

YUROV, S. I.

307/6-58-6-18/21

AUTHOR: None Given

TITLE: Chronicle (Khronika)

PERIODICAL: Geodeziya i kartografiya, 1958, Nr 6, pp. 77-78 (USSR)

ABSTRACT: From April 25 - 28, 1958 a Conference of the Chief Engineers and Directors of the Technical Control of Aerial Surveying Enterprises took place at the Moscow Central Bureau of Surveying and Cartography of the Ministry of the Interior of the USSR (Glavnoye upravleniye geodezii i kartografii MVD SSSR). It dealt with the improvement of the production organization and the quality of topographical work in surveying of official importance. The following lectures were held: S. G. Sudakov, Deputy Director of the Glavnoye upravleniye geodezii i kartografii MVD SSSR on: "Main Problems in the Further Improvement of Topographical Work in Surveying of Official Importance". The Chief-Engineers of the enterprises held the following lectures: S. G. Gavrilov - "Technical Projecting of Topographical-Geodesic Field Work". S. I. Yurov - "Comprehensive Performance of the Position- and Elevation Orientation of Aerial Photographs", B. D. Zaprudnov - "Taking a Combined Photograph of Flat Country Covered With Forests", L. A.

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Kashin - "Organization of the Financial Administration in Field Subdivisions of the Aerial Surveying Enterprise North-Caucasus"; M. V. Avilov, Director of the Stereo Works at the MAGP - "Control Operations on Stereotopographical Photographs at the MAGP". - The scientific members of the staff of the TsNIIGAIK: held the following lectures:
B. A. Larin - "The Possibilities of Using the Light-Range-Finder in Compiling Geodesic Constructions". V. Ya. Mikhaylov - "On the Improvement of the Photographic Quality of Photographs". P. I. Burneva - "New Geodesic Instruments for the Preparation of the Basis for Topographic Photographs". M. S. Uspenskiy - "Some Results of the Stability Investigation of Traverse Stations and Monuments in the Area of the USSR". M. D. Konshin - "On Using the Elements of External Orientation in the Photogrammetric Evaluation of Aerial Photographs, and on the Increase of the Accuracy in Stereoscopic Measurements". G. D. Krasheninaikov - "On the Stereograph by Drobyshev". - The members of the staff of the departments of the GUCK held the following lectures:
G. S. D'yakov - "On the Stage of Technical Studies at Aerial Surveying Enterprises". V. N. Shishkin - "The Work of Rationalizing and Introducing the New Technique to the Topo-

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graphic-Geodesic Production of the GUCK in 1957". A. P. Shcheglov - "Analysis of the Measuring Accuracy in the Triangulation of 2nd and 3rd order in the Years 1956-1957". B. V. Troitskiy - "Marking Control Points for the Geodesic Preparation of Photographs". I. V. Krylov - "Analytical Method for the Determination of Position- and Altitude Traverse Stations".

Based on the lectures it could be found that during the last years the topographic photographs of the scale 1:25 000 and 1:10 000 have undergone great development.

The conference decided to invite the representatives of the aerial surveying enterprises of the departments of the State Geodesic Control as well as of the interested offices to a conference at the end of 1958 and to investigate the project for the plan of development of the geodesic tasks in 1959-1965.

1. Cartography
2. Aerial photography
3. Scientific reports

Card 3/3

SHISHKIN, Vladimir Nikolayevich; YUROV, S.I., red.; KHROMCHENKO, F.I.,
red., izd.-va; VORONOVA, V.V., tekhn. red.

[Instruction on safety measures in the construction of geodetic
signals] Pamiatka po tekhnike bezopasnosti na postroike geode-
zicheskikh znakov. Moskva, Izd-vo geodez. lit-ry, 1960. 43 p.
(MIRA 14:4)

(Surveying--Safety measures)

KRYZAGUROV, Nikolai Iosifovich; YUKOV, S.I., red.; SAVVA, L.A.,
red. 1st-vol; VORONOVA, V.V., techn. red.

[Manual on safety measures for geodesists and topographers
working in deserts] Pamiatka po tekhnike bezopasnosti dlia
geodezistov i topografov pri rabotakh v pustyniakh. Moskva,
Geodezizdat, 1961. 36 p. (MIRA 15:7)
(Surveying--Safety measures)

MINAYEV, Georgiy Aleksandrovich; SHAT'KO, Nina Ivanovna; D'YAKOV, G.S.,
re'senzent; POVALYAYEV, P.I., dots., re'senzent; PROKOF'YEV,
F.I., dots., re'senzent; KULIKOV, A.A., starshiy prepodavatel',
re'senzent; YUROV, S.I., red.; KOMAR'KOVA, L.M., red. izd-va;
ROMANOVA, V.V., tekhn. red.

[Safety engineering in topographic and geodetic work] Tekhnika
bezopasnosti na topografo-geodezicheskikh rabotakh. Moskva,
Geodezizdat, 1962. 226 p. (MIRA 15:9)
(Surveying--Safety measures)

YUROV, S.I. (Lipetsk)

Use of physical experiments in the antireligious work among the
population. Pis.v shkole 21 no.3:84-85 Ky-Je '61. (MIRA 14:8)
(Atheism--Study and teaching)

Yurov, S. Yu.
China/General Problems - Problems of Teaching

A-3

Abst Journal : Referat Zhur - Fizika, No 12, 1956, 33619

Author : Yurov, S. Yu.

Institution : None

Title : Simple Experiments to Demonstrate Archimedes' Law

Original
Periodical : Uli Tunbao, 1955, No 9, 563-565, Chinese

Abstract : Translation from Fizika v Shkole, 1954, No 4, 60

Card 1/1

Yu. ROV. V.
YUROV, V.

Strengthen the technical and economic foundation of the commercial and financial plans of trade organizations. Sov.torg. no.1:49-50
Ja '58. (MIRA 10:12)

1.Nachal'nik planovo-ekonomicheskogo otдела Irkutskogo gorpromtorga.
(Irkutsk Province--Retail trade)

YUROV, V. (g.Irkutsk)

Every district must have a well-grounded plan for commodity turnover. Sov. torg. 35 no.3:32-34 № '62. (MIRA 15:3)
(Irkutsk Province--Turnover (Business))

YUROV, V.; VLADIMIROV, A.

Overall mechanization when housing swine in large groups. Sel'. stroi. no.10:10-11 0 '62. (MIRA 15:11)

1. Glavnyy inzh. Kuybyshevskogo oblastnogo upravleniya proizvodstva i zagotovok sel'skokhozyaystvennykh produktov (for Yurov).
2. Starshiy inzhener Kuybyshevskogo oblastnogo upravleniya proizvodstva i zagotovok sel'skokhozyaystvennykh produktov (for Vladimirov).
(Kinel' District—Swine houses and equipment)

CHUMAKOV, S.; RABINOVICH, B.; NURMUKHAMMEDOV, M. (G.Petropavlovsk);
Yegorov, V.; STEPANOV, K.; SIBILEV, P.; YUROV, V.

Response to the survey of letters on "How a warehouse should
distribute goods among stores"; (No. 5, 1960). Sov. org.
33 no. 9:30-35 S '60. (MIRA 14:2)

1. Obshchestvennyy inspektor gortorga, gKhaavyurt, Dagestan-
skaya ASSR (for Chumakov). 2. Zamestitel' direktora magazina
No.8 plodoovoshchtorga, Riga (for Rabinovich). 3. Zamestitel'
nachal'nika Planovo-ekonomicheskogo upravleniya Ministerstva
torgovli RSFSR (for Yegorov). 4. Nachal'nik Planovo-
finansovogo otdela Glavnogo upravleniya trgovli gorispolkoma,
Moskva (for Stepanov). 5. Nachal'nik Planovogo otdela
gorpromptorga, Krasnodar (for Sibilev). 6. Nachal'nik
Planovo-ekonomicheskogo otdela gorpromptorga, Irkutsk (for Yurov).
(Wholesale trade)

YUROV, V. (Irkutsk)

Production program of a plant and orders. Sov. targ. 36 no.2:
10-12 F '63. (MIRA 16:4)

(Irkutsk Province—Clothing industry)

YUROV, V. (Irkutsk)

Orders and interprovincial exchange of merchandise. Sov. targ.
37 no.11:10-12 N '63. (MIRA 16:12)

YUROV, V. S.

"The Cure of Infections of the Oral Cavity in Medical Aid Stations," Stomatologiya,

No. 2, 1949. Lect.

YUROV, V.S.

[New technic in formation of Filatov's round pedicle] Novyi prin-
tsip i tekhnika formirovaniia kruglogo steblia. Khirurgia, Moskva
no.3:35-40 Mr '50. (GEML 19:1)

1. Of the Hospital Surgical Clinic (Head -- Prof. G.S. Toprover)
of the Stalingrad Medical Institute.

YUROV, V. S.; GLEZER, I. L.; BALANDINA, A. I.; LYANTSMAN, V. L.

Surgeons

Professor G. S. Toprover. *Khirurgiia*, No. 3, 1952.

Monthly List of Russian Accessions, Library of Congress, August 1952. UNCLASSIFIED.

YUROV, V.S.

Arteriography of Filatov's circular flap formed on a single stem.
Khirurgia, Moskva no.11:44-49 Nov 1953. (GML 25:5)

1. Docent. 2. Of the Hospital Surgical Clinic (Head -- Prof. G. S. Toprover), Stalingrad Medical Institute.

Transplantation (Physiology) (Arteries)

YUROV, V.V.

Specificity of the effect of mambatal and aminazine on the formation of an unconditioned reflex response of the respiratory and cardioinhibitive centers in interoceptive signalization from the lungs. Nauch. trudy Riaz. med. inst. 15:195-201 '62.

(MIRA 1965)

1. Kafedra normal'noy fiziologii (zav. kafedroy - prof. V.P. Shirokiy) Ryezanskogo meditsinskogo Instituta Imeri Pavlova.

GALAKHOV, V.I.; YUROV, V.V.

Electrophysiological study on the exclusion of the afferent
impulsation in intestine nerves by dicaine. Uch. zap. Orlov.
gos. ped. inst. 18:131-136 '63. (MIRA 17:5)

YUROV, V.Ye.

Immunological features of children vaccinated with BCG.
Trudy LSGMI 32:214-221 '57. (MIRA 12:8)

1. Kafedra epidemiologii Leningradskogo sanitarnе-gigiyenicheskogo meditsinskogo instituta (zav.kafedroy - prof.V.A.Bashenin).
(BCG VACCINATION

immunol. features of BCG vacc. child.
in Russia (Rus))

Yuzov, Yu.G.

14(5)

PHASE I BOOK EXPLOITATION SOV/2820

Vsesoyuznyy nauchno-issledovatel'skiy institut geofizicheskikh metodov razvedki

Razvedochnaya i promyslovaya geofizika, vyp. 26 (Exploration and Industrial Geophysics, Nr 26) Moscow, Gostoptekhizdat, 1958. 87 p. (Series: Obmen proizvodstvennym opytom) 4,000 copies printed.

Ed.: M.K. Polshkov; Exec. Ed.: Ye.G. Pershina; Tech. Ed.: A.S. Folosina.

PURPOSE: This booklet is intended for exploration geophysicists and geologists.

COVERAGE: This collection of articles includes discussions of improvements in seismic exploration techniques and interpretations of data obtained by the refracted and reflected waves method of seismic exploration. Individual articles discuss: the construction of gravimetric maps, improvements in industrial borehole equipment, the standardization of radioactive electro-logging equipment, and methods for computing labor productivity in geophysical operations. A nomogram to facilitate the interpretation of data and conditions when using gamma logging of boreholes is described. References accompany each article.

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Exploration and Industrial Geophysics (Cont.)

SOV/2820

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AVAILABLE: Library of Congress

Card 3/3

MM/mg
12-31-59

VARTANOV, S.P.; KORNEV, V.A.; YUROV, Yu.G.

Seismic studies of the Chelken-Neftyanje Kamni profile. Geol. nefi
i gaza 3 no.3:53-56 Mr '59. (MIRA 12:4)

1. Nauchno-issledovatel'skaya morskaya geofizicheskaya ekspeditsiya
Vsesoyuznogo nauchno-issledovatel'skogo instituta geofizicheskikh
metodov razvedki.
(Caspian Sea--Prospecting--Geophysical methods)

YUROV, Yu.G.

Crustal structure of the Caucasus and isostasy. Sov. geol.
6 no.9:113-118 S '63. (MIRA 17:10)

YUROV, Yu. Ya. Leningrad Electrical Engineering Inst. in V.I. Ulfyanov (Lenin)

"Carbon File Voltage Regulators,"

SO: Elektrichestvo, No 1, 1947.

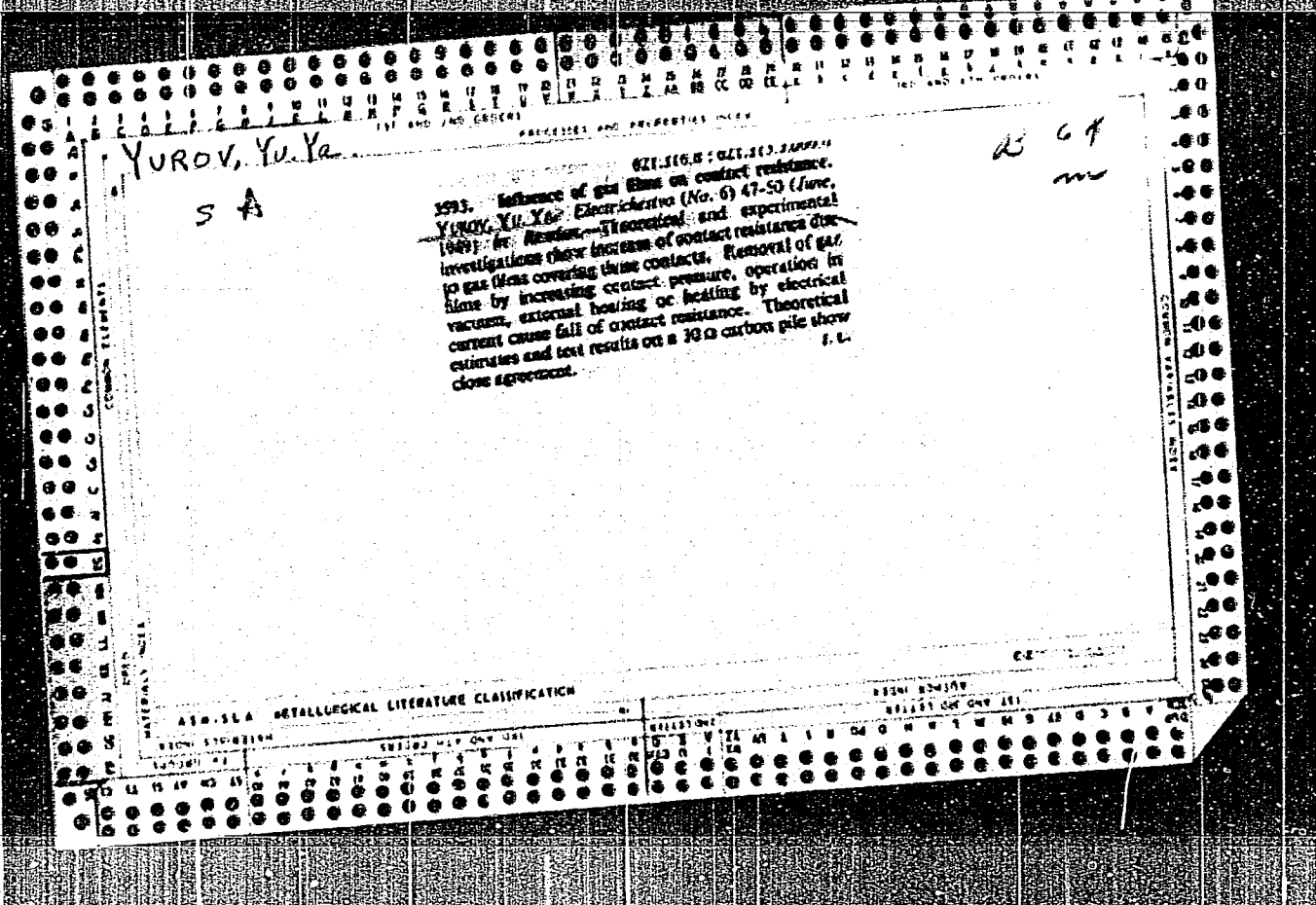
YUROV, Yu. Ya. Docent, Cand. Tech. Sci. Leningrad Electrical Engineering Inst.
Imeni V.I. Ul'yanov (Lenin)

Presented Dissertation, "Quenching of AC Arcs in a Magnetic Field," in 1941.
L. Ye. Mashkilleysan and V.E. Romanovskiy acted as official opponents.
SO: Elektrichestvo, No 3, 1947.

YUNOV, Yu. Ya. Leningrad Electrical Engineering Inst. in. V.I. Ul'yanov (Lenin)

"Development of the Classical Theory of Contacts (Elastic Contacts)"

SO:Elektrichestvo, No 1, 1948.



YUROV, Yu. Ya. Leningrad Electrical Engineering Inst. in Ul'yanov (Lenin)

"A Direct-Reading Instrument for Measuring the Energy of Combustion in an Arc,"

SO:Elektrichestvo, No 10, 1949

YUROV, YU. YA.
USSR/Electronics - Equivalent Circuits

FD-2227

Card 1/1 Pub 90-7/12

Author : Yurov, Yu. Ya.

Title : Equivalent circuits for multiple-grid tubes

Periodical : Radiotekhnika, 10, 50-58, Mar 1955

Abstract : An equivalent linear circuit of a multi-grid vacuum tube, fully accounting for the plate and grid currents, is discussed in this article. The application of equivalent circuits to various problems are worked out on the following specific examples: determination of the stability conditions of mixer tubes and excitation of the transitron oscillators, also, on the example of phantastron performance during the slow process of capacitor charging, and the fast process of tripping. One USSR reference. Diagram.

Institution:

Submitted : 6 Jan 1953

Yurov, Yu. Ya

AUTHOR : Yurov, Yu. Ya.

"A New Microwave Band Balance Mixer,"
A-U Sci Conf dedicated to "Radio Day," Moscow 20-25 May 1957.

PERIODICAL: Radiotekhnika i Elektronika, Vol. 2, No. 9, pp. 1221-1224,
1957, (USSR)

YUROV, Yu. Ya.

New balance converter in the centimeter band. Izv. vys. ucheb. zav.;
radiotekh. no.1:82-88 Ja-F '58. (MIRA 11:4)

1. Rekomendovana kafedroy teoreticheskikh osnov radiotekhniki Lenin-
gradskogo elektrotekhnicheskogo instituta im. V.I. Ul'yanova (Lenina).
(Microwaves)

YUBOV, Yu.Ya., prof., doktor tekhn.nauk

Electromagnetic waves in the space between parallel surfaces,
which is partially filled with a ferrite. Izv. LETI no.38:99-124
'59. (MIRA 13:8)

(Microwaves) (Wave guides)

20380

S/058/61/000/003/024/027
A001/A001

9.1300 (and 2303)

Translation from: Referativnyy zhurnal, Fizika, 1961, No. 3, p. 425, # 32h437

AUTHORS: Yurov, Yu. Ya., Rogozin, V. V.

TITLE: Theoretical Determination of Parameters of a Coaxial-Waveguide Transition

PERIODICAL: "Izv. Leningr. elektrotekhn. in-ta", 1959, No. 39, pp. 3-19

TEXT: The authors consider a coaxial-waveguide transition in which the internal lead of the coaxial line serves as exciting element of the waveguide; its end either is free or closed to the broad wall of the waveguide. The method of calculating such a coaxial-waveguide transition is presented, and relations are derived which make it possible to determine its parameters and to analyze its design from the viewpoint of band width. The calculation is conducted on the following assumptions: 1. The characteristic impedance of the rod is assumed to be equal to that of a thin antenna in free space; 2. Fields on the rod surface are assumed to be equal to fields which would exist on the rod axis, if the rod were absent. With these presumptions, current distribution over the rod was found, and the problem of waveguide excitation by the rod was solved. Simple

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20380

3/058/61/000/003/024/021
A001/A001

Theoretical Determination of Parameters of a Coaxial-Waveguide Transition

formulae were obtained to determine amplitude of waves excited in the waveguide, as well as input conductivities both from the side of the coaxial line and the side of the waveguide. The results of an experimental checking of the relations derived are presented. The results of theoretical calculations agree satisfactorily with experiments in case of non-resonance transition; in the case of resonance transition, the effect of the waveguide walls on the rod characteristic impedance should be taken into account. Examples of calculating coaxial-waveguide transitions are presented.

S. Bryantsev

Translator's note: This is the full translation of the original Russian abstract.

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91/300 (1006, 1144, 1331)

81107
S/058/60/000/006/030/040
A005/A001

Translation from: Referativnyy zhurnal, Fizika, 1960, No. 6, p. 299, # 14944

AUTHOR: Yurov, Yu.Ya.

TITLE: Electromagnetic Waves Between Parallel Planes, When the Space Between Them is Partially filled With Ferrite²⁵

PERIODICAL: Izv. Leningr. elektrotekhn. in-ta, 1959, No. 38, pp. 99-124

TEXT: As a result of solving an electrodynamic boundary-value problem, the propagation constants are determined in a waveguide of infinite height, i.e., in the space between two parallel metallic planes, which is filled with ferrite magnetized perpendicularly to the planes. Moreover, the reflection and transfer of waves is considered through a sudden discontinuity - the joint of two waveguides of different width, the first of which is filled with an isotropic dielectric and the second with magnetized ferrite. The cases are considered, when the wave coming from the first waveguide is a wave of electric or magnetic type. The infinite sums, appearing in the expression obtained for the conductance of the incident wave, are determined approximately from comparing the quasistatic and variational solutions for the capacitive and inductive diaphragms in the waveguide.

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81107
S/058/60/000/006/030/040
A005/A001

Electromagnetic Waves Between Parallel Planes, When the Space Between Them is Partially Filled With Ferrite

For the special case, when the ground type wave can not propagate, an equivalent circuit is obtained, from which it follows that the electric and magnetic waves will transform into each other when reflected from the magnetized ferrite. This transformation is utilized in the ferrite-reflection transformer. The latter represents a short-circuited section of a waveguide with ferrite bar. Two rectangular waveguides are connected with this section through slots. The communication between them arises when the ferrite is magnetized.

A.G. Gurevich

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

YUROV, Yu.Ya., doktor tekhn.nauk, prof.; ROGOZIN, V.V., inzh.

Theoretical determination of the parameters of a coaxial cable
and wave guide coupling. Izv. LETI 57 no.39:3-19 '59.

(MIRA 15:10)

(Microwaves) (Wave guides) (Coaxial cables)

86796

S/142/60/000/003/011/017
E192/E482

9.7800

AUTHORS: ~~Yurov Yu Ya~~ Vinokurov, V.I. and Ustinov, V.B.

TITLE: An Electronic Function Converter

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, 1960, No.3, pp.376-385

TEXT: The problem of transforming a function can be formulated as follows. For a given electrical signal ξ and a known functional relationship

$$\alpha = f(\xi) \tag{1}$$

It is necessary to produce an electrical signal corresponding to the values $\alpha = f(\xi)$. The problem of transforming the given polar coordinates r, φ into rectangular coordinates x and y is often of great importance. Such a transformation is described by

$$x = r \cdot \cos 2\pi \frac{U_0}{U_{om}} \tag{2}$$

$$y = r \cdot \sin 2\pi \frac{U_0}{U_{om}}$$

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where $\varphi = 2\pi U_0/U_{om}$; here U_0 is a voltage and U_{om} is the value of the voltage corresponding to $\varphi = 2\pi$. The coordinate r is given by the voltage amplitude U_m which is a sinusoidal function of time. In order to obtain the voltage proportionate to the coordinate y of Eq.(2), it is possible to employ the circuit shown in Fig.1, where the voltage at the anode changes in accordance with

$$U_1(t) = E + U_m \sin \omega t$$

where E is a constant voltage component, while U_m is the amplitude of the variable component. The load of the tube in Fig.1 is in the form of an RC network connected in the cathode. The tube is normally closed by means of a biasing voltage applied between the grid and the cathode. At the instant t , a positive pulse having a duration τ_u is applied to the grid and the tube becomes conducting during the presence of the pulse. Now, if the

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time constant for charging the condenser C is much shorter than τ_u , C will be charged to the voltage almost equal to the anode potential. If $RC \gg T$ (T is the period of the anode voltage) and the positive pulse at the grid is repeated periodically, the voltage across C changes insignificantly during the discharge period. The average voltage across C is therefore given by

$$U_c(t_1) = \gamma(E + U_m \cdot \sin \omega t_1) \quad (3)$$

where γ is a constant factor taking into account the influence of RC and T . In order to obtain the voltage proportional to the other coordinate (x), a circuit, similar to that of Fig.1, is used but its anode voltage should be shifted in a phase by 90° . The positive pulses at the grid of this circuit should be applied at the same instants as those in a circuit of Fig.1. If the system is to operate correctly, it is necessary that the instant of the appearance of the positive pulse should be determined by the coordinate φ , that is by the voltage U_0 . Consequently the
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following conditions should be met

$$t_1 = \frac{U_0}{U_{om}} \cdot T \quad (4)$$

In practice, this condition can be realised by means of the circuit shown in Fig.3 where the voltage U_{Bx} is in the form of a sawtooth waveform having the repetition period equal to a multiple of T . The amplitude of the sawtooth voltage should be equal to U_{om} or a multiple of it. As long as the sawtooth voltage is lower than U_0 , the tube in Fig.3 is open and no current flows through the rectifier. However, at the instant when the sawtooth voltage becomes equal to U_0 the tube becomes closed. A positive pulse is therefore obtained at the anode of the tube. This is differentiated and the resulting short pulse is applied to the grid of the tube in the circuit of Fig.1. Such pulses thus appear at the instant t_1 . Fig.4 shows a practical circuit which can be used for the purpose of coordinate

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E192/E482

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transformation. Though the above case considers the transformation defined by Eq.(2), it can have very general application, since various non-linear functions which are periodical can be approximated by a Fourier series consisting of a number of harmonics. A block diagram of a device permitting the transformation of complex non-linear functions is given in Fig.5. Here the unit providing the constant component can be built in the form of an accurate divider of a highly stable voltage. The units for various harmonics are the form of the circuit shown in Fig.4. Each harmonic unit will produce a sinusoidal and co-sinusoidal voltage component. The generator of the sinusoidal oscillations for all the units can be the same, if a suitable number of frequency multipliers is employed. A converter circuit, of the type shown in Fig.4, was investigated experimentally. The circuit operated in the frequency of 15 kc/s and the duration of the positive pulse was 0.6 μ sec. The system was supplied from a stabilized force of 200 V. Curves illustrating the transformation of several functions by means of this device are shown in Fig.6.

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E192/E482

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The circuit of Fig.4 can be employed to perform various mathematical operations such as division, multiplication, root extraction, squaring and so on. The use of the circuit in determining the logarithm of a number is analysed in some detail. It is shown that in this case it is necessary to apply an exponentially rising voltage instead of a sawtooth voltage to the comparison circuit of Fig.3. The circuit can also be used for determining the number whose natural logarithm is known. The circuit has the following sources of errors: (1) instability of the voltage E ; (2) instability of the instant t_1 , which may be due to the instability of the sawtooth voltage or the instability of the comparison circuit; (3) dependence of the coefficient γ of Eq.(3) on the internal resistance of the tube in the circuit of Fig.1 and (4) the instability of the voltage amplitude U_m . These errors are analysed in some detail and it is shown that the cathode follower in the converter circuit can be stabilized by using the system shown in Fig.7. There are 7 figures and 3 Soviet references.

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E192/E482

An Electronic Function Converter

ASSOCIATION: Kafedra teoreticheskikh osnov radiotekhniki
Leningradskogo elektrotekhnicheskogo instituta im.
V.I.Ul'yanova (Lenina)
(Department of the Radio Engineering Theory of
Leningrad Electrotechnical Institute imeni
V.I.Ul'yanov (Lenin))

SUBMITTED: January 25, 1960

Card 7/7

24223

S/142/61/004/001/002/008
E033/E1357.1300

AUTHOR: Yurov, Yu.Ya.

TITLE: Coupling of normal waves in waveguides with ferrites

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy,
Radiotekhnika, 1961, Vol.4, No.1, pp. 26-36

TEXT: Separation of the variables in the Maxwell equations for waveguide containing ferrite requires that the directions of the coordinate axes be along the main axes of the ferrite permeability tensor and that the boundaries of the waveguide and of the ferrite coincide with the coordinate surfaces. This requirement limits the method to a narrow class of problems. The difficulty can be avoided by considering the ferrite permeability in the form of vector products independent of the coordinate system. To simplify the physical interpretation of the solutions, the field is resolved into a series of normal waves for a homogeneously-filled waveguide and their longitudinal components. Electromagnetic waves in waveguides of arbitrary cross-section, containing ferrite of arbitrary cross-section, magnetized in an arbitrary direction in the transverse plane, are represented as the sum of the empty waveguide waves and their longitudinal components. Expressions
Card 1/4

24223

Coupling of normal waves in

S/142/61/004/001/002/008
E033/E135

are obtained for the propagation constants and for the amplitudes of the waves. A new principle of transformation of an axially-symmetrical wave into a linearly-polarized wave by using ferrite is advanced and realized experimentally. The theory not only enables practical apparatus, at the present unamenable to calculation, to be analyzed, but also suggests new ferrite applications based on the mutual coupling of normal waves by the magnetized ferrite. One such application, a travelling wave switch, is described. The switch consists of circular waveguide and a transversely magnetized ferrite rod at its centre. At one end of the waveguide is a slot and the other end is terminated by a coaxial line. When the ferrite is magnetized, the wave passes without reflection from the slot into the coaxial line, but when the magnetic field is removed a decoupling of about 35 dB is obtained, as observed in the experimental, centimetric-wavelength model. The switch had the dimensions: diameter 9 mm, length 12 mm., and was filled with silicon-oil. The average power passed was 200 watts at 100 kw per pulse. Control was obtained by an electromagnet having 250 amp-turns. With little modification, the theory can be applied to travelling wave parametric amplifiers.

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E033/E135

Coupling of normal waves in.....

The modified Maxwell equations are:

$$\text{rot } \vec{H} = j \omega \epsilon \vec{E} + \vec{j}, \quad \text{rot } \vec{H} = -j \omega \mu_0 \vec{H} - \vec{m} \quad (3)$$

where \vec{H} is the magnetic field vector; $j = \sqrt{-1}$; ω is the angular frequency; \vec{E} is the electric field vector; \vec{j} is the electric flux of polarization; and μ_0 is the permeability of homogeneous-filling. Eqs.(3) can be considered as comprising side currents, and using Lorentz' lemma in the form proposed by L.A. Vaynshteyn (Ref.7: "Electromagnetic waves", Izd-vo Sovetskoye radio, 1957) a solution can be obtained in the form of the sum of the normal waves and their longitudinal components, excited by the side currents in the waveguide with homogeneous filling. The normal waves of the transverse-magnetic and transverse-electric types, expressed for cylindrical waveguides, regular along the z axis, by the vector potentials, in the direction of the axis of the waveguide, are given in Appendix 1 as a system of vector functions which gives a physical picture of the field. In Appendix 2 are obtained formulae expressing the field (\vec{E} and \vec{H}) in a waveguide with ferrite as the sum of the normal

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Coupling of normal waves in.....

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E033/E135

f

waves. The dependence of the waves re-radiated by the ferrite on the dimensions of the waveguide and of the ferrite is investigated. There are 12 references: 9 Soviet-bloc, 1 German and 2 English. The English language references read as follows:

- Ref.5: H. Seidel, R.C. Fletcher. Gyromagnetic Modes in Waveguide Partially Loaded with Ferrite. BSTJ, 1959, 11, No.6, 1427.
Ref.6: R.A. Waldron. Electromagnetic Wave Propagation in Cylindrical Waveguides Containing Gyromagnetic Media. J. Brit. IRE, 1958, 18, 597.

ASSOCIATION: Kafedra teoreticheskikh osnov radiotekhniki.
Leningradskogo elektrotekhnicheskogo instituta im.
V.I. Ul'yanova (Lenina)
(Department of Theoretical Principles of Radio-
Engineering of the Leningrad Electro-Technical
Institute imeni V.I. Ul'yanov (Lenin)

SUBMITTED: June 2, 1960

Card 4/4

ACCESSION NR: AT401755*

S/307*/62/000/047/0056/0062

AUTHOR: Yurov, Yu. Ya. (Doctor of technical sciences, Professor); Lavrenko, Yu. Ye. (Assistant)

TITLE: Metal-plate lens for circular polarization with covered zoning

SOURCE: Leningrad. Elektrotekhnicheskiy institut. Izv., no. 47, 1962, 56-62

TOPIC TAGS: metal plate lens, cellular lens, circular polarization, covered zoning, slotted thin ridge waveguide, crossed ridge waveguide, directivity pattern, principal lobe

ABSTRACT: A metal-plate microwave lens design proposed by E. K. Proctor (Trans. IRE on Antennas and Propagation, AP-6, M3, July 1958) is modified to permit circular polarization. The principal lobe of the directivity pattern of the antenna is of the order of 6° and the beam can be scanned within $\pm 30^\circ$ by displacing the dipole over the focal plane of the lens. To match the antenna to the impedance of free space, each cell of the antenna is a rectangular waveguide loaded with crossed slotted thin ridges. The lens itself has a spherical external surface and an internal surface in the form of an ellipsoid of revolution,

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ACCESSION NR: AT4017554

the far focus of which coincides with the focus of the lens on the optical axis. The maximum lens diameter is 32.5 cm and the focal distance is 32 cm. The material is sheet brass 0.5 mm thick, and the finished lens weighs 2 kilograms. Tests of the antenna showed good agreement with the theoretical prediction.

ASSOCIATION: Leningradskiy elektrotekhnicheskiy institut (Leningrad Electro-technical Institute)

SUBMITTED: 00Mar61

DATE ACQ: 20Mar64

ENCL: 00

SUB CODE: GE, SP

NR REF SOV: 000

OTHER: 002

Card 2/2

6.9210

S/142/62/005/006/002/011
E140/E435

AUTHORS:

Yurov, Yu.Ya., Vinokurov, V.I., Makkaveyev, V.I.

TITLE:

Design of a correlator based on a linear system with variable parameters

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy. Radiotekhnika, v.5, no.6, 1962, 672-681

TEXT:

A parametric element has been used as the multiplier on which a correlator has been based. The element is applied in the commonly used balanced bridge modulator. There are 4 figures and 1 table.

VB

ASSOCIATION:

Kafedra teoreticheskikh osnov radiotekhniki Leningradskogo elektrotekhnicheskogo instituta im. V.I.Ul'yanova (Lenina) (Department of Theoretical Fundamentals of Radioengineering, Leningrad Electrical Engineering Institute imeni V.I.Ul'yanov (Lenin))

SUBMITTED:

April 13, 1962

Card 1/1

S/142/617-00/001/017
E170/E382

AUTHOR: Yakov Y. Ya.

TITLE: Application of the theory of a single conducting filament to the analysis of processes in cathode-ray devices

PERIODICAL: Izvestiya vysshikh shkolnykh zavedeniy, Radiotekhnika, v. 9, no. 1, 1967, 17 - 23

TEXT: The vector potential

$$A = \frac{1}{4\pi r} \int \frac{e^{-ikr}}{r} j dV \quad (1)$$

in the theory of a thin conducting filament (Pistol'kors, A.A. Antennы, Antennish, Svyaz'izdat, 1957; Shchelkunov, S. and Pruzhik, I. Antennы, teoriya i praktika, Antennas, Theory and Practice, Izd-vo Svyetskoye radio, 1951) is used for calculating the electric and magnetic fields produced by the filament;

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Application of

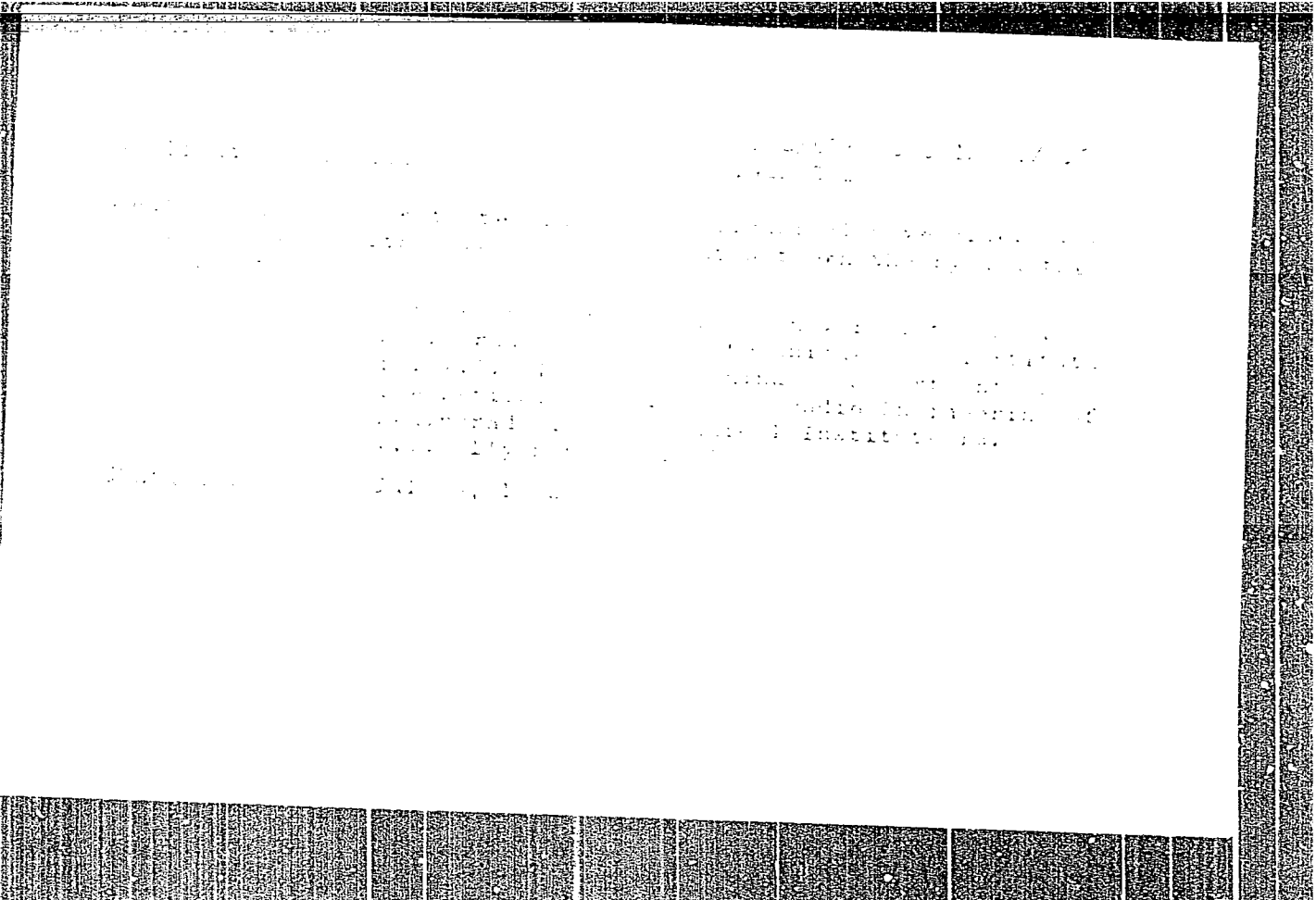
S/142/63/006/001/001/015
E192/E382

$$\vec{E} = \frac{1}{i\omega\epsilon_0} (\text{grad div } \vec{A} - \Delta \vec{A}); \quad \vec{H} = \text{rot } \vec{A} \quad (2)$$

The vector potential depends on the current-density \vec{J} in the conductor. Eq. (2) gives only that portion of the field which is produced by the current flowing in the filament. It is therefore necessary to take into account the field produced by the currents flowing in the walls of a waveguide or other devices and add this to Eq. (2). This field would produce a current in the conductor which could be found by introducing an impedance parameter calculated by means of the skin-effect theory. Substitution of the current value into Eq. (1) leads to an integral equation with respect to \vec{A} .

... introducing an impedance parameter into Eq. (1) leads to an integral-differential equation with respect to the current in the conductor. However, in the theory of antennas it is usually sufficient to use an approximate differential equation where only the main portion of the integral in Eq. (1) remains; the sub-integral function in this tends to infinity for $r \rightarrow 0$. The current distribution found by using the approximate differential equation can be evaluated more accurately by the method of successive approximations.

Card 2/4



YUROV, Yu.Ya., doktor tekhn. nauk, prof.

Eddy currents in solid magnetic circuits of high-speed
automatic control systems. Izv. LETI no.48:196-211 '63.
(MIRA 17:12)

1. Yurov, Yu. Ya. Vinokurov, V. I. ISSN-2/ISSN(b)-3/EWA(b) Page 4
Feb 1964

ACCESSION NR: AP4042847

8/0142/64/007/003/0310/0315

AUTHOR: Yurov, Yu. Ya. (Professor); Vinokurov, V. I.

TITLE: Increasing radiometer sensitivity by noise modulation of input signals

SOURCE: IVUZ. Radiotekhnika, v. 7, no. 3, 1964, 310-315

KEYWORDS: radiometer; periodic noise modulation; random noise modulation; gaussian noise; noise modulated radiometer; correlator; noise level reduction

ABSTRACT: Radiometer sensitivity may be increased by random-noise modulation (instead of periodic noise modulation) of its input signals and the subsequent insertion of a correlator based on the principle of a linear system with variable parameters (see Fig. 1 of the Enclosure). Both the random noise and reference noise are applied to the input. The changeover switch is controlled by the voltage of limited gaussian noise. The signal from the switch output and that corresponding to the set-noise of the receiver are amplified and applied jointly to the detector. In addition to the set-noise, volt-

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ACCESSION REF: AF4040847

are which varies in time with the random noise appears at the detector output. An g-f amplifier with properly selected frequency band is used to eliminate distortion of the effect signal. The correlator represents a linear system in which the conductivity of the detector varied in time with the modulating signal. The effective signal and the variation of system parameters are correlated between themselves but not with the set-noise. This results in an increase of constant voltage at the correlator output. Set-noise is transformed by the correlator in the widest band of a random form. This expansion of noise-spectrum density at the output according to the frequency is possible only with noise modulation of the input signal. The noise power level corresponding to one cycle with noise modulation is less than that with periodic modulation. This resulted in a reduction of the noise level at the radiometer output, which corresponds to the $\sqrt{2}$ gain in the signal-to-noise ratio. Orig. art. has: 3 figures and 2 formulas.

ASSOCIATION: none

SUBMITTED: 02JUN62

ATD PRESS: 3112

ENCL: 01

SUB CODES: EC
Card 2.1

NO REF SOV: C02

OTHER: 001

ACCESSION NO: AP4042847

ENCLOSURE 01

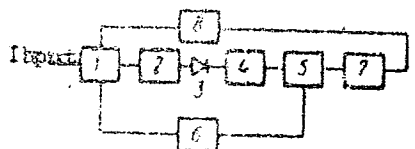


Fig. 1. Simplified block diagram of

1 - Switch modulator; 2 - amplifier;
3 - detector; 4 - selective f -f am-
plifier; 5 - correlator; 6 - quan-
tized noise generator; 7 - f -f filter;
8 - reference noise source and indi-
cator.

Card 3.3

L 39580-66 GD

ACC NR: AP6000517

SOURCE CODE: UR/0142/65/008/005/0511/0522

AUTHOR: Yurov, Yu., Ya.

ORG: none

TITLE: Transformation of transverse oscillations of an electron beam by short magnetic lenses

SOURCE: IVUZ. Radiotekhnika, v. 8, no. 5, 1965, 511-522

TOPIC TAGS: electron beam, electron beam tube

ABSTRACT: Vector-product eigen-vectors are introduced which split the equations of the motion of electrons in a magnetic field independently of the time and spatial conditions of the problem; the transformation of r-f waves by axisymmetrical magnetic lenses is represented in a simple mathematical form. Thus, a linearized equation of motion: $(\vec{v}_0 \cdot \nabla) \vec{v} = \omega_c [\vec{v}, \vec{e}_z] - \frac{1}{2} \frac{\partial \omega_c}{\partial z} ([\vec{v}, \vec{r}] + [\vec{v}_0, \vec{s}] + [\vec{v}_0, \vec{r}])$, (where \vec{v}_0 is the undisturbed electron velocity before the lens, \vec{v} is the velocity increment due to the disturbance, \vec{s} is the electron displacement, and $\omega_c = \frac{qH_z}{m}$ is the cyclotron-resonance frequency) can be split into these three scalar equations:

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ACC NR: AP6000517

$$v_0 \frac{\partial^2 s_1}{\partial z^2} + i \omega_c \frac{\partial s_1}{\partial z} + \frac{l}{2} \frac{\partial \omega_c}{\partial z} s_1 = -l \frac{\partial \omega_c}{\partial z} \frac{x-y}{2};$$

$$v_0 \frac{\partial^2 s_2}{\partial z^2} - i \omega_c \frac{\partial s_2}{\partial z} - \frac{l}{2} \frac{\partial \omega_c}{\partial z} s_2 = l \frac{\partial \omega_c}{\partial z} \frac{x+y}{2};$$

$$v_0 \frac{\partial^2 s_2}{\partial z^2} + \frac{\partial \omega_c}{\partial z} \left[(lx+y) \frac{\partial s_1}{\partial z} + (-lx+y) \frac{\partial s_2}{\partial z} \right] = 0.$$

It is proven that the levorotatory and dextrorotatory modes do not exchange their places; the transformation problem is reduced to solving a system of integral equations with the final results in a closed form. For short lenses, a matrix of

transformation of eigen-modes of the electron beam is introduced; the matrix clearly illustrates the process even on reversal of the permanent magnetic field. It is demonstrated that, upon a symmetrical magnetic-field reversal, cyclotron waves turn into synchronous and vice versa. The new formulas are offered for use in designing electron-beam tubes with transverse oscillations of electrons. Orig. art. has: 68 formulas.

SUB CODE: 09 / SUBM DATE: 12Dec64

Card 2/2 11b

KLEMENT'YEVA, A.I.; SKOROKHODOV, M.A.: Prinsipali uchastiye: ALEKSANDROV, G.P.;
BABUN, F.Ya.; BAYBARIN, P.P.; VAYNSHTEYN, TS.Z.; GUSEV, L.V.; ZHETVIN,
N.P.; KONFSEVAYA, Ye.M.; LEVINA, M.M.; HOVLIANSKAYA, E.A.; POD-
VOYSKIY, L.N.; TRUNTSEV, D.S.; FLEROV, N.G.; CHIKHACHEV, I.A.; YUROV,
Yu.M.; GUDKOVA, N., red.; YEGOROVA, I., tekhn.red.

[Light over the gate] Svet nad zastavoi. Moskovskii rabochii,
1959. 422 p. (MIRA 12:4)
(Moscow--Metallurgical plants)

LEBEDEV, V.I.; NAGAYTSEV, Yu.V.; POTOTSKAYA, V.Ye.; PRUDNIKOV, Ye.D.;
SHAPKINA, Yu.S.; YUROVA, G.M.

Materials on the study of the mineralogy of metamorphic rocks
in the northwestern part of the Lake Ladoga region. Min. i
geokhim. no.1:131-156 '64. (MIRA 18:9)

YUROVA, I. L.

AUTHOR: Yurova, I.L., Candidate of Philosophical Sciences 25-58-4-23/41

TITLE: Prayers Will not Help to Raise Crops (Molitvami urozhaya ne vyrastish')

PERIODICAL: Nauka i Zhizn', Nr 4, pp 60-65 (USSR)

ABSTRACT: This article states that science, not religion, is the key to good harvests. There are 5 figures.

AVAILABLE: Library of Congress

Card 1/1 1. Agriculture

OPARIN, A.I., akademik; STUDITSKIY, A.N., prof.; NAUMOV, N.P.,
prof.; KOVAL'SKIY, V.V.; YUROVA, I.L., dots.; PLATONOV, G.V.,
prof.; KAGANOV, V.M.; FURMAN, A.Ye., dots.; MEDVEDEV,
N.V., prof.; YAKIMOV, V.P., kand. biol. nauk;
ZHUKOV-VEREZHNIKOV, N.N.; BONDARENKO, P.P., prof.;
MAYSKIY, I.N., prof.; TRIBULEV, G.P., dots.;
TSAREGORODTSEV, G.I., dots.; DOBROKHVALOV, V.P., kand.
biol. nauk; YAZDOVSKIY, V.I., prof.; VIKTOROVA, V., red.;
CHEREMNYKH, I., mlad. red.; ULANOVA, L., tekhn.red.

[Studies on the dialectic of living nature] Ocherk dia-
lektiki zhivoi prirody. Moskva, Sotsekgiz, 1963. 527 p.
(MIRA 16:12)

1. Chlen-korrespondent Vsesoyuznoy akademii sel'skokho-
zyaystvennykh nauk imeni V.I.Lenina (for Koval'skiy).
2. Deystvitel'nyy chlen AMN SSSR (for Zhukov-Verezhnikov).
(Biology--Philosophy)

YUROVA, K. S.: Master Biol Sci (diss) -- "Aspects of reflex reactions in the development of experimental inflammation in the effector portion of the reflex arc (the heart)". Leningrad, 1958. 20 pp (Min Health RSFSR, Leningrad Sanitary-Hygiene Med Inst), 200 copies (KL, No 5, 1959, 148)

L 42195-55 EWG(j)/EWG(r)/EWT(1)/FS(v)-3/EWG(v)/EWG(a)-2/EWG(c)
P3-4/Pa-5 AFFTC/AFMDC, AMD/APQC DD

ACCESSION NR: AT5010598

UR/3147/64/003/000/0053/0093

AUTHOR: Gramenitskiy, I. M.; Savich, A. A.; Yurova, K. S.

37
B71

TITLE: The action of various intravenously injected gasses on the organism

SOURCE: AN SSSR, Institut evolyutsionnoy fiziologii, Funktsii organizma v usloviyakh izmenennoy gazovoy sredy, v. 3, 1964, 53-59

TOPIC TAGS: intravenous gas injection, aeroembolism, decompression sickness

ABSTRACT: The authors studied the effects of intravenously injected oxygen, carbon dioxide, nitrogen, and helium on 50 cats and 18 rabbits. Fifteen chronic experiments were conducted on rabbits. Acute experiments took place under hexenal anesthesia. A kymograph was used to record respiration and blood pressure in the left femoral artery. A canule was introduced into the right femoral vein for the injection of gases, and the rate at which gas could be injected into the vein was accurately regulated. In a number of acute experiments, animals breathed pure oxygen or helium-oxygen mixtures when gas was injected. In such cases tracheotomies were conducted and respiration took place by means of a small valve which was con-

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ACCESSION NR: AT5010598

ected to the tracheotomy tube. In 14 experiments a comparative analysis of the reaction of animals to the intravenous injection of gasses was conducted on animals with intact nervous systems and on animals with resected vagus nerves. In all, there were 15 carbon dioxide, 40 oxygen, 90 air, and 26 helium-oxygen-mixture injections. The rate at which gasses were injected depended upon the objective of the experiment. In chronic experiments, gasses were injected into the auricular vein of rabbits and their condition and behavior were then observed.

The experiments showed that changes in respiration and circulation produced by intravenous injection of various gasses were very close to changes in these functions observed during acute decompression disruptions. This indicated that aeroembolism of the venous system and lung vasculature play a dominant role in decompression disruptions. It was also found that different gasses, injected intravenously, differed in their physiological effect. The most acute physiological effect occurred when nitrogen was injected. In descending order, helium, oxygen, and carbon dioxide had less effect on the organism. This can be explained by the fact that the diffusion of the gasses administered differed and that oxygen and carbon dioxide were

Cont. 2/3

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ACCESSION NR: AT5010598

already chemically associated with the organism. The consequences of artificial aeroembolism in its most severe stage depend upon the diffusion correlation which occurs in the lungs between aeroembolisms and gaseous mixtures which accumulate in alveolar areas. In the elimination of aeroembolisms, the diffusion of gases from lung capillaries in the alveoli play a leading role. These facts should be considered when analyzing decompression disruptions or their treatment. The authors concluded that aeroembolism can serve as an experimental model for general decompression disruptions. Orig. art. has 4 figures.

ASSOCIATION: none

SUBMITTED: 00

NO RET SOV: 004

INCL: 00

OTHER: 000

SUB CODE: PH, LS

ATD PRESS: 3240-F

Card 3/3

GRAMENITSKIY, P.M.; MUROVA, K.S.

Training the organism for artificial aeroembolism. Funk. org v usl.
izm. gaz. sredy 3:60-66 '64. (MIRA 17:11)

L 42192-85 EWG(J)/EWG(F)/EWT(1)/FS(v)-3/EWG(v)/EWG(a)-2/EWG(c) Pb-4/
Pa-5 AFPC/AFMC/AMD/AFSC DD
ACCESSION NR: AT5010601 UR/3147/64/003/000/0072/0078

AUTHOR: Aver'yanov, V. A.; Yurova, K. S.

3/
E+1

TITLE: Experimental aereoembolism under conditions of hypo- and hyperthermia

SOURCE: AN SSSR. Institut evolyutsionnoy fiziologii, Funktsii organizma v usloviyakh izmenennoy gazovoy sredy, v. 3, 1964, 72-78

TOPIC TAGS: hypoxemia, aereoembolism, decompression sickness, central nervous system, hypothermia, hyperthermia

ABSTRACT: The purpose of the present investigation was to determine how temperature affected the resistance of the organism to the effects of aereoembolism. Experiments were conducted on rabbits weighing 1.9-4.0 kg. In all, 23 chronic and 13 acute experiments were conducted. In the chronic experiments the rabbits were injected in the auricular vein with 2 ml of air for 1 min. The animals were then freed and observations were conducted on their initial and final reactions to aereoembolism. Of 23 rabbits, 8 served as controls and did not undergo any thermal stress prior to injection of air, 8 were subjected to preliminary cooling, and 7 were exposed to preliminary heating. In the acute experiments, the control animals which

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ACCESSION NR: AT5010601
contours of a rabbit. Water and ice were added between the two walls of the vat. When rectal temperature had reached 34.0—34.4° C (which took 1—2 hr in the chronic experiments), the animals were removed from the chamber and given injections of air. In the acute experiments the rabbits remained in the vat in a fixed position throughout the entire experiment. When the rectal temperature of these animals had reached 34° C, the cold water was replaced by water at 20—25° C. The aim of this regimen was to keep the temperature of the animals at a constant level. Heating of rabbits in both acute and chronic experiments was carried out by placing them in a special wooden hutch with a door and window. By means of seven electrodes located within the hutch, the temperature of the air was raised to and maintained at a level of 42—43° C. When the rectal temperature of the rabbits had reached 42° C, they were removed from the hutch and, in the chronic experiments, left as in the hyperthermia experiments. In the acute experiments, the animals were removed from the hutch when their rectal temperature reached 43.0° C and placed in the Nikolayev-Subbotin vat. When the temperature of animals in the vat began to drop, they were covered with hot water bottles. In all cases rectal temperature was measured by means of thermocouples and thermometers from the beginning of cooling through the end of the experiment.

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L 4:192-69
ACCESSION NR: A15010601

had been heated and cooled were placed in a fixed position without anesthesia. In this group arterial pressure and respiration were recorded kymographically. Cooling of the animals took place in a vat developed by Nikolayev and Subbotin—a double-walled metal vessel designed along the

The experiments revealed that when animals had been cooled or heated their resistance to experimental aeroembolism was increased. This increase in resistance to aeroembolism was more pronounced during hypothermia than during hyperthermia. The mechanisms of resistance to aeroembolism during hypothermia and hyperthermia are evidently different in nature. Resistance to aeroembolism is probably aided during hyperthermia by the quicker elimination of air bubbles from the blood stream and during hypothermia by a lowering of the sensitivity of the central nervous system to deleterious reflex influences associated with gas bubbles and hypoxemia.

0 fig. art. has 6 figures.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: PH, L3

NO REF SOV: 012

OTHER: 001

ATD PRESS: 3240-F

Cont 3/3 164

1964-65 EWG(j)/EWG(r)/EWT(1)/PS(v)-3/EWG(v)/EWG(a)-2/EWG(c) Pb-4/
Pg 5 AFMDC/AFMDS/AMD/APCC DE

ACCESSION NR: AT5010602

UR/3147/64/003/000/0079/0086

AUTHOR: Arsen'yeva, V. I.; Gramenitskiy, P. M.; Yurova, K. S.

TITLE: Comparative characteristics of the circulatory and respiratory reactions of anesthetized dogs to decompression and artificial aeroembolism

SOURCE: AN SSSR, Institut evolyutsionnoy fiziologii. Funktsii organizma v usloviyakh izmerennoy gazovoy sredy, v. 3, 1964, 79-86

TOPIC TAGS: aeroembolism, respiration, circulation, decompression sickness, bends

ABSTRACT: The first objective of the experiment was to study the respiratory and cardiovascular reactions of the organism to decompression and artificial aeroembolism in chronic experiments. The second objective was to elucidate whether training for artificial aeroembolism was effective in increasing the resistance of the organism to decompression disruption or, conversely, whether increasing the resistance of the organism to decompression increased its resistance to intravenous injection of gases. Experiments were performed on three dogs trained to lie on one side in a special cradle and breathe through a mask. An MPO-2 oscillograph was used to

REPORT NO: AT5010602

record respiration and pulse. At the same time, gas counters registered the volume of lung ventilation. All these indices were recorded following exposure to the compression from pressures of 4.5 atm (exposure 15-16 min), or to air embolus injection of air in quantities of 20-15 ml in the course of 1-1.5 min. Fig. 1 shows the system used to inject air into the experimental

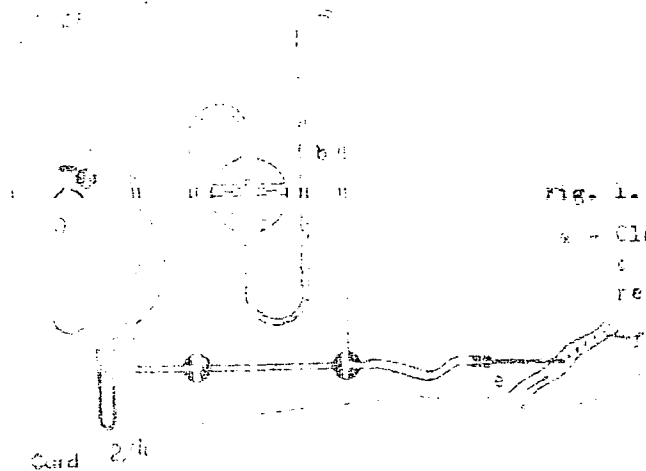


Fig. 1. System for intravenous air injection

a - Glass sphere; b - graduated burette;
c - ISAM-48; d - reducer; e - injection
needle; f - vein.

ACCESSION NR: AT5010602

The dogs were exposed to decompression, and when typical symptoms of bends occurred (paralysis of the rear limbs), the indices described previously were recorded for 3—5 min, the animals were then given therapeutic recompression. In all, 187 tests were conducted with decompression and 14 of them intravenously injected gasses.

Changes in respiration and cardiac activity of unanesthetized dogs during decompression and artificial aeroembolism were essentially similar. Training the organism for artificial aeroembolism increases the resistance to decompression disruptions, training for decompression disruptions increases the resistance of the organism to intravenous injections of gasses. Increasing the resistance of the organism to decompression in the first experiments is based primarily on conditioning the reaction of the respiratory and cardiovascular systems to aeroembolisms.

The authors feel that the reaction of the organism to decompression and artificial aeroembolism is conditioned by the fact that deleterious functional shifts are eliminated and protective functional shifts developed.

It is also suggested that these protective reactions develop more rapidly than gas bubbles form in the blood. Orig. art. has 7 figures.
Cod. 14

33153
S/058/62/000/004/034/160
A058/A101

24.6500

AUTHORS: Yurova, L., Polyakov, A. A., Stepanov, S. B., Troyanskiy, V. B.

TITLE: Neutron diffusion length and moderation length in diphenyl and monoisopropyl diphenyl

PERIODICAL: Referativnyy zhurnal, Fizika, no. 4, 1962, 61, abstract 4B461
(V sb. "Neytron. fizika". Moscow, Gosatomizdat, 1961, 192 - 197)

TEXT: The diffusion length of thermal neutrons was measured in diphenyl at $t = 35^\circ, 85^\circ$ and 130°C and in monoisopropyl diphenyl at $t = 20^\circ\text{C}$. Deviation from operating temperature did not exceed $\pm 2^\circ$. The following values of L were obtained: 4.77 ± 0.14 cm, 4.93 ± 0.08 cm and 5.47 ± 0.04 cm for diphenyl and 3.34 ± 0.31 cm for monoisopropyl diphenyl. The mean value of the transport cross section of hydrogen in noncrystalline matter that was calculated on the basis of these data and reduced to $t = 20^\circ\text{C}$ turned out to equal $\sigma_{tr}^H = 35.7 \pm 1.2$ barn. The age of fission neutrons τ_{fis} and of neutrons from a Po-Be source τ_{sou} was also measured in solid diphenyl ($t = 35^\circ\text{C}$) up to indium resonance. Measurements were carried out in a cylinder 40 cm in diameter and 90 cm in height placed in the thermal

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S/058/62/000/004/034/160
A058/A101

Neutron diffusion length and...

column of a reactor, the source of fission neutrons being an enriched uranium target-converter. Control measurements with the Po-Be source, carried out at different experimental geometries and cylinder sizes, showed that the distribution of resonance neutrons in diphenyl surrounded by graphite corresponds to the distribution in an infinite medium. It was found that $\tau_{fis} = 54.2 \pm 2.5 \text{ cm}^2$ and $\tau_{sou} = 106.5 \pm 6.8 \text{ cm}^2$. At the same time, measured values of neutron age appreciably exceed calculated values.

S. Zaritskiy

[Abstracter's note: Complete translation]

Card 2/2

YUROVA, L. G. --

"Some Clinical-Neurological Syndromes in Typhoid Fever in the
Light of I. P. Pavlov's Doctrines." Cand Med Sci, Khar'kov Medical
Inst, Khar'kov, 1953. (RZhSiol, No 2, Sep 54)

Survey of Scientific and Technical Dissertations Defended at USSR
Higher Educational Institutions (10)

SO: Sum. No. 481, 5 May 55

YUROVA, L.G., kand.med.nauk

Exacerbations and relapses in Botkin's disease. Sov.Med. 27
no.7:110-114 J1'63. (MIRA 16:9)

1. Iz kafedry infektsionnykh bolezney (ispolnyayushchiy obyazannosti zaveduyushchego L.G.Yurova) Luganskogo meditsinskogo instituta.

(HEPATITIS, INFECTIOUS)

YUROVA, L. IV

SKACHKOV, Sergey Vladimirovich; KONSTANTINOV, Leonard Vasil'yevich;
STROGANOVA, Rimma Petrovna, YUROVA, Lidiya Nikolayevna, TOFORKOVA,
Eleonora Petrovna; RYDNIK, V.I., red.; MURASHOVA, M.Ya., tekhn.red.

[Collection of problems in nuclear physics] Sbornik zadach po
iadernoï fizike. Moskva, Gos. izd-vo tekhniko-teoret. lit-ry,
1958. 164 p. (MIRA 11:3)
(Nuclear physics--Problems, exercises, etc.)

YUROVA, L.M.; KHROMOV, V.V.; MYRTSYKOVA, I.A.; POLYAKOV, A.A.; PETROVA, T.Ye.

Investigation of the performance of a proportional neutron
counter filled with boron trifluoride. Nek.vop.inzh.fiz.

no.3:65-73 '58.

(MIRA 12:5)

(Neutrons--Measurement)

(Nuclear counters)

33237
S/089/62/012/002/009/013
B102/B138

26.2241
AUTHORS:

Yurova, L. N., Polyakov, A. A., Ignatov, A. A.

TITLE:

New measurements of U^{235} fission neutron age in hydrogen-containing substances

PERIODICAL:

Atomnaya energiya, v. 12, no. 2, 1962, 151 - 152

TEXT: The distributions of 1.46-ev neutrons as a result of slowing down U^{235} fission neutrons in H_2O and $C_{15}H_{16}$ were measured for two source thicknesses: 0.3 and 1.8 mm. An indium detector was placed in a stainless-steel tank in the thermal column of the reactor for measuring the age of neutrons slowed down in $C_{15}H_{16}$. A highly enriched uranium metal target converting fast fission neutrons into thermal neutrons was the neutron source. The neutron distribution was determined by two targets, one at the end of a 150 mm long aluminum tube, the other 120 mm from the bottom of the tank for control measurements, which showed that the aluminum tube did not distort distribution. On the outside of the tank bottom another target was

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3323

S/089/62/012/002/009/013
B102/B138

New measurements ...

placed. The neutron distributions were measured and curves $\log \bar{N} = f(R)$ were plotted in the R-range 0 - 50 cm; $\log \bar{N}$ fell almost linearly with increasing R. The following results were obtained:

Moderator	τ_{measured}		τ_{calcul}
	$\delta = 1.8 \text{ mm}$	$\delta = 0.3 \text{ mm}$	
H ₂ O	(31.1±0.9) cm ²	(27.3±1.0) cm ²	(26.0±0.5) cm ² ✓
C ₁₅ H ₁₆	(45.9±1.6) cm ²	(44.9±1.8) cm ²	41.4 cm ²

For zero thickness of source, $\tau(1.46 \text{ eV}) = (27.3 \pm 0.9) \text{ cm}^2$. There are 1 figure, 1 table, and 4 references: 3 Soviet and 1 non-Soviet. The reference to the English-language publication reads as follows: D. Lombard, C. Blanchard, Nucl. Sci. and Engng., 7, 5, 448, 1960.

SUBMITTED: April 17, 1961

Card 2/2

3502
S/089/62/012/004/G10/014
B102/B104

26.2243
11.3950
AUTHORS:

Yurova, L. N., Stepanov, S. B., Okorokov, V. V., Kudryashov, Ye. I.

TITLE:

Some results of pulse measurements of the diffusion parameters of organic liquids

PERIODICAL:

Atomnaya energiya, v. 12, no. 4, 1962, 331-332

TEXT: A pulsed source was used to measure the decrease constant α of thermal neutrons in $C_{12}H_{10}$ (100-250°C) and $C_{15}H_{16}$ (18-250°C). The measurements were carried out in a cylindrical tank with a Cd piston. The moderator above the piston served as an additional fast-neutron source. The geometrical parameter Ω was varied by means of the piston.
 $\alpha = 1/T + D\Omega - (c_D - c_T)\Omega^2$; T - life-time with respect to absorption, D - diffusion coefficient, c_D - coefficient of diffusion cooling, c_T - transport-theoretical correction; from $D = \bar{\lambda}_{tr}\bar{v}_0/3$ which was obtained from the α -measurements, λ_{tr} was calculated for each temperature, when
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B102/B104

Some results of pulse ...

assuming the thermal neutron spectrum as being Maxwellian and the mean neutron velocity $v_0 = \sqrt{2kT/m}$ (T - absolute temperature of the medium). From the curves $\bar{\lambda}_{tr} = f(v_0)$, $\bar{\lambda}_{tr} \sim v_0^{0.33 \pm 0.03}$ (diphenyl) and

$\bar{\lambda}_{tr} \sim v^{1.58 \pm 0.12}$ (monoisopropyl diphenyl) was obtained. $\lambda_{tr}(v)$ also differs considerably for equally structured media. For diphenyl the neutron spectrum was most similar to the Maxwellian. Nelkin's method was used to determine c_D when assuming weak dependence of λ_{tr} on the neutron energy ($\bar{\lambda}_{tr} \sim E^\alpha$, α is a free parameter): $c_D = (\alpha + 1/2)^2 \sqrt{\pi} D^2 / v^0 M_2$, where M_2 is the second moment of neutron energy. The calculated values agree with the measured ones within the limits of error. There are 2 non-Soviet references. The reference to the English-language publication reads as follows: M. Nelkin. J. Nucl. Energy, 8, 48 (1958).

SUBMITTED: July 14, 1961

Card 2/2

38989

S/069/62/013/001/005/012
B102/B104

21.2110

AUTHORS: Kozlova, N. V., Yurova, L. N.

TITLE: Interaction of fast neutrons with uranium and thorium nuclei

PERIODICAL: Atomnaya energiya, v. 13, no. 1, 1962, 62-63

TEXT: A beam of reactor neutrons with energies between 3.5 and 13.5 Mev (in which the number of neutrons decreases linearly with increasing E_n) was used to study the interaction of neutrons with U and Th nuclei. The beam passed along a steel-lined channel (25 mm wide) and through a paraffin shield to strike the U or Th target, a ball of 23 mm diameter. The scattered neutrons were recorded by НИКФИ-К (NIKFI-K) nuclear emulsion plates of 100 μ thickness. The experiment was carried out in three stages: first the scattered neutrons were recorded, then the target was removed and the background measured, finally the target was replaced by an emulsion plate and the spectrum of the reactor neutrons was measured. The resulting spectra $\sigma(E_n)$ are stated numerically for the scattering angles 30, 45, 60, 90, 120, and 150° in the case of U and 30, 60, 90, 120 and 165° in that of

Card 1/2

Interaction of fast neutrons with...

S/089/62/013/001/005/012
B102/B104

Th. The differential cross sections were calculated for energy groups of $\Delta E_n = 1$ Mev and are shown in Fig. 3. The $\sigma(E_n)$ values correspond to elastic scattering; the admixture due to inelastic or fission processes is small. There are 3 figures and 1 table.

SUBMITTED: December 18, 1961

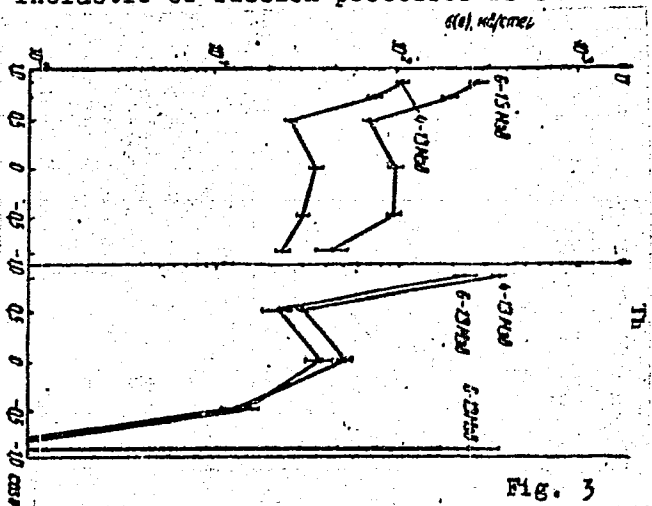


Fig. 3

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SKACHKOV, Sergey Vladimirovich; KONSTANTINOV, Leonard Vasil'yevich;
STROGANOVA, Rimma Petrovna; YUROVA, Lidiya Nikolayevna;
TOPORKOVA, Eleonora Petrovna; ~~VIRGO, I.G., Fed.;~~ ~~AKSEL'FOD,~~
I.Sh., tekhn. red.

[Problems in nuclear physics] Sbornik zadach po iadernoi fi-
zike. Izd.2., perer. Moskva, Fizmatgiz, 1963. 222 p.

(MIRA 16:8)

(Nuclear physics)

8/3064/63/000/004/0043/0046

ACCESSION NR: AT4018976

AUTHOR: Yurova, L. N.; Polyakov, A. A.; Ignatov, A. A.

TITLE: The age of fission neutrons in water

SOURCE: Moscow. Inzh.-fiz. institut. Nekotoryye voprosy* inzhenernoy fiziki (Some problems in engineering physics), no. 4, 1963, 43-46

TOPIC TAGS: nuclear reactor, neutron, fission neutron, neutron age, neutron absorption

ABSTRACT: The authors note that recent experiments to determine the age of neutrons in water indicate satisfactory agreement between the value of 26.0 ± 0.5 cm² given by Kh. Gol'dshteyn, P. Tsveyfel and D. Foster (Trudy* Vtoroy mezhdunarodnoy konferentsii po mirnomu ispol'zovaniyu atomnoy energii Ganeva, 1958). Izbr. dokl. inostrannykh uchenykh. T.2 - "Neytronnaya fizika". M., Atomizdat, 1959, str. 689) and the new values of 27.3 ± 1.0 and 27.3 ± 0.9 cm² given by L. N. Yurova, A. A. Polyakov, and A. A. Ignatov (Novyye izmereniya vozrasta neytronov v vode. "Atomnaya energiya", 10, no. 2, 1961) and by Lombard and Blanchard (Nucl. Sci. Engng, 7, 5, 1960), respectively. It is pointed out that the rated and experimental data converge, if the dependence of the spatial distribution of the

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ACCESSION NR: AT4018976

slowed neutrons on the effect of the absorption of these neutrons in the source is considered during the experiment. However, the last two papers mentioned contain no calculations confirming the existence of this dependence. In the present paper, an estimation of this effect is given on the basis of a concrete example. An infinite laminar source, with thickness d , is considered. The material of the source is U-235. The flow distribution from the right-hand side of the source ($x \geq 0$) is found. All the neutrons are broken down into three energy groups and the assumption is introduced that the laminar source absolutely does not absorb neutrons with energy greater than 1234 ev. An expression for the spatial distribution of the stream is derived, after which the neutron age with different source thicknesses can be easily computed. For a plain (flat) case, when

$$\tau = \frac{1}{2} \cdot \frac{\int_0^{\infty} x^2 \phi(x) dx}{\int_0^{\infty} \phi(x) dx}$$

the following are the results:

when $d = 0$
 when $d = 0.18$ cm

$\tau = 26.9$ cm²
 $\tau = 31.8$ cm²

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The authors note, in conclusion, that absorption of slowed neutrons in the source may have a substantial influence on the spatial distribution, with the latter, in turn, influencing the value of the neutron age in the medium. (fig. art. has: 12 formulas.)

ASSOCIATION: Inzh.-fiz. institut, Moscow (Engineering Physics Institute)

SUBMITTED: 00

DATE ACQ: 05 Mar 64

ENCL: 00

SUB CODE: NF

NO REF SOV: 002

OTHER: 004

Card 3/3

BR

8/3064/63/000/004/0059/0090

ACCESSION NR: AT4018978

AUTHOR: Yurova, L. N.; Kozlova, N. V.

TITLE: Non-elastic scattering of fast neutrons

SOURCE: Moscow. Inzh.-fiz. institut. Nekotory*ye voprosy* inzhenernoy fiziki (Some problems in engineering physics), no. 4, 1963, 59-90

TOPIC TAGS: neutron, neutron scattering, fast neutron, non-elastic scattering, magnesium target, nickel target, copper target, zirconium target, lead target, bismuth target

ABSTRACT: In the basic experiment, the results of which are described in this article, neutrons with an energy $E_0 = 2.5$ Mev were obtained as the result of the reaction $D(d, n) He^3$ with a mean energy of incident deuterons of approximately 170 kev. The tests were conducted on a plane almost perpendicular to the direction of the incident deuterons. The source spectrum consisted of the basic group of neutrons with energy of 2.5 ± 0.120 Mev and neutrons with energy less than 2.0 Mev, caused by the background. To record the neutrons, nuclear photoplates type 4 and Ya-1-2105 obtained from the N.-1. kinofotoinstitut (Scientific Research Institute for Motion Picture Photography) were used with an emulsion layer 200 and 103 microns thick, respectively. In terms of their chemical composition,

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these emulsions resemble the Ilford C-2 emulsion and in the 0.5 - 2.5 Mev energy region have the same decelerating ability. The geometry of the experiment is illustrated. Targets of the test materials were made in the form of truncated cones. The dimensions of these cones and other experimental data are tabulated. The neutron source, the target and the detector are so positioned as to record neutrons scattered at an angle of 100 - 150° (calculated mean scattering angle = 100°). In order to increase the scattering, two targets were used and a photo-plate detector was placed between them, with the emulsion-covered side of the plate coinciding with the direction of propagation of the neutrons. With this type of arrangement, the detector simultaneously records the scattered and the source neutrons. In order to record the background neutrons and the source neutrons, a second detector was positioned symmetrically with respect to the first. Thus, this geometrical arrangement made it possible, in a single experiment, to obtain the spectra and intensity of three different neutron streams (source neutrons, background neutrons and scattered neutrons) at the same time. The yield proton traces were measured on the plates in two directions: in the direction of the source neutron streams and in the direction of the background and scattered neutron streams. Measurements were made of the traces of all yield protons

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located in the emulsion at an angle of not more than 13° to the stream of incident neutrons. In this experiment, the plates measuring the source neutron spectrum also served as monitors. The different measurements were compared on the basis of the intensity of the neutrons of the basic group of the source neutron spectrum (energy region 2.0 - 2.6 Mev), with the same intensity taken in the calculation of the scatter sections. The spectra of neutrons with a minimum energy of 0.8 Mev were considered. In the spectrum of the scattered neutrons, a number of maxima can be discerned, the position of which was determined with an accuracy of ± 50 kev. To each maximum seen in the spectrum of the unelastically scattered neutrons there corresponds a definite excitation energy of the forming nucleus. The derived values for these energies are given in a long table, which incorporates the results of previous studies as well. The various excitation levels and energy values are discussed in detail for each of the test materials (magnesium, nickel, copper, zirconium, lead and bismuth). In a further section of the article, a formula is given for calculating the cross section of elastic and non-elastic scattering of neutrons with an energy of 2.5 Mev and the results of such computations are given in a table. Two control experiments to check the results of the basic experiment are described, and the measurement of the spectra and section of neutrons with an energy of 2.5 Mev non-elastically scattered by lead nuclei at angles of 0° - 40° and 100° is considered. The values

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derived in this work for the elastic scattering section are in good agreement with the results of other previously published work. This is also true of the energy values of the nuclear excitation levels. The cross section values for non-elastic neutron scattering with excitation of individual nuclear levels are, by and large, in satisfactory agreement with previous findings. All results confirm the presence of anisotropy in the angular distribution of non-elastically scattered neutrons with incident neutron energy on the order of 2.5 Mev. "The measurements of Ni were carried out by T. Ye. Petrova in 1954, those on Zr by G.V. Kotel'nikova in 1955." Orig. art. has: 5 tables and 11 figures.

ASSOCIATION: Inzh.-fiz. institut, Moscow (Engineering Physics Institute)

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DATE ACQ: 05Mar64

ENCL: 01

SUB CODE: NP

NO REF SOV: 014

OTHER: 024

Card 4/5