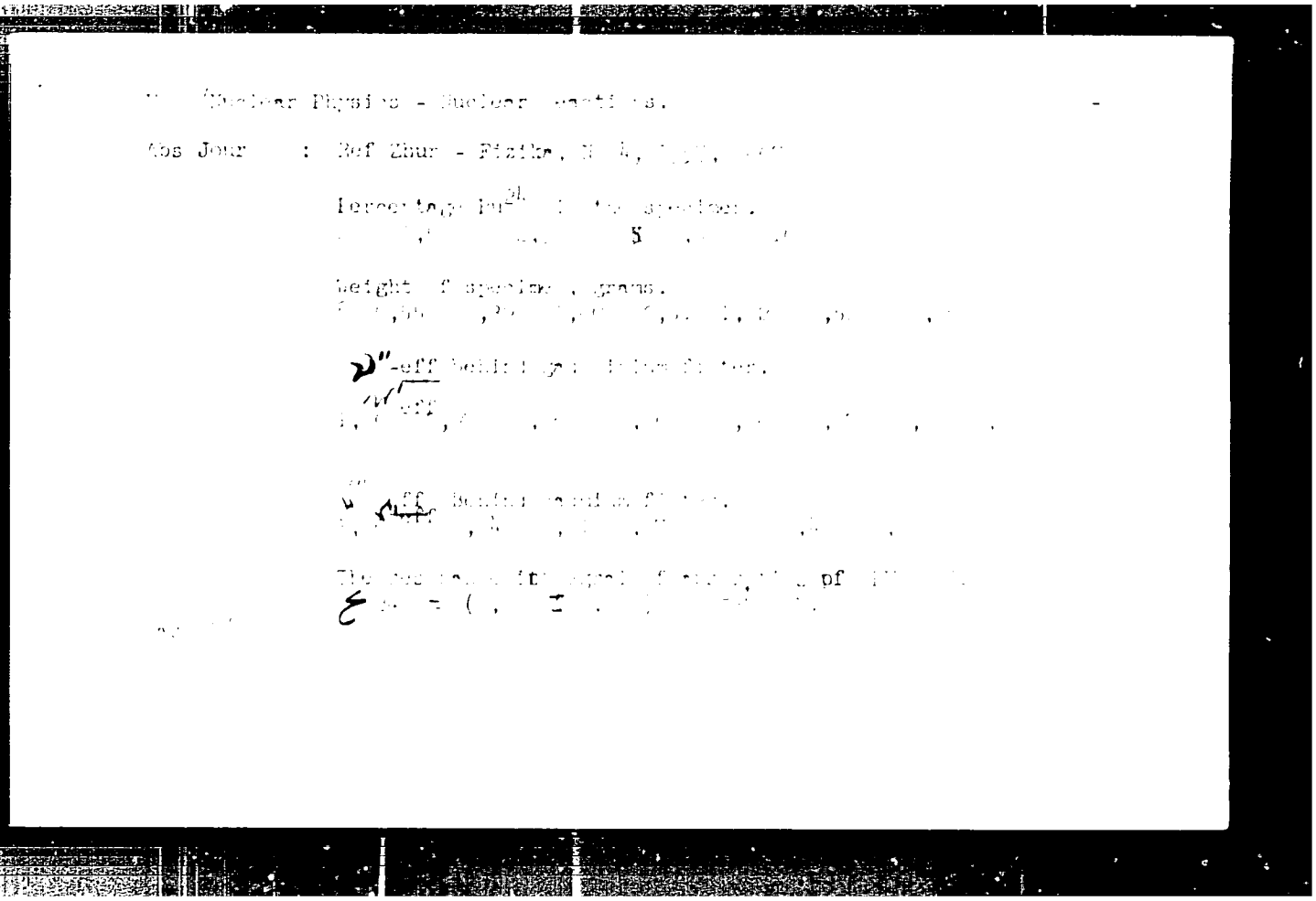
Abs Jour : Ref Zhur - Fizika, No. 4, 1957, No.

was determined in one specimen by measuring the number of spontaneous fissions in a multi-layer ionization chamber; in other specimens the relative amount of Pu^{240} was determined by comparing the cross

f neutrons from the distribution in the neutron field in a graphite prism with a central cavity, in which the investigation specimen is placed (see reference Zhur Fizika, 1957, 25?). The

Table:

Card 1/1



21(7) SOV/89-6-5-14/33

AUTHORS: Adamchuk, Yu. V., Moskalev, S. S., Pevzner, M. I.

TITLE: Total Neutron Cross Section of Np^{237} Within the Energy Range of 2 - 10,000 ev (Polnoye neytronnoye secheniye Np^{237} v oblasti energiy 2 - 10,000 ev)

PERIODICAL: Atomnaya energiya, 1959, Vol 6, Nr 5, pp 569 - 571 (USSR)

ABSTRACT: Measurement was carried out in 1956 with 2 NpO_2-samples containing 11.6 % Pu^{239}. The preparations had a thickness of 5.31 g/cm^2 and 0.702 g/cm^2 respectively. A mechanical selector with a 80-channel time-analyst, which is in operation with the RFT-reactor, was used. The mechanical selector consists of 2 cylinders (l = 40 cm, R = 5 cm) mounted on one axis. The cylinders have 6 thin radial incisions which are uniformly distributed along the circumference. The flight distance was 24.97 m. The rotor performed 25,000 rotations per minute. Maximal resolution was 0.12 μsec/m. 7 boron proportional counters which were combined in a bunch, served as neutron detector. Their effective length was 49.5 cm. The BF_3 was enriched with B^{10}. The total cross section measured is shown in form of a graph. From

Card 1/2

Total Neutron Cross Section of Np^{237} Within the Energy Range of 2 - 10,000 ev

3.86 ± 0.02 ev to 18.9 ± 0.2 ev 15 resonances are visible of which 2 may, however, be ascribed to Pu^{239}. For Γ_n^o/D a value of $(0.68 \pm 0.13).10^{-4}$ was calculated. The total resonance integral within the range of from 2.7 to 12,000 ev amounts to 360 b. There are 2 figures, 1 table, and 5 references, 3 of which are Soviet.

SUBMITTED: January 6, 1959

VORONKOV, R.M.; LEVZNER, M.I.; FLEROV, N.N.; AREF'YEV, A.V.; BASALAYEV, M.I.; KOROLEV, V.M.; MOSKALEV, S.S.; OSIPOV, V.P.

Linear 30 Mev. electron accelerator for neutron spectroscopy. Atom. energ. 13 no.4:327-336 O '62. (MIRA 15:9)
(Neutrons—Spectra) (Particle accelerators)

L 13376-63 EWT(m)/BDS AFFTC/ASD

ACCESSION NR: AP3002720 S/0120/63/000/003/0058/0060

AUTHOR: Moskalev, S. S.; Adamchuk, Yu. V.; Sotnikov, S. K. 60 52

TITLE: Multiwire neutron detector with an overloadproof preamplifier

SOURCE: Pribory* i tekhnika eksperimenta, no. 3, 1963, 58-60

TOPIC TAGS: neutron detector, overloadproof preamplifier, neutron study

ABSTRACT: A multiwire $B^{10}F_3$-filled new neutron detector is described which is intended for studying total neutron cross-sections on a neutron spectrometer; the neutrons are supplied by an IAR linear electron accelerator (R. M. Voronkov, M. I. Pevzner, N. N. Flerov, A. V. Aref'yev, et al., Atomnaya energiya, 1962, 13, 327). The detector includes 230 proportional counters that have only a 0.25 microsec delay. A simple-circuit overloadproof preamplifier (overload capacity about 1,000) eliminates overloading the electronic devices due to high-power gamma-ray pulses that are set up by the accelerator electron pulses. The preamplifier permitted cutting the channel dead time (after a gamma pulse) down to 5-10 microsec, i. e., permitted studying the total neutron cross-sections from 100 kev on. "In conclusion,

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L 13376-63

ACCESSION NR: AP3002720

8

it is a pleasant duty of the authors to thank M. I. Pevzner, N. N. Flerov, A. P. Tsitovich, and D. A. Istomin for their valuable advices and discussions, G. F. Shavkutenko for his part in building the detector, and also Ye. M. Strel'nikov and V. Ye. Charnko for their help in aligning and operating the experimental hookup." Orig. art. has: 7 figures.

ASSOCIATION: Institut atomnoy energii (Institute of Atomic Energy)

SUBMITTED: 04Aug62 DATE ACQ: 12Jul63 ENCL: 00

SUB CODE: NS, SD NO REF SOV: 006 OTHER: 000

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(1)

S/056/63/044/004/013/044
B102/B186

AUTHORS: Pevzner, M. I., Adamchuk, Yu. V., Danelyan, L. S., Yefimov, B. V., Moskalev, S. S., Muradyan, G. V.

TITLE: Neutron-spectroscopic investigations of Nuclear Levels. 1. Neutron cross sections of molybdenum isotopes in the 7 - 15,000 ev energy range

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 44, no. 4, 1963, 1187 - 1194

TEXT: The time-of-flight method was used for determining the total neutron cross sections (path length 109.14 m) and the radiative capture cross sections (path length 15.1 m) for Mo isotopes from A = 92 to 100. The measurements were made by means of a neutron spectrometer (cf. Atomnaya energiya, 13, 327, 1962), and a linear electron accelerator was used as pulsed neutron source (OIYaI Report P-956, Dubna, 1962); the pulse duration was 0.6 μsec, the repetition frequency 100 cps, the channel width of the time analyzer 0.577 μsec. The neutrons were detected by a stack of 230 proportional counters arranged in an aluminum tank filled with BF_3 (80% B^{10}). The

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detector area was 2500 cm^2; the thickness in the direction of the neutron trajectories was 17.6 cm. The highest resolution in the total cross-section measurements was 0.006 μsec/m. The energy distribution of the total neutron cross section is graphically shown for the whole range investigated and the numerical results are tabulated for the great many resonance levels observed with the seven Mo isotopes investigated; E_o, Γ_γ, Γ_n, and Γ_n^o are given. In the calculations, the interference between potential and resonance scatterings is taken into account. Also the strength function for the s-wave, $S_o = \overline{\Gamma_n^o}/D$, is calculated for all isotopes. The weak levels detected (Mo^{95} - 110.8, 118.3, 220, 249, 267.3 ev; Mo^{97} - 230 ev; Mo^{98} 12 ev and Mo^{100} 99.5 ev) are attributed to p-neutron capture. A series of double and even triple peak coincidences were observed; thus, for example, at 335±10 ev Mo^{92}, Mo^{95} and Mo^{100} have a peak; at 1520±10 ev, Mo^{94}, Mo^{97} and Mo^{98}. There are 2 figures and 2 tables.

SUBMITTED: November 26, 1962

Card 2/2

ACCESSION NR: AP4012266 S/0089/64/016/001/0056/0058

AUTHORS: Danelyan, L. S.; Adamchuk, Yu. V.; Moskalev, S. S.; Pevzner, M. I.; Yastrebov, S. S.

TITLE: The radiative-capture cross-section of disprosium isotopes in an energy range of 0.023-1 electron volts.

SOURCE: Atomnaya energiya, v. 16, no. 1, 1964, 56-58

TOPIC TAGS: absorber, burnable absorber, isotope mixture, natural mixtute, capture cross-section, radiative capture, amplitude analyzer, dysprosium, thermal neutrons, neutron spectrum, reactor oscillator

ABSTRACT: The capture cross-sections of dysprosium isotopes have been measured by the flight-time method. A pulsating linear electron accelerator was used as a neutron source. A single-channel amplitude analyzer transmitting gamma-ray pulses with an energy of 1.6-5 Mev was added to the background to improve the effect. The total cross-section was measured by the neutron transmission in the 0.02-0.07 ev range with a view to determining the absolute cross section. But the lack of adequate quantities of separated isotopes

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ACCESSION NR: AP4012266

complicated the determination of the total cross sections in the entire energy range. The transmission of the dysprosium samples located midway between the accelerator target and the detector was recorded by a Gd^{155} sample placed in the detector. A mass-spectrometric analysis of Dy^{162} and Dy^{163} samples, designed to determine their content of Dy^{164}, Gd^{155} and Gd^{157}, was made with an Mc-2M mass-spectrometer. It was found that the Gd^{155} and Gd^{157} isotopes accounted for less than 0.01% which can produce a 10% error in defining the absolute values on the basis of the total cross sections.

"We are deeply grateful to V. S. Zolotarev and his associates for producing separated dysprosium isotopes; to G. M. Kukavadze for his useful advice, and to A. S. Alpeyev, A. Ya. Lunin, S. M. Strel'nikov and M. V. Safronova for their participation in the measuring and data processing."

Orig. art. has: 1 Figure, 1 Formula and 1 Table.

ASSOCIATION: None

SUBMITTED: 24Jun63 DATE ACQ: 14Feb64 ENCL: 00

SUB CODE: PH NR REF SOV: 002 OTHER: 003

Card 2/2

ACC NR: AP7001937 SOURCE CODE: UR/0120/66/000/006/0043/0050

AUTHOR: Muradyan, G. V.; Adamchuk, Yu. V.; Moskalev, S. S.

ORG: Institute of Atomic Energy, GKAE, Moscow (Institut atomnoy energii GKAE)

TITLE: Neutron spectrometer for identifying nuclear levels from the orbital moment of incoming neutrons

SOURCE: Pribory i tekhnika eksperimenta, no. 6, 1966, 43-50

TOPIC TAGS: ~~spectrometer~~, radiation spectrometer, neutron spectrometry, neutron beam, scintillation detector

ABSTRACT: A neutron spectrometer intended for identifying nuclear levels from the orbital moment of incoming neutrons is described. The method of identifying s and p neutron levels is based on interference observations by means of a Doppler shift produced by the motion of the sample being studied. Neutrons from a pulsed source are passed through a moving filter T and are then recorded from captured γ-rays generated by a sample D which consists of T and the investigated nuclei. Pulses from γ-quanta are passed on to a time delay analyzer by means of which the neutron time distribution is obtained. It is shown that the measurement results depend on the direction of motion of the sample T for the s levels only. A schematic drawing of the orbital moment selector

Card 1/5 UDC: 539.122.164.08

ACC NR: AP7001937

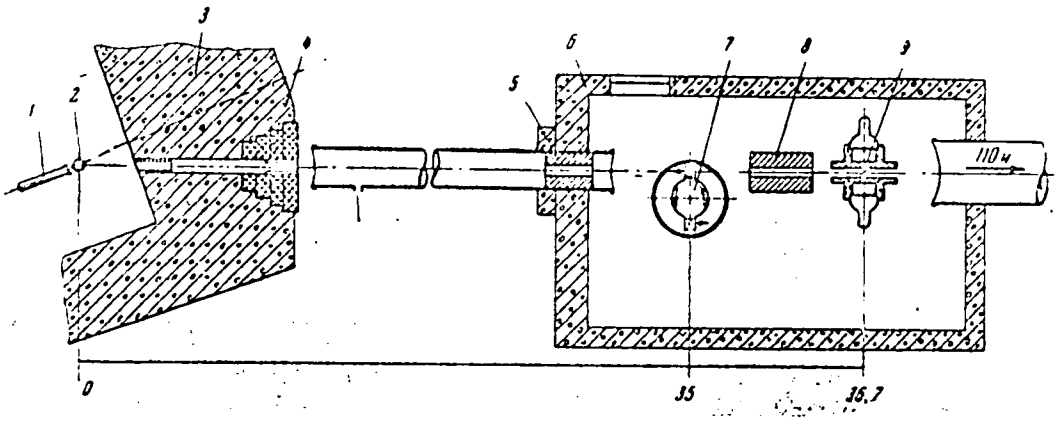

Fig. 1. Layout of the spectrometer system in the path of a neutron beam

1 - Accelerator; 2 - target (uranium + H_2O moderator); 3 - accelerator protective wall; 4 - gate; 5, 8 - collimators; 6 - concrete shield; 7 - orbital moment selector; 9 - scintillation detector.

Card 2/5

is shown in Fig. 1. A pulsed linear electron accelerator is used to produce a neutron pulse. The electron pulse has the following characteristics: width, 0.25 msec; current, ~0.5 amp; and energy, ~25 Mev.

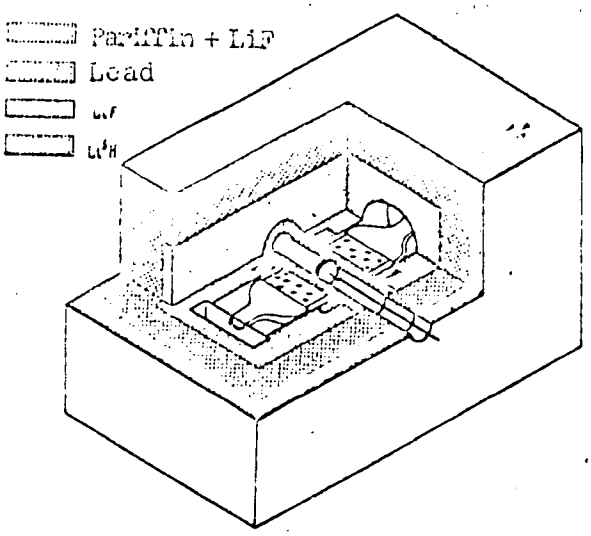

Fig. 2. Cut-away drawing of the two-crystal scintillation detector

ACC NR: AP7001937

Upon impinging on the uranium target, the electrons are converted into γ-rays which in turn generate fast neutrons. Neutron moderation is achieved by a 4-cm-thick water moderator surrounding the uranium target. Initial shaping of the neutron beam is made by an opening in the gate and by collimators located in a vacuum neutron guide. The neutron guide ends in a separate section in which are contained the sample holder (7), collimators (8) performing the final neutron beam shaping, and an NaI(Tl) scintillation detector (9) for recording the process of neutron capture. A cut-away drawing and a block diagram of the scintillation detector are shown in Fig. 2 and Fig. 3, respectively. The two NaI(Tl) crystals are mounted on two FEU-49 photomultipliers. To reduce the neutron noise, the sample is surrounded by a 3-cm-thick cylindrical layer of pressed LiH. A 10-cm-thick lead shield is placed around the detector. The external shield is of LiF and paraffin. The detector was initially used in experiments to measure the radiation capture of individual Ag^{107} and Ag^{109} isotopes using a 2.048-channel time analyzer (channel width, 0.25 μsec). The width of the neutron pulse was ~0.2 μsec. The operation of the entire spectrometer system was tested in s and p identifications of Nb^{93} levels in the region of 400—500 ev.

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ACC NR: AP7001937

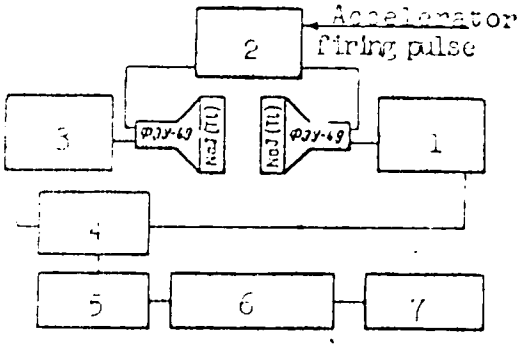

Fig. 3. Block-diagram of the detector

1 - Cathode repeater; 2 - quenching pulse generator; 3 - cathode repeater; 4 - integrating circuit; 5 - amplifier; 6 - integral discriminator; 7 - time analyzer

It was found that at E_o = 460.3 ev the level was of the s type, and at E_o = 500.3 ev of the p type. Orig. art. has: 8 figures. [WA 75] [JR]

SUB CODE: 20/ SUBM DATE: 08Apr66/ ORIG REF: 001/
OTH REF: 005

Card 5/5

MOSKALEV, V.

Wood prevents fires. Pozh. delo 8 no.9:27 S '62.
(MIRA 16:11)

1. Glavnyy mekhanik Nesvizhskogo l'nozavoda.

MOSKALEV, V. A.

USSR/Electronics - Exhibitions
Television

Aug 52

"Awards to Participants in the 10th All-Union Radio Exhibition"

"Radio" No 8, pp 16,17

Lists awards to participants in the various sections of the 10th All-Union Radio Exhibition. First prize (2,000 rubles) in the television section was awarded to B. N. Gorshkov and V. A. Moskalev of Moscow for a relay station. In the

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special equipment section, 1st prize (2,500 rubles) was awarded to Yu. L. Mel'nik, G. A. Dergachev, and M. V. Katsnel'son of Leningrad for an undisclosed development. Other prizes in this section were awarded for radio-controlled model ships and airplanes.

226T21

MOSKALEV, V. A.

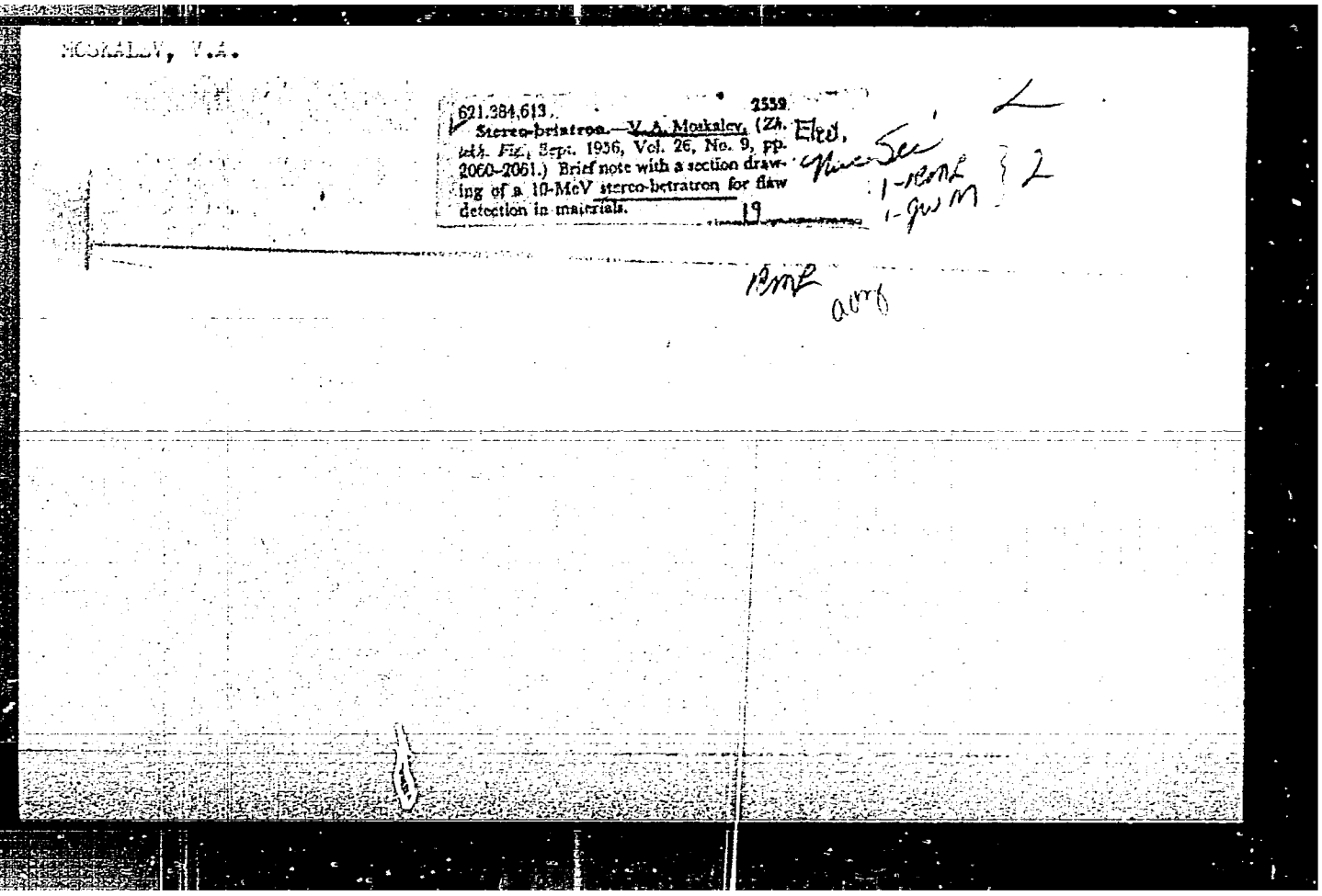
"Investigation of the Membrane Strength of Membrane Compressors." Cand Tech Sci, Moscow Order of Labor Red Banner Technical School imeni Bauman, Min Higher Education USSR, Moscow, 1954. (KL, No 1, Jan 55)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)
SO: Sum. No. 556, 24 Jun 55

MOSKALEV, V.A.

Fatigue resistance test of membranes. Priborostroenie no.8: 21-25 Ag '56. (MLRA 9:10)

(Metals--Fatigue)



MOSKALEV, V.A.

621.384.613 2339

Stereo-betatron. V. A. Moskalev. (Zh. Eksp. i Teor. Fiz., Sept. 1956, Vol. 26, No. 9, pp. 2060-2061.) Brief note with a section drawing of a 10-MeV stereo-betatron for flaw detection in materials. 19

MOSKALEV, V. A.

19 537.533.6

4461. SPATIAL DISTRIBUTION OF BETATRON RADIATION AT 10 MeV. V.A.Moskalev.
Zh. tekh. Fiz., Vol. 26, No. 11, 2593-8 (1956). In Russian.

The paper describes experiments intended to check Lawson's theoretical results (J.H.Lawson, Abstr. 5183/1950). Agreement with theory regarding position of the maximum and width of the radiation cone is found. A second maximum is shown to come from low-energy radiation and some qualitative reasons for its occurrence are given.

H.Motz

2
Physics
1-Ref
1-JWM

Orig

MOSKALEV, V.A.

2

19 537.533

1-RML
1-JWM

4930. THE STEREOBETATRON. V.A. Moskalev.
Zh. tekh. Fiz., Vol. 25, No. 6, 2080-1 (1955). In Russian.

The device consists of a betatron with two accelerating chambers, placed in the same magnet. The two beams may be focused at a preset distance from the magnet, so as to allow a spatial reconstruction of the irradiated objects. The device should prove particularly suitable for localizing the depth of defects in thick metal specimens; it may also be useful for medical purposes, since the intensity at an internal point of the body may be doubled without exceeding the safety dose on the skin.

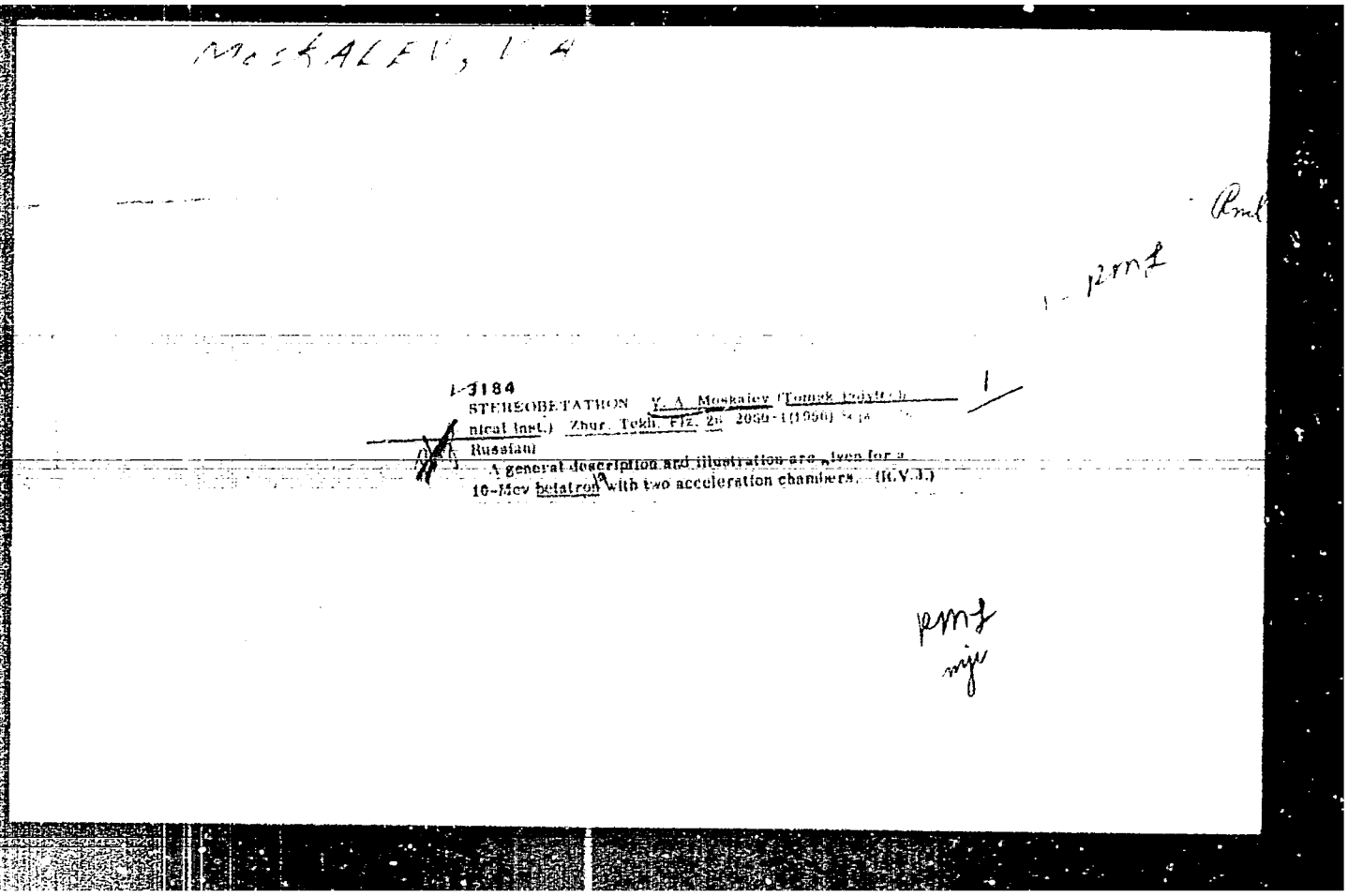
G. Martelli

RML
MT

VOROB'YEV, A.A., doktor fiziko-matematicheskikh nauk; MOSKALEV, V.A., kandidat tekhnicheskikh nauk.

Using particle accelerators for defectoscopy and radioscopy of thick-walled objects. Vest. mash. 36 no.9:62-65 S '56.
(MLRA 9:10)

(Particle accelerators) (Radiology, Industrial)
(Metals--Defects)



I-3184
STEREOBETATRON Y. A. Moskalev (Tomsk Polytech-
nical Inst.) Zhur. Tekh. Fiz. 26 2059-4(1956) *14
Russian
A general description and illustration are given for a
10-Mev betatron with two acceleration chambers. (R.V.J.)

SUBJECT USSR / PHYSICS CARD 1 / 5 PA - 1692
AUTHOR MOSKALEV, V.A.
TITLE The Spatial Distribution of the Radiation of a Betatron for 10 MeV.
PERIODICAL Zurn.techn.fis, 26, fasc.11, 2595-2598 (1956)
Issued: 12 / 1956

The theoretical investigations concerning the spatial distribution of the bremsstrahlung coming from a thin target carried out by L.J. SHIFF, J.LOWSON, and some other authors furnished nearly equal results. At electron energies of some MeV radiation propagates mainly in that direction in which the electron bundle moves when impinging on the target. Symmetry of the distribution of radiation with respect to the axis of the bundle, and inverse proportionality of the "angle of half intensity" and of the primary energy of the electrons are claimed to exist in theory.
The present work deals with the experimental determination of the spatial distribution of the radiation of a betatron for 10 MeV. For purposes of measuring, a dosimeter with a thimble-like graphite ionization chamber with walls of from 3 to 38 mm thickness and with an operating volume of 1 cm^3, as well as a standard device of the type USDDb with an aluminium ionization chamber of 1000 cm^3 volume were used. The chamber of this device had a wall of 1 mm thickness and was used for the permanent control of the radiation yield. The thimble-like chamber was located at a distance of 1 mm from the radiation source and it was possible to move it in a circle round the target.

Žurn.techn.fis, 26,fasc.11, 2595-2598 (1956) CARD 2 / 5 PA - 1692

A diagram illustrates the measured intensity distribution of the ionization chamber with a wall that corresponds to the equilibrium. The curve has the maximum which characterizes betatron radiation and corresponds to the principal bundle. The maximum of radiation lies in the direction of the tangent applied to the electron orbit at the position of the target. The angle of half-intensity amounts to about 24° (10° to the left and 14° to the right). This is illustrated by a second diagram, in which, besides, the experimental and theoretical curves are compared. Good agreement confirms the correctness of J.LAWSON'S theory. The asymmetric distribution of radiation in the horizontal plane is obviously due to the fact that the bremsstrahlung of the electron bundle originates only from the outer edge of the target, for the electrons approach the target along a spiral with very small spacing of the order $(2 - 5).10^{-5}$ cm. Therefore that part of the electrons, which is deflected towards the edge of the target after the first collisions, moves along a shorter way in the material of the target and furnishes less radiation than the beam which was deflected in the opposite direction. This always causes an asymmetric angular distribution of the radiation of a betatron and synchrotron. The distribution of radiation in the vertical plane was symmetric, the angle of half intensity amounts to 17°, which agrees well with theoretical results.

Žurn.tech.fis,26,fasc.11, 2595-2598 (1956) CARD 3 / 5 PA - 1692

The existence of a second maximum in the spatial distribution of the betatron:

When investigating the spatial distribution of betatron radiation, the author found a second radiation maximum. It is displaced with respect to the principal bundle by from 15 to 20°, and is due to a comparatively soft radiation. It is noticeable only when measured with thin-walled ionization chambers. The energy of this radiation is less than 1 MeV and is fully absorbed by a material with a density of 1,65 g cm^2. The radiation spreads round the betatron in form of a fan with obtuse and blurred angles. The existence of a large amount of weak radiation, the maximum of which has another direction than the maximum of the hard radiation coming from the target of the accelerator, was observed in the case of 6 betatrons (for 15 and 25 MeV), and seems to be typical of all betatrons of similar construction.
Some experiments permit the following explanation of the occurrence of an intense soft radiation: The range of 10 MeV-electrons in tungsten is 2 - 3 mm. The targets which can be used in the betatrons discussed here have a thickness of from 0,2 to 0,4 mm. Therefore the accelerated electrons are able, when colliding with the target, to penetrate through it, on which occasion, however, they lose part of their kinetic energy. Such electrons are turned by the magnetic field towards the center of the system, and "fall" on to the inner wall of the acceleration chamber. The most probable azimuth at which the electrons, after passing through the target, collide with the wall of the

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chamber, can be approximately determined from an equation which connects the period of radial oscillations T_{vib} with the period of revolution T_{curl} of the electron on the equilibrium period: $T_{vib} = T_{curl} (1 - n)^{-1}$. Here n denotes the exponent in the theorem characterizing the decrease of magnetic induction (in the concrete case it applies that n = 0.75). According to this equation the electron performs a full oscillation per two revolutions round the center of the system. Consequently, the electrons passing through the target can collide with the wall of the acceleration chamber after having performed a revolution on the orbit, i.e. on an azimuth which is similar to that of the position of the target. When being slowed down by the wall of the chamber and in the silver layer covering the interior of the chamber, the electrons then emit an ample amount of soft radiation in the direction (or nearly so) of the propagation of the hard principal bundle. The electrons must impinge on the inner wall of the chamber all the more the more their velocity decreases. The greater, therefore, the loss of energy of the electron when being slowed down in the target, the sooner does the electron collide with the wall of the chamber, which diminishes the distance between the maxima of "hard" and "soft" radiation. These assumptions are confirmed by the following experiment:

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A mechanism was constructed for the purpose of exchanging one target for another without destroying the vacuum. Thus, the spatial distribution of the radiation originating from three tungsten targets was investigated. In the case of all three targets an intensity distribution of the radiation with two distinctly marked maxima was found to exist. The left maximum has the same direction as the tangent applied to the orbit at the position of the target. This maximum corresponds to the principal bundle of the radiation which is caused by the slowing down of the electron in the target.
The second maximum caused by slowing down of the electrons in the wall of the chamber is shifted by 25° towards the first maximum in the case of a target of 0,5 mm thickness (if the target has a thickness of 0,1 mm it is shifted by 35°). The decrease of the angle between the maxima on the occasion of an increase of thickness confirms the correctness of the aforementioned conclusions drawn with respect to the causes of the second maximum. The electrons which passed through thick targets lose more of their kinetic energy than in thin targets. Electrons with a lower kinetic energy of the chamber approach the interior wall of the chamber on the steepest spiral and leave the wall sooner (i.e.at a lower azimuth) than electrons that passed through thin targets. This causes the maximum of "soft" radiation to shift with respect to the direction of the principal bundle.

INSTITUTION:

Moskalev, V.A.

C-2

USSR/Nuclear Physics

Abs Jour : Referat Zhur - Fizika, No 5, 1957, 10975

Author : Moskalev, V.A.

Inst : Polytechnic Institute, Tomsk.

Title : The Stereobetatron.

Orig Pub : Zh. tekhn. fiziki, 1956, 26, No 9, 2060-2061

Abstract : Description of a 10 Mev betatron with two accelerating chambers, which betatron can be used for commercial defectoscopy of thick-wall articles and for deep therapy of malignant tumors in medicine. Two-field radiation makes it possible to obtain stereo photographs of the defect and reduces the time of exposure in defectoscopy, and in the case of deep therapy it makes it possible to double the dose on the tumor without changing the dose on the surface of the skin of the patient and to reduce the duration of the medication session.

Card 1/1

3K

AUTHORS: Vorob'yev, A. A., Moskalev, V. A.

TITLE: The Investigation and the Development of Cyclic Accelerators at the Tomsk Polytechnical Institute(Issledovaniya i razrabotki elektronnykh tsiklicheskikh uskoriteley v Tomskom politekhnicheskom institute)

PERIODICAL: Atomnaya Energiya, 1958, Vol. 4, Nr 3, pp. 229 - 237 (USSR)

ABSTRACT: In 1946 the design and the construction of a betatron was started at Tomsk.
In 1948 a 5 MeV betatron (the electromagnetic windings being supplied by a 500 cycles alternating current) as well as a 7 MeV betatron (the supply being carried out by means of normal alternating current) were finished and put into operation. Within the period from 1949 to 1955 a number of betatrons up to 15 MeV were finished and put into operation. Within this period also a 25 MeV betatron was constructed which has an increased radiation intensity and the single aggregates of which operate considerably more stable. From 1955 to 1956 a few of these apparatus were built. The most important para-

Card 1/2

The Investigation and the Development of Cyclic Accelerators at the Polytechnical Institute

meters as well as the details of construction are discussed. Different trons are discussed. Different possibilities are deflect an electron beam out of the betatron. The betatron is partly described and is in detail. ly report on how to use ring-shaped accelerating in a 30 MeV synchrotron. These electrodes are the external double-resonance line. There are and 17 references, 11 of which are Slavic.

SUBMITTED: September 6, 1957

AVAILABLE: Library of Congress

1. Betatrons-Design

Card 2/2

14(1) PHASE I BOOK EXPLOITATION SOV/2472

Vsesoyuznyy nauchno-issledovatel'skiy i konstruktorskiy institut khimicheskogo mashinostroyeniya

Konstruirovaniye i issledovaniye kompressorov i vakuum-nasosov (Design and Investigation of Compressors and Vacuum Pumps) Moscow, Mashgiz, 1958. 90 p. (Series: Its: Sbornik statey, 22) 5,000 copies printed.

Ed.: V.A. Rumyantsev, Engineer; Ed. of Publishing House: A.M. Monastyrskaya; Tech. Ed.: A.F. Uvarova; Managing Ed. for Literature on Machine Building and Instrument Construction (Mashgiz): V.V. Pokrovskiy, Engineer.

PURPOSE: This collection of articles is intended for scientists and engineers working in the field of compressor manufacture, and also for students of vuzes specializing in compressors and vacuum pumps.

COVERAGE: The booklet consists of five articles. The first article presents investigation results and design data for determining resistances in strip-type automatic diaphragm values. The second articles presents for the first time results of the investigation of large diameter diaphragms used in diaphragm-type compressors. The third article presents, also for the first time, experimental results and methods for designing metallic packings for piston-compressor

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rods. The fourth article presents test results and theoretical data for designing two-stage piston vacuum pumps. The last article presents data on designing diffusion-type oil vacuum pumps. No personalities are mentioned. References follow each article.

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