

Estimation of working ...

3/197/61/000/006/001/007
B104/B201

(4) for calculating the working reliability of untrained apparatus is unsuitable due to the difficult calculation process. In the author's opinion, the distribution of disturbances for all N parts of an apparatus may be written in the form $f(t) = k_1 f_1(t) + k_2 f_2(t) + k_3 f_3(t)$, where $f_1(t)$ denotes the distribution density of disturbances due to production flaws, $f_2(t)$ is the distribution density of disturbances due to breakdowns, and $f_3(t)$ is the distribution density of disturbances due to the aging of parts. For f_1 the author obtains

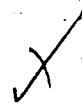
$$f_1(t) = \frac{1}{\sigma_0 \sqrt{2\pi}} e^{-\frac{(t+T_0)^2}{2\sigma_0^2}} \quad (8),$$

where T_0 is the expectation value of that time, after which all defective parts were exchanged, and σ_0^2 is the mean square deviation of T_0 . For these two quantities,

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Estimation of working...

$$T_0 = A \cdot \sigma_0,$$

$$\sigma_0 = e^{-\frac{A^2}{2}} e^{-\ln[f(o)\sqrt{2\pi}]} = \frac{e}{f(o)\sqrt{2\pi}} e^{-\frac{A^2}{2}} \quad (15) - (16)$$

is obtained, where

$$\ln[f(o) \cdot \sigma_0 \cdot \sqrt{2\pi}] = -\frac{T_0^2}{2\sigma_0^2} \quad (13)$$

is valid. Using earlier results, the author obtains

$$f(t) = \frac{k_1}{\sigma_0\sqrt{2\pi}} e^{-\frac{(t+T_0)^2}{2\sigma_0^2}} + k_2 \lambda e^{-\lambda t} + \frac{k_2}{\sigma_c\sqrt{2\pi}} e^{-\frac{(t-T_c)^2}{2\sigma_c^2}} \quad (19);$$

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Estimation of working ...

where k_i are normalization factors. Ultimately, $P(t) = 1 - \int_0^t f(t)dt$;
 $T_{\text{exp}} = \int_0^{\infty} tf(t)dt$ is given for the expectation value of the time of exact
 operation, and $\sigma^2 = \int_0^{\infty} (t - T_{\text{exp}})^2 f(t)dt$ for the mean square deviation. The
 working reliability of an apparatus consisting of elements connected in
 series only is finally examined taking the failure of elements into
 account.

$$f(t) = \sum_{i=1}^3 f_i(t) \prod_{j=1}^i \frac{P_j(t)}{P_j(0)} \quad (28)$$

is obtained and explicitly written down. Under the premise that a system
 of three elements connected in series offers an exact operation only when
 all three elements perform correctly, $P(t) = P_1(t)P_2(t)P_3(t)$ is valid, and

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Estimation of working ...

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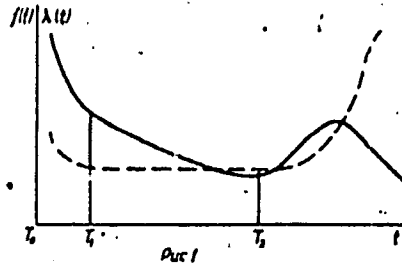
X

$$P(t) = e^{-\lambda \left[\frac{1}{2} + \Phi \left(\frac{T_c - t}{\sigma_c} \right) \right]} \left[1 - \frac{1}{s\sigma_b/2\pi} \int_0^t e^{-\frac{(t+T_b)^2}{2\sigma_b^2 dt}} \right] \quad (33)$$

is obtained. There are 2 figures and 5 Soviet-bloc references.

ASSOCIATION: Institut elektroniki i vychislitel'noy tekhniki AN Latv. SSR
(Institute of Electronics and Computer Engineering
AS Latvyskaya SSR)

SUBMITTED: December 8, 1960



Card 6/6

31623
S/197/61/000/012/001/003
B117/B108

6.4600 (1331)
13.2900 (1159)

AUTHOR:

Leont'yev, I.

TITLE:

Range of exponential law in determining reliability

PERIODICAL:

19 - 24

Akademiya nauk Latvyskoy SSR. Izvestiya, no. 12 (173), 1961,

TEXT: The author deals with the problem of quantitatively estimating the reliability of complex electronic systems. It is in general assumed that the reliability obeys an exponential law: $P(t) = \exp(-\lambda \cdot t)$. $P(t)$ denotes the reliability of the apparatus at the time t ; λ = intensity of the failures. This law may be applied when the failures are considered an ordinary current without after effect. Over the whole operating time of the apparatus, however, this law seems to be applicable only to a certain period. The distribution curves of failures show that during the time $T_0 - T_1$, λ remains constant for an apparatus submitted to previous artificial aging, i. e., the exponential law of the distribution of failures holds for $T_0 - T_1$. An important requirement for the quantitative

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ROVE

08/23/2000

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B117/B108

Range of exponential law...

determination of reliability characteristics is knowledge of the mean life of composite electronic systems. This is necessary for an optimum utilization of the individual elements and a reduction of failures during operation. The operating time of the apparatus, during which the exponential law holds, and the distribution of failure was determined under the following assumptions: (1) the apparatus is submitted to previous testing on faults of the manufacture, (2) breakdown of the apparatus through accidental defects is described by the exponential law of distribution, aging failures by the normal law, (3) accidental failures are independent of operating time (aging) and vice versa, (4) breakdowns of individual apparatus elements are independent. Conclusion: Between the times 0 and T_1 , reliability obeys an exponential law. T_1 is determined from the relation

$A - (t/B) = \exp\left(-\frac{(t - T_0)^2}{2\sigma_0^2}\right)$. T_0 = mean life of a system without accidental failures, σ_0 = root mean square deviation of T_0 ; λ = intensity of the failures of the apparatus; $A = (T_0/B) - (2/\sigma_0 \lambda \sqrt{2\pi})$; $B = \sigma_0^3 \cdot \lambda^2 \sqrt{2\pi}$. The mean life of a system consisting of n elements is determined from the

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35294
S/197/62/000/002/001/003
B104/B138

13.2929 (1159, 1161)
AUTHOR: Leont'yev, L.

TITLE: Synthesis of a reliable system from nonreliable elements
PERIODICAL: Akademiya nauk Latvyskoy SSR. Izvestiya, no. 2 (175), 1962, 51 - 57

TEXT: This study concerns the quantitative relationships between the perturbation probabilities of electronic apparatus and the number of reserve elements ensuring maximum safety of operation. On the assumption that short circuit and circuit break may occur simultaneously and independently, the provision of reserve elements by parallel, series, and combined connections is studied. In the first case,
 $P_m = a^m p_o^m (1 - q_o^m)$ is obtained for the probability of exact working.
 $a = p_s / p_o$, $p_s = 1 - q_s$, $p_o = 1 - q_o$, q_s is the probability of failure of a certain element by short circuit, q_o the probability of failure of the same element by a break, m is the number of parallel-connected elements.

APPROVED FOR RELEASE: 08/23/2000

Synthesis of a ...

S/197/62/000/002/001/003
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Reserve elements are only useful when obtaining $P_m > P_1$, where p_1 refers to an arbitrary element. $P_n = p_o^n \{ 1 - (1 - ap_o)^n \}$ is similarly obtained for n series-connected elements as a reserve. The required safety of operation is attained by combined connection of the elements. In this case,

$$\prod_{i=1}^n (1 - \prod_{j=1}^m q_{oij}) \{ 1 - \prod_{i=1}^n (1 - \prod_{j=1}^m p_{sij}) \} \geq P_{min}$$

of operation. There are 11 figures and 2 Soviet references. X

ASSOCIATION: Institut elektroniki i vychislitel'noy tekhniki AN Latv. SSR
(Institute of Electronics and Computer Engineering AS
Latvyskaya SSR)

SUBMITTED: July 6, 1961

lh932

S/690/62/003/000/008/009
D201/D308

13.2950

AUTHOR:

Leont'yev, L.P.

TITLE:

Experimental determination of the parameters of probability distribution law of duration of reliable operation of electronic equipment

SOURCE:

Akademiya nauk Latvviyskoy SSR. Institut elektroniki i vychislitel'noy tekhniki. Trudy, v. 3, 1962. Avtomatika i vychislitel'naya tekhnika, no. 3, 133-139

TEXT:

From the theoretical analysis of reliable operation of electronic equipment, taking into account the ageing of components, the author shows: 1) In order to determine the parameters of the probability distribution law experimentally it is not necessary to distinguish between the causes of faults. 2) Experimental data should be processed in such a manner as to obtain numerical values of dispersion and of mathematical expectation of the time of reliable operation. 3) When determining the value of the overall intensity of failures it is necessary to account for the time during which the

Card 1/2

LEONT'YEV, Leonid Pavlovich. Prinimali uchastiye: KHAYRULLIN, G.G.;
MUTSENEK, K.Ya., kand. tekhn.nauk, retsenzent; SAVEL'YEVA, Ye.,
red.; BCKMANIS, R., tekhn. red.

[Introduction to the theory of reliability of radioelectronic
apparatus] Vvedenie v teoriyu nadezhnosti radioelektronnoi ap-
paratury. Riga, Izd-vo AN Latviskoi SSR, 1963. 186 p.

(MIRA 16:10)

(Radio--Equipment and supplies)
(Electronic apparatus and appliances)

8/2690/63/005/006/0177/0189

ACCESSION NR: AT4038170

AUTHOR: Leont'yev, L. P.

TITLE: Distribution laws for gradual failures of radio parts

SOURCE: AN LatSSR. Institut elektroniki i vy*chislitel'noy tekhniki. Trudy*, v. 5, 1963. Avtomatika i vy*chislitel'naya tekhnika (Automation and computer engineering), no. 6, 177-189

TOPIC TAGS: quality control, industrial planning, probability theory, statistical distribution, distribution statistics

ABSTRACT: Probability analysis is used to solve the problem of aging of equipment in the case when the parameter describing the aging can vary in one direction only (increase or decrease). The problem is equivalent to determining the integral and differential probability distribution laws of the time of faultless operation from the known characteristic of the random function and the known distribution of the random quantity of the parameters at one or several values of the random function. Physically the integral distribution function represents the ratio of the number of times the equipment is out of

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ACCESSION NR: AT4038170

order. It is shown that if the random process represents an aggregate of realizations, each of which changes in one direction only, then the procedure for determining the parameters and the probability distribution itself can be greatly simplified. A procedure is developed for determining the faultless operation time distribution law and its parameters from results of short-duration (truncated) tests. The conditions under which the distribution law is normal are discussed. Orig. art. has: 3 figures and 37 formulas.

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

SUBMITTED: 00

DATE ACQ: 04Jun64

ENCL: 00

SUB CODE: IE, MA

NR REF SOV: 004

OTHER: 000

Card 2/2

L O4412-67 EWT(1)/EWT(m)/r/EWP(t)/ETI IJP(c) TG/JD

ACC NR: AT6019747

SOURCE CODE: UR/3192/65/000/011/0193/0198

AUTHOR: Leont'yev, L. P.

47
B+1

ORG: none

TITLE: Methods for the determination of approximate aging times and substitution times of elements

SOURCE: Akademiya nauk Latvyskoy SSR. Institut elektroniki i vychislitel'noy tekhniki, Avtomatika i vychislitel'naya tekhnika, no. 11, 1965, 193-198

TOPIC TAGS: circuit reliability, electronic equipment, nonmetal aging

ABSTRACT: The author describes a method for the determination of approximate aging times and substitution times of electronic elements. It is based on the minimization of the loss function. For certain simple types of distribution (e.g., gamma distribution) the theory yields reasonably simple equations for the determination of substitution times and aging times which can be used during reliability determination of electronic equipment. Orig. art. has: 24 formulas.

SUB CODE: 09, 14/ SUBM DATE: Nov64

Card 1/1

UDC: 621.37/39.019.3

L 00682-67 EWT(1)

ACC NR: AP6005306

SOURCE CODE: UR/0413/66/000/001/0040/0041

AUTHORS: Saprykin, V. S.; Baranov, Yu. V.; Belyakov, A. S.; Leont'yev, M. Ya.; Polyakov, V. V.; Potnevskiy, A. M.; Morozkin, B. S.

ORG: none

TITLE: A coaxial switch. ²⁵ Class 21, No. 177478

30
B

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 1, 1966, 40-41

TOPIC TAGS: electronic switch, coaxial cable

ABSTRACT: This Author Certificate presents a coaxial switch fitted with connectors mounted in the front part of the switch casing. These connectors are used for connecting the coaxial lines which are switched. The switch also contains an element connected with the switching mechanism and with the catches of the switch operating positions. The design increases the quality of the connecting contacts. An ungrounded section of a nonsymmetrical strip line is used as the switching element. This ungrounded section rests on the contact disks connected with the central pin of the connectors. The switching mechanism is fitted with a ring containing a spring-loaded rod which rests on one of the small balls of the catch. A bushing is mounted on the rod and is rigidly connected to the dielectric holder of the switching mechanism (see Fig. 1). A second spring-loaded small ball of the catch is mounted

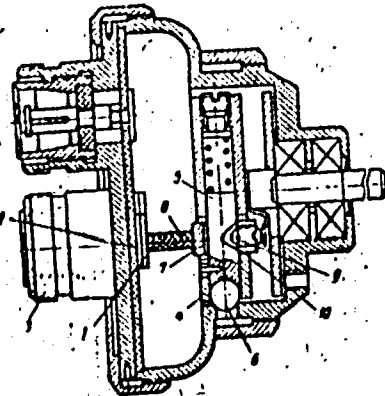
Card 1/2

UDC: 621.316.544.9

L 00682-67

ACC NR: AP6005306

Fig. 1. 1 - ungrounded section of a nonsymmetrical strip line; 2 - contact disks; 3 - connector; 4 - ring; 5 - spring-loaded rod; 6 - small ball of the catch; 7 - bushing; 8 - dielectric holder; 9 - spring-loaded small ball; 10 - triangular groove



in the radial channel of the ring. This ball enters in the triangular groove located on the lateral surface of the rod. Orig. art. has: 1 figure.

SUB CODE: 09/ SUBM DATE: 16Sep64

Card 2/2 fv

TEMEROV, B.F.; LEONT'YEV, M.D., starshiy elektromekhanik; KHULAP, N.M.,
starshiy inzhener.

"What should a signaling and communications district be like?"
Avtom., telem. i svyaz' 4 no. 12:17 D '60. (MIRA 14:1)

1. Nachal'nik Rostovskoy distantzii signalizatsii i svyazi Severo-
Kavkazskoy dorogi (for Temerov). 2. Zashchitenskaya distantziya
signalizatsii i svyazi Kazakhskoy dorogi (for Leont'yev). 3. Mu-
romskaya distantziya signalizatsii i svyazi Kazanskoy dorogi (for
Khulap).

(Railroads--Signaling)

(Railroads--Communication systems)

LEONT'YEV, M.N.; prinimali uchastiye: BAKINA, K.V.; KISELEVA, O.M.;
KRAVETS, Ye.A.; KARLOVA, S.A.; DUBNOVA, S.S.; SEMENYAKO, A.G.;
ZAMORINA, Z.T.; MILANINA, Ye.F.; KOZEL'SKAYA, O.P.; VASIL'KOVA,
Z.I.; ZOTOV, S.N.; YERMOLOV, A.I.; BEZLYUDNAYA, V.V.; NAZAROV,
B.A.; ASHIKMINA, V.M.; ASYAKINA, A.N.; TROITSKAYA, B.I.;
SKVORTSOV, A.V., red.; LESHAKOV, I.T., tekhn. red.

[The economy of Orlov Province; a statistical manual] Narodnoe
khoziaistvo Orlovskoi oblasti; statisticheskii sbornik. Orel,
Gosstatizdat, 1960. 281 p. (MIRA 14:5)

1. Orel(Province) Statisticheskoye upravleniye. 2. Zamestitel'
nachal'nika statisticheskogo upravleniya Orlovskoy oblasti
(for Leont'yev). 3. Statisticheskoye upravleniye Orlovskoy ob-
lasti (for all except Leshakov) 4. Nachal'nik statisticheskogo
upravleniya Orlovskoy oblasti (for Skvortsov)
(Orlov Province--Statistics)

LEONT'YEV, M.V., inzh.

Towerless system of water supply with automatic control of the
operation of the pumps of water lift no.2. Sbor. naukh. trud.
Dnepr. inzh.-stroi. inst. 18:43-56 '61 (MIRA 17:7)

LEONT'YEV, N.

In a progressive enterprise of Moldavia. Pozh.delo 7 no.6:26
Je '61. (MIRA 14:6)
(Moldavia--Factories--Fires and prevention)

LEONT'YEV, N., general-mayor

Communist Party and the Communist Youth League. Komm. Vooruzh. (MIRA 16:4)
Sil 3 no.1:39-44 Ja '63. (Communist youth league)
(Russia--Armed forces--Political activity)

LEONT'YEV, N., general-major

Creativity and formalism in party work, Komm. Vostok. 311 46 no.12:
30-37 Je '65. (MIRA 18:10)

BOGOMOLOV, N. A., Col. Med. Service

"The Problem of Organization of Pre-Flight Medical Examinations of the Flying Personnel", Voyennomeditsinskiy zhurnal, No. 3, 1955, p. 23.

The author suggests regular medical examinations instead of the customary asking the entire unit in formation: "Are there any complaints?"

So: Translation D525515

LEONTYEV, V. A.

(Nikolay Fedorovich)

LEONTYEV, V. A. -- Depiction of Coastlines of the USSR on Various Fine-Scale Geographic Maps." Sub 13 Jun 52, Moscow Inst. of Engineers of Geodesy, Aerial Photography and Cartography. (Dissertation for the Degree of Candidate in Technical Sciences).

30: Vechnaya Moskva, January-December 1951.

LEONT'YEV, N.P., kand.tekhn.nauk

Representation of seashores on general geographic maps.
Trudy TSNIIGAİK no.92:3-37 '53. (MIRA 10:12)
(Seashore) (Cartography)

LEONT'YEV, N. F.
USSR/ Geography - Book review

Card 1/1 Pub. 45 - 12/16

Authors : Iofa, L. E.; Ryazantsev, S. N.; and Leont'ev, N. F.

Title : Russian economic maps and atlases

Periodical : Izv. AN SSSR. ser. geog. 1, 86-90, Jan-Feb 1954

Abstract : A review is made of the book, "Russian Economical Maps and Atlases," by A. I. Preobrazhenskiy, published in 1953 by Geographical Publishing Office and containing 329 pages. The book recounts the development of economic maps from their beginning in the 17th century to the present time and finds that their compilation in accordance with scientific principles only began under the Soviet Government. The book does not sufficiently show the connection between the development of statistics and the compilation of economic maps. An outstanding feature of the book is a list of handmade and printed economic maps—1,243 of the latter.

Institution : ...

Submitted : ...

LEONT'YEV, N. F.

USSR/ Geography - Map making

Card 1/1 Pub. 45- 7/17

Authors : Leont'ev, N. F.

Title : The representation of rivers and river valleys on outline geomorphological

Periodical : Izv. AN SSSR. Ser. geog. 3. 62-72, May - Jun 1954

Abstract : The river systems are taken as a basis for showing the relative positions of other features on a map. It is explained that the density of a river system depends not only on the climate but also on the topography. An analysis is made of maps to show the percentages of rivers of different lengths. Differentiation is made between the older and newer valleys and a scheme is illustrated for showing the steepness of the valleys. Nine USSR references (1936-1952). Table; maps.

Institution: Geographic Institute of the Academy of Sciences of the USSR

Submitted:

LEONT'YEV, N.F.

USSR/ Geography - Book review

Card 1/1 Pub. 45 - 10/16

Authors : Grigor'yev, A. A., Academician; and Leont'yev, N. F.

Title : Atlas of the world

Periodical : Izv. AN SSSR. Ser. geog. 6, 88 -92, Nov - Dec 1954

Abstract : A review is made of the book, "Atlas of the World," edited by A. N. Baranov, published by the Publishing Office of the Central Directorate of Geodesy and Cartography of the Ministry of Internal Affairs, in Moscow, in 1954. The book contains 87 double-page maps, 44 x 57 cm and larger and 109 single-page layouts containing 263 maps with various scales. Some shortcomings are pointed out but generally the book is rated high.

Institution:

Submitted:

LEONT'YEV, N.F.

Concerning two articles devoted to the renovation of topographic
maps. Vop.geog. no.34:196-199 '54. (MLRA 7:12)
(Maps)

LEONT'YEV, H.F.

Interdepartmental conference on topographical maps. Izv.AN SSSR.
Ser.geog. no.3:90-93 My-Je '55. (MIRA 8:9)
(Cartography)

LEONT'YEV, N.P.

AVRAMOVA, A.A.; ALAMPIYEV, P.M.; BADIR'YAN, G.G.; BORODIN, I.A.; VASYUTIN,
V.F.; GUBER, A.A.; GURARI, Ye.L.; DANILOV, A.D.; DEREVIANKO, P.A.;
YEL'SUKOV, M.P.; KOLOSKOV, P.I.; LAPTEV, I.D.; LEONT'YEV, N.P.; PECHNI-
KOV, A.M.; PROKHOROV, A.I.; HUDENKO, N.A.; CHERDANTSEV, G.H.; YAKIMOV, A.T.

P.V. Pogorel'skii; Obituary. Izv. AN SSSR. Ser. geog. no. 3:94-95 My-Je
'55. (MLBA 8:9)

(Pogorel'skii, P.V., 1899-1955)

LEONT'YEV, N. F.

14-57-7-14269

Translation from: Referativnyy zhurnal, Geografiya, 1957, Nr 7,
p 11 (USSR)

AUTHOR: Leont'yev, N. F.

TITLE: Use of the Analogue Principle in Drawing a River
System on General Geographical Maps (Primeneniye
printsipa analogov pri izobrazhenii rechnoy seti
na obshchegeograficheskikh kartakh)

PERIODICAL: Sb. statey po kartogr., 1956, Vol 9, pp 29-34

ABSTRACT: Referring to the general geographical map of the
Rumanian People's Republic (which is a part of the
Soviet World Atlas), the author shows that the system
for selecting rivers, worked out by G. P. Davydov on
the basis of involving the density of the river net
of the USSR, can also be applied to those areas for
which such systems have not yet been devised.

Card 1/1

LEONP'YEV, N.F., kand.tekhn.nauk, otv.red.; VOLYNSKAYA, V.S., red.izd-va;
MARNOVICH, S.G., tekhn.red.

[Using topographic maps in geographical research] Ispol'zovanie
topograficheskikh kart pri geograficheskikh issledovaniakh.
Moskva, 1958. 118 p. (MIRA 12:2)

1. Akademiya nauk SSSR. Institut geografii.
(Maps, Topographic) (Geography)

AUTHOR: Leont'yev, N.F.

SOV-10-58-4-15/28

TITLE: Isobath Scale for the Cartography of Submarine Relief (Oshkalakh izobat dlya izobrazheniya podvodnogo rel'yefa)

PERIODICAL: Izvestiya Akademii nauk SSSR, Serya geograficheskaya, 1958, Nr 4, pp 99-106 (USSR)

ABSTRACT: The article deals with isobath scales used for the cartographical representation of submarine relief. The amount of information on geomorphological and geological features of submarine relief accumulated in recent years requires a careful consideration of methods for mapping this relief. The first steps in this direction were taken by I.P. Zarutskaya and V.P. Zenkovich who developed theoretical questions concerning this cartography. A scale with even profile intervals equal for the entire mapped territory is best, from the mathematical point of view. However, due to the great morphological difference in the surface relief, it is not used even for large-scale maps. Therefore, in practice, such scales are based on the preliminary investigation of the angles of slope of the particular surfaces in regard to the amplitudes of the peaks,

Card 1/2

Leont'yev

Isobath Scale for the Cartography of Submarine Relief SOV-10-58-4-15/28

the space occupied by various altitude stages and the investigation of the position and relation of the different types of reliefs. Therefore, for various relief types, different scales are worked out with an adequate close contour interval for each altitude zone. The article is accompanied by illustrations of methods of mapping submarine relief, which were taken from the Atlas Mira. There are 3 charts, 1 scale and 12 Soviet references.

1. Cartography--Theory

Card 2/2

SOV/10-58-6-12/21

AUTHOR: Leont'yev, N.F., Martynova, Z.I. and
Serebrianny, B.R.

TITLE: A Review of US Topographical Maps from a
Geographical Point of View (Geograficheskaya
otsenka topograficheskikh kart SSHA)

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geogra-
ficheskaya, 1958, Nr 6, p 113-119 (USSR)

ABSTRACT: The authors review the published topographical
maps of the US and find that these maps have
many defects. As these maps were produced by
different departments, the legends vary, and
many topographic elements are missing. Very
little attention is paid to the mapping of
the soil-vegetative cover. Hydrographical
data are also insufficiently reproduced. If
the soil relief is reproduced meticulously,
the river net is reproduced only schematically.
The authors find that aerial photography is

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SOV/10-58-6-12/21

A Review of US Topographical Maps from a Geographical Point
of View

not adequately utilized for the preparation of US maps. To a certain degree, this shortage of good maps can be explained by the insufficient preparation of necessary specialists in American schools. There are 14 references, 6 of which are Soviet and 8 American.

ASSOCIATION:

Institut geografii AN SSSR (The Institute of Geography of the AS USSR)

Card 2/2

SOV/10-58-6-17/21

AUTHOR: Leont'yev, N.F. and Serebryanny, L.R.
TITLE: ~~_____~~
The Study of Problems of Physical-Geographical
Mapping (K izucheniyu voprosov fiziko-geogra-
ficheskogo kartografirovaniya)
PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geogra-
ficheskaya, 1958, Nr 6, p 140-143 (USSR)
ABSTRACT: This is a review of the first volume of the
book by A.G. Isachenko, published under the
title "Physical-Geographical Mapping".

Card 1/1

SC7/10-59-5-16/25

AUTHOR: Leont'yev, N.F. and Chernozhukov, K.N.
TITLE: Geographical Atlases of Red China
PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geograficheskaya,
1959, Nr 5, pp 104-108 (USSR)
ABSTRACT: This is a review of geographical atlases published in
Red China. The last published World Atlas is based on
information furnished by various Soviet atlases.
ASSOCIATION: Institut geografii AN SSSR (Institute of Geography
of the AS USSR)

Card 1/1

3(2)

SOV/6-59-8-15/27

AUTHORS:

Leont'yev, N. F., Candidate of Technical Sciences, Martynova, Z. I.,
Mints, A. A., Candidate of Geographical Sciences

TITLE:

On the Atlas of Belorusskaya SSR (Ob Atlase Belorusskoy SSR)

PERIODICAL:

Geodeziya i kartografiya, 1959, Nr 8, pp 58-63 (USSR)

ABSTRACT:

The atlas of Belorusskaya SSR was published in 1958. It has 140 pages, and the edition comprises 15,000 copies. It contains 8 general and political administration maps, 56 general geographical maps, 8 physical maps, 48 economic maps, 9 ethnographical maps, and 9 historical maps. The climatic chart and the map of peat deposits are excellent. The forest map and geobotanical map are not entirely in agreement with one another. The fauna map is highly interesting. A scheme of the economic relations of the Republic with other areas of the USSR is also given. The characterization of the population is not exhaustive in the ethnographical maps. A particular advantage of the atlas lies in the fact that maps of individual oblast' of the Republic, namely physical, administrative, and economic maps of each of the oblast' are also inserted.

Card 1/1

There is 1 Soviet reference.

LEONT'YEV, N.F... kand.tekhn.nauk, otv.red.; SPRYGINA, L.I., red.isd-va;
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BORODIN, I.A.; LEONT'YEV, N.F.

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(Submarine topography)

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(Hydrographic surveying)

LEONT'YEV, N.F.

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LEONT'YEV, N.F.

A trip to Yugoslavia. Izv. AN SSSR. Ser. geog. no.6:144-146
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(Yugoslavia--Geography)
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LEONT'YEV, N.F.

Institute of Oceanography and Fisheries in Split, Yugoslavia.
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LEONT'YEV, N.F.

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1. Institut geografii AN SSSR.

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1. Institut geografii AN SSSR.

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KOSMACHEV, K.P.; Prinimali uchastkiye: KRONKEVICH, N.I.;
D'YAKONOV, F.V.; GERASIMOV, I.P., akademik, red.;
PREOBRAZHEVSKIY, V.S., red.; RIKHTER, G.D., red.; ABRAMOV, L.S.
red.; ARMAND, D.L., red.; GELLER, S.Yu., red.; ZONN, S.V., red.;
DZERDZEYEVSKIY, B.L., red.; KOMAR, I.V., red.; LAVRENKO, Ye.M.,
red.; LEONT'YEV, M.F., red.; LETUNOV, P.A., red.; L'VOVICH,
M.I., red.; MESHCHERYAKOV, Ya.A., red.; MINTS, A.A., red.;
MURZAYEV, E.M., red.; NASIMOVICH, A.A., red.; FOKSHISHEVSKIY,
V.V., red. p. POMUS, M.I., red.; ROZOV, N.N., red.; SOCHAVA, V.B.,
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[Yakutia] I Akutiia. Moskva, Nauka, 1965. 464 p. (MIRA 18:8)

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fii AN SSSR (for Korzhuyev, Vitvitskiy). 3. Yakutskiy filial
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oblastnoy pedagogicheskiy institut im. I.K.Krupskoy (for Naumov).
5. Pochvennyy muzey AN SSSR (for Zol'nikov). 6. Moskovskiy go-
sudarstvennyy universitet im. M.V.Lomonosova (for Karavayev).
7. Proizvodstvennyy nauchno-issledovatel'skiy institut stroitel'-
stva Gosstroya SSSR (for Kachurin). 8. Institut geografii Sibiri
i Dal'nego Vostoka Sibirskogo otdeleniya AN SSSR (for Kosmachev).

AVSYUK, G.A.; ARMAND, D.L.; VENDROV, S.L.; GELLER, S.Yu.; GERASIMOV, I.P.;
GRIGOR'YEV, A.A.; GRICHUK, V.P.; DZERDZEYEVSKIY, B.L.; KAMANIN, L.G.;
ISAKOV, Yu.A.; LEONT'YEV, N.F.; L'VOVICH, M.I.; MURZAYEV, E.M.;
NEYSHTADT, M.I.; RIKHTER, G.D.; SOBOLEV, L.N.

On Academician Vladimir Nikolaevich Sukachev's 85th birthday.
Izv. AN SSSR. Ser. geog. no.4:3-4 J1-Ag '65.

(MIRA 18:8)

L 42982-66 FVT(m)/FTE(1)/L EM/ER/JN/JML/JXT(CA)

ACC NR: AP6013232

SOURCE CODE: UR/0413/66/000/008/0022/0022

INVENTOR: Volkov, V. L.; Drozdov, A. K.; Kabyshev, A. S.; Leont'yev, N. G.;
Ustinov, V. K.; Frayman, R. S.; Tsirlin, A. M.

ORG: none

TITLE: Preparation of trichlorosilane. Class 12, No. 180594¹ [announced by the
Podol'sk Chemical Metallurgy Plant (Polol'skiy khimiko-metallurgicheskiy zavod)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 8, 1966, 22

TOPIC TAGS: silicon compound, hydrogen chloride, explosive forming

ABSTRACT: An Author Certificate has been issued for a method of obtaining a trichlorosilane by an interaction of silicon-containing crudes with hydrogen chloride. To prevent forming dangerously explosive polychlorosilanes,¹ coarse-crushed silicon-containing crude of 30-mm particle size is used with a continuous feed of hydrogen chloride. Conversion is completed by reciprocal circulation of the silicon-containing crudes in the reaction apparatus equipped with an arrangement for mixing and conveying solid crude. [Translation]

SUB CODE: 07,11 / SUBM DATE: 24Apr64/

Card 1/1 ns

58
B

Leont'yev, N. I.
USSR/Physics - Magnetic field

FD-1690

Card 1/1 Pub. 146-10/21

Author : Leont'yev, N. I.

Title : A measurer of magnetic fields that utilizes the magnetic resonance of protons

Periodical : Zhur. eksp. i teor. fiz. 28, 77-84, January 1955

Abstract : The author describes a measurer of magnetic fields that uses the effect of nuclear absorption of protons. The measurer possesses an automatic circuit making it possible to measure fields with an accuracy of 0.006% plus or minus. He indicates the areas of its application. He thanks Dr. V. Shyuttse. Five references, non-USSR.

Institution:

Submitted : February 11, 1954

SOV/120-59-1-25/50

AUTHORS: Leont'yev, N. I., Udovichenko, Yu. K.

TITLE: An Omegatron (Omegatron)

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 1, pp 101-105
(USSR)

ABSTRACT: This mass analyzer is designed for use at the lower mass numbers (up to about 45) and uses cyclotron resonance principles. The design is very similar to those of Refs 4 and 7. The basic dimensions and parameters are $r_0 = 0.8$ cm, $E_0 = 1$ V/cm, and $H = 3400$ oersted. The table shows that the resolution is not very high above mass number 22; an improvement can be had by reducing the applied voltage, but at the expense of a considerable loss of intensity. Figs 1 and 2 show the theoretical and actual systems used in the chamber (the accelerating voltage is provided by a standard oscillator and amplifier, and the high-frequency plates are 2 mm apart, and enclose 7 control plates. Fig 3 shows how the background current varies with pressure; Fig 4 shows how the resolving power and ion current vary with the control voltage (curves a and b respectively) for H_2^+ ;

Fig 5 shows the same quantities as functions of high-frequency voltage. Fig 6 shows the residual gas spectrum; Fig 7 shows

Card 1/2

SOV/120-59-1-25/50

An Omegatron

the line shapes given by neon isotopes, and Fig 8 shows the resolving power (curve a , from experiment; curve b from theory). In all cases the curves were taken with electron currents of 5-7 μ A (the best working range). The paper contains 8 figures, 1 table and 7 English references.

SUBMITTED: January 29, 1958.

Card 2/2

S/120/60/000/01/021/051
E032/E314

AUTHOR: Leont'yev, N.I.

TITLE: A Field Strength Meter for Low Magnetic Fields

PERIODICAL: Pribery i tekhnika eksperimenta, 1960, Nr 1,
pp 78 - 82 (USSR)

ABSTRACT: The meter is designed for the region 1 - 14 Oe and is based on the measurement of the cyclotron frequency of electrons in the measured magnetic field. The accuracy of the instrument is $\pm 0.05\%$. The instrument is shown diagrammatically in Figure 1. It consists of 4 plates and a central cathode. One pair of opposite plates is earthed and the other is connected to a high-frequency oscillator. The cathode is at a negative potential (1-3 V) relative to the plates. It has a by-pass condenser connected across it as shown in Figure 1, so that it is effectively AC-earthed. The probe is placed in the measured magnetic field H so that the latter is perpendicular to the high-frequency electric field. If the frequency of the oscillator f feeding the plates is equal to the cyclotron frequency f_0 of the electron in the measured field

Card 1/3



82894

S/120/60/000/02/025/052
E041/E421

24,6400

AUTHOR: Leont'yev, N.I.

TITLE: Resonance Instrument for Measuring Intensities of
Magnetic Fields

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, Nr 2,
pp 93-98 (USSR)

ABSTRACT: The principle used is the cyclotron resonance of
hydrogen ions in the field to be measured. The intensity
is measured from the difference in frequencies of H^+
and H_2^+ or H_2^+ and H_3^+ . The average value of a
field (even containing large non-uniformities) is
measured up to a value of 31500 oersted. The accuracy
is $\pm 0.05\%$ and refers to the absolute value. The method
normally employed exploits proton resonance but this
leads to undesirably high frequencies in strong fields.
The use of ions, however, has been objected to since the
cyclotron frequency given by Eq (1) is in practice
subject to a shift caused by the constant radial electric
field within the volume of accelerating ions. To
overcome this objection, the difference in frequencies
of two different ionic masses is measured. The corrected

Card 1/3

82894

S/120/60/000/02/025/052
EO41/E421

Resonance Instrument for Measuring Intensities of Magnetic Fields

form of Eq (1) is Eq (2) and eliminating $E(r)$ when two kinds of ion are present the magnetic field is given by Eq (6). For the particular cases of H^+ , H_2^+ and H_3^+ ions the field is given by Eq (7) and (8), in oersteds, when the frequency is in Mc/s. In addition to the cyclotron resonance, there is also a polarization resonance dependent on the ionic concentration. To avoid error from this source, the density is kept below $10^4/cm^3$. The arrangement of the electrodes in the instrument is Fig 1. An electron beam is directed through a 4-sided enclosure made up of deflecting plates connected to two high-frequency oscillators. The other two sides of the enclosure are accelerating electrodes. The magnetic field is parallel to the beam. The table on p 95 gives the optimum gas pressures for different ions and enclosure sizes. Measurements were usually made at 10^{-6} mm Hg with an enclosure 12 x 12 x 15 mm high. A block-diagram of the instrument is in Fig 3. The oscillators cover the range 0.665 to 24 Mc/s in four ranges. A twin-scan display is provided by beam-switching. ✓

Card 2/3

82894

S/120/60/000/02/025/052
EO41/E421

Resonance Instrument for Measuring Intensities of Magnetic Fields

Investigations have been made using a magnet whose field was more stable than 7×10^{-5} and could be varied over a wide range. Fig 4 and 5 show the variation in measurement error as a function of beam current and accelerating voltage respectively. Fig 6 is a similar curve for collector potential. From these graphs the optimum operating conditions can be deduced. A useful application of the device is for stabilizing a magnet field, in which case it may sense the intensity at the edge of the field, where it is non-uniform, and not reduce the useful field volume. The author thanks Yu.K.Udovichenko for assistance during development, S.V.Kuril'nikov, N.V.Aleksandrov and I.P.Koryakov for making the components and M.Z.Maksimov for appraising the results. There are 6 figures, 1 table and 11 references, 6 of which are Soviet and 5 English. ✓

SUBMITTED: February 25, 1959

Card 3/3

Leont'ev, N.I.

30774

5/13/10/000/03/029/055
E140/E563

AUTHORS: Leont'ev, N.I., Udovichenko, Yu.K. and Kuril'nikov, S.V.

TITLE: Omegatron with Panoramic Observation

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, No 3,
pp 100-103

ABSTRACT: A mass analyser for low masses using a CRT indicator is described. It employs a light-weight magnet (2.9 kg) with inhomogeneous field. The magnet is similar to one employed in a common magnetron type, omitting openings in the pole faces. The field intensity at the center of the gap is 2000 Oe., maximum inhomogeneity in the working region of the analyser 3.5%. The ion source and analyser is a chamber composed of thin sheets of tantalum previously described in*Ref 5. The working bands of the oscillator are 86 - 121, 112- 360 and 560 - 2000 kcs, corresponding to masses 36 - 25, 27 - 8, 5 - 2. The carrier is frequency-modulated up to 25%, with slow sawtooth waveform 2, 4, 7, 15 and 30 sec. The spectrum of neon 20 and 22 obtained by the instrument is given in Card 1/2 Fig 4. The peak at 18 is due to water vapour in the

*Leont'ev, N.I., Udovichenko, Yu.K., Pribory i tekhnika eksperimenta, 1959, No. 1, pp. 101-105

81994

S/120/60/000/03/029/055
E140/E563

Omegatron with Panoramic Observation

instrument. It is stated that the precision of the instrument is not less than 5% (precision of what not stated).

There are 4 figures and 6 references, 2 of which are Soviet and 4 English.

SUBMITTED: April 16, 1959

41

Card 2/2

S/120/60/000/005/023/051
E032/E514

AUTHORS: Leont'yev, N.I., Udovichenko, Yu.K. and Maksimov, M.Z.

TITLE: An Omegatron with a Nonuniform Magnetic Field

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, No.5, pp.97-99

TEXT: Brubacker and Perkins (Ref.3) have shown that an omegatron can work in a nonuniform magnetic field. The present paper investigates the resolving power of an omegatron in a non-uniform field which falls off along the radius in accordance with a parabolic law. This type of field is of great practical importance since it is obtained in a magnet with circular pole-pieces and plane-parallel gap. An expression is derived for the resolving power of an omegatron working in such a field and it is shown that there is no point in increasing the degree of non-uniformity above 3 or 4% since even though the resolving power increases, the intensity decreases very strongly. Moreover, experiments showed that the accuracy in the case of a highly nonuniform field is not very high. The present authors have used a permanent magnet having a weight of 2.9 kg and a gap of 29 mm. The degree of non-uniformity was 6.5%. A typical spectrum obtained is shown in

Card 1/2

S/120/60/000/005/004/051
E032/E314

AUTHORS: Leont'yev, N.I. and Udovichenko, Yu.K.
TITLE: Indication of the Resonance Absorption of Energy
in the Omegatron
PERIODICAL: Pribory i tekhnika eksperimenta, 1960. No. 5.
p. 100

TEXT: Usually, the appearance of resonance in the omegatron is determined from the position of the maximum of the ion current at the ion detector. A simpler method is to record the resonance from the position of the maximum of absorbed high-frequency energy. In this method the ion detector is unnecessary and the DC amplifier can be replaced by a low-frequency amplifier. The present authors have used this method with the omegatron described by them in Ref. 4. Experiments showed that the amplitude of the signal depends strongly on the gas under investigation. For different ion masses there are different optimum values for the pressure at which the signal amplitudes are a maximum. Thus, for H_1^+ the optimum pressure is 7×10^{-4} mm Hg, while for H_2^+ the pressure is

Card 1/2

✓

S/120/60/000/005/040/051

E073/E335

AUTHORS: Leont'yev, N.I. and Kuril'nikov, S.V. ✓

TITLE: Meter for Measuring the Magnetic Field by means of
a Magnetodielectric Probe ✓

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, No. 5,
p. 135

TEXT: For measuring magnetic fields of various configurations an instrument has been designed, the operation of which is based on the dependence of the permeability of a magnetodielectric on the magnetic field potential. It operates in the range of 100 - 8 000 Oe, the accuracy being 0.5%. Compared with an instrument described by M.P. Zel'dovich and S.M. Rubchinskiy (same journal, 1958, No. 1, p. 56) this instrument has a more simple circuit and a more simple design of the probes. The calibration oscillator operates at the two fixed frequencies, 760 kc/s and 4 Mc/s. Comparison of the frequencies of the measuring and calibration oscillators is by means of the zero beat method. The zero beat is determined by means of the setting indicator 6E5C. (6E5S). The magnetic-field potential is determined on the limb of the Vernier of a variable condenser
Card 1/3 ✓

S/120/60/000/005/040/051
E073/E335

Meter for Measuring the Magnetic Field by means of a
Magnetodielectric Probe

of the metering oscillator and the calibration curve. The instrument is calibrated by means of a nuclear instrument. The measuring device has two interchangeable probes, the difference being solely in the material of the core coil. The core of the coil of the first probe is machined from the "oxyfer" Φ -1000 (F-1000); the second was made of carbonyl iron ($\mu_0 = 3.7$). The first probe is suitable for the range of 100 - 370 Oe, the second for the range of 300 to 8 000 Oe. The core dimensions are: 3 mm dia.; 1.5 mm centre hole; 3 mm thick. Coils with 27 turns were wound toroidally on the cores. The toroidal shape of the windings was chosen since, in this case, the accuracy of orientation of the probe in the field does not greatly affect the results of the measurements. The coil of the probe is connected to the metering oscillator by a 1.5 m long cable. The probe is fitted on a perspex rod, 4.2 mm external diameter, which is rigidly fixed on the coaxial cable. The instrument indicates

Card 2/3

✓

S/120/60/000/005/040/051
E073/E335

Meter for Measuring the Magnetic Field by means of a
Magnetodielectric Probe

the average potential of the magnetic field which exists
in the volume of the probe coil.
There is 1 Soviet reference.

SUBMITTED: July 17, 1959



Card 3/3

LEONT'YEV, N.I.; UDOVICHENKO, Yu.K.

Additional focusing of resonance ions in an omegatron. Prib. 1
tekh. eksp. 6 no.2:129 Mr- Δ p '1. (MIRA 14:9)
(Mass spectrometry--Equipment and supplies)

S/120/62/000/003/021/048
E192/E382

9,3280

AUTHORS: Leont'yev, N.I. and Yakovlev, V.Ya.
TITLE: A pulse-generator for displaying probe characteristics
PERIODICAL: Pribory i tekhnika eksperimenta, no. 3, 1962,
95 - 96

TEXT: The generator is designed for the display of probe characteristics in electrode-less pulse discharges. The measurement system employed is illustrated in Fig. 1. A signal from the pulse generator (1) is applied to a double electrical probe through a separating transformer T_{p1} and a resistance r . The current in the probe circuit is primarily dependent on the internal resistance of the probe gap, provided this is much smaller than r . The voltage developed across r is therefore proportional to the probe current and this is applied to the oscillograph (see Fig. 1) through the transformer T_{p2} . The pulse applied to the probes has a linearly rising portion from -60 V to 0, a flat portion and a linearly rising portion from 0 to +60 V, the overall duration of the pulse being 60 μ s. The front edge of the

X

S/120/62/000/003/021/048
E192/E382

A pulse-generator for

pulse corresponds to the triggering of the time base of the oscilloscope. Also 15 μ s after termination of the pulse, when the investigated discharge is extinguished, the time base is triggered again and a horizontal line corresponding to 0 probe current is displayed. The pulse-generator is based on 2 vacuum tubes and 9 thyratrons. The 2 vacuum tubes are double triodes and are used as anode-grid limiters. An RC phase-shift network is inserted between the limiter so that its output pulses can be shifted with respect to each other by 10 - 50 μ s. The pulse from the first limiter is applied to the grid of the first thyatron which produces a fast pulse at its anode. This pulse ignites the next thyatron and actuates the supply of the investigated discharge. The pulse of the second thyatron has a duration of about 10 μ s and an amplitude of 140 V and this is applied to the first grid of the third thyatron T_3 ; the second grid of T_3 is also normally at a negative potential so that T_3 becomes ignited only when it receives a pulse from the second limiter.

Card 2/4

S/120/62/000/003/021/048
E192/E382

A pulse-generator for

T_5 produces a pulse for triggering the time base of the oscillograph and for igniting the pulsing thyatron T_4 . A special circuit based on 2 thyratrons, T_6 and T_7 , is used for the secondary triggering of the time base. T_6 of this circuit is triggered simultaneously with T_4 . The cathode circuit of T_4 produces in the negative portion of the probe voltage; it also triggers the next thyatron T_5 after a delay of 15 μ s, which produces the positive portion of the voltage. These voltages are combined in the secondary winding of a double transformer connected in the cathode circuits of T_4 and T_5 . A detailed circuit diagram of the pulse-generator is given. The authors thank N.V. Aleksandrov for taking part in the construction of the generator. There are 5 figures. ✓

Card 3/4

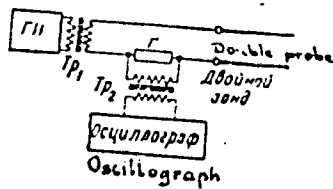
A pulse-generator for

S/120/62/000/003/021/048
E192/E382

ASSOCIATION: Fiziko-tekhnicheskii institut AN GruzSSR
(Physicotechnical Institute of the AS Georgian SSR)

SUBMITTED: June 27, 1961

Fig. 1:



Card 4/4

S/057/62/032/002/007/022
B104/B102

AUTHORS: Demirkhanov, R. A., Leont'yev, N. I., and Kosyy, I. A.
TITLE: Concentration measurement of charged particles in a strong high-frequency pulse discharge in a magnetic traveling field
PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 32, no. 2, 1962. 180-184

TEXT: The authors compare the results of measurements of the charged particle concentration made with strong h-f pulse discharges using data obtained by the microwave method. The measurements were made with a cylindrical quartz gas discharge chamber (800 mm long, diameter: 36 mm). The plasma was excited by h-f electromagnetic traveling waves. The particle concentration was determined with the aid of a double Mo-wire (1 mm in diameter) probe. The voltage drop due to the probe current at a resistor is fed into an ЭНО-1 (EN0-1) oscilloscope (Fig. 1). The results of the measurements made at $1 \cdot 10^{-1}$ and $6 \cdot 10^{-2}$ mm Hg are in good agreement with those obtained by the microwave method. Measurements of the distribution of the electric field made it possible to determine the surplus charge of the ions caused by the different rates of diffusion of ions and
Card 1/3

S/057/62/032/002/007/022
B:04/B102

Concentration measurement of ...

electrons to the chamber wall. The concentration of the surplus ions is low compared with that of the ions. With $r = 0.65$ cm
 n_i surplus = $3.6 \cdot 10^8$ cm⁻³, $n_+ = 4.5 \cdot 10^{11}$ cm⁻³. The authors thank T. M. Filatov for his assistance in the probe measurements, N. I. Malykh for microwave measurements, and I. R. Yampol'skiy for discussion of the probe measuring method. There are 4 figures, 1 table, and 7 references: 5 Soviet and 2 non-Soviet. The two references to English-language publications read as follows: B. Wharton, a. M. S. Donald, J. Appl. Phys. 31, 2, 428, 1960; D. Bohm. The characteristics of the electrical discharge in magnetic fields, Ed. by A. Guthrie a. R. K. Wakerling, New York. Toronto-London, 1949.

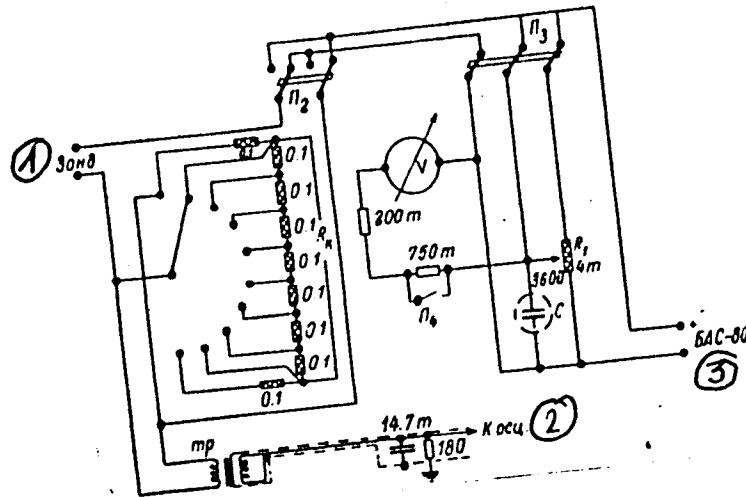
SUBMITTED: November 24, 1960 (initially), April 3, 1961 (after revision)

Fig. 1: probe measuring circuit;
Legend: (1) probe; (2) to the oscilloscope; (3) battery

S/057/62/032/002/007/022
B104/B102

Concentration measurement of ...

Fig. 1



Card 3/3

9.4930 (1532)
24.6714
AUTHORS:

34632
S/056/62/042/002/004/055
B102/B138
Demirkhanov, R. A., Leont'yev, N. I., Kosykh, I. A., Filatova, T. M.

TITLE: Plasma instability in a toroidal discharge excited by a traveling electromagnetic field

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki v. 12 no. 2, 1962, 338 - 343

TEXT: The oscillation frequency of a plasma produced by traveling electromagnetic H-waves in a toroidal glass chamber was studied experimentally in dependence on the discharge parameters. The traveling field was produced by a delay-line spiral with $R_{max} = 16.5$ ohms fed by 900 kc pulses of 250 kw, duration $\tau = 4$ msec. H_{max} at the inner chamber walls was 150 oe. The phase velocity of the wave along the delay line was $5.6 \cdot 10^7$ cm/sec. The toroidal chamber was 180 mm in diameter, tube diameter 40 mm, initial pressure 10^{-6} mm Hg. The pressure during operation $4 \cdot 10^{-3}$ - 10^{-4} mm Hg. In Card (1/3)

APPROVED FOR RELEASE: 08/23/2000

CIA-RDP86-00513R0009

Plasma instability ...

spectroscopic measurements of a hydrogen discharge only the Balmer series was found. The radial distributions of the field components were measured with and without plasma. Some of the experiments were made in a uniform traveling field with closed delay-line spiral. At two points where the phase shift was 90° and 8 waves were traveling along the line, with both generators operated at 1 Mw and 1.5 Mc H_{max} at the inner wall was 100 oe without and ~550 oe with plasma. The charged particle concentration was measured with two electric probes, azimuthal currents with a Rogowski band and discharge brightness with a photocell. An (SFR-1) camera was used for the high speed photography. The instabilities observed were oscillations in charged particle concentration, azimuthal current, brightness and h-f magnetic field amplitude. The oscillations were non-sinusoidal but with an error of 15% so that, with some approximation the envelope of the probe signals could be expanded into a Fourier series. Their range of operations, pressure, interactions

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B102/B138

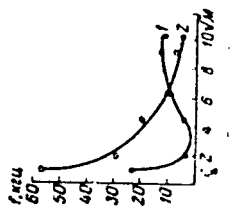
Plasma instability ...

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same order of magnitude as that of the ionic "sound", observed by A. V. Nedospasov (Paper No 217, Salzburg Conference on Plasma Physics and Controlled Thermonuclear Reactions, 1961). S. S. Gernayeva, E. M. Barkhudarov are thanked for help, S. N. Lozovskiy and I. R. Yampol'skiy for discussions. V. P. Velikhov (Preprint IAE AN SSSR, 1960) and G. V. Gordeyev (ZhETF, 27, 19, 1954) are mentioned. There are 7 figures, 2 tables, and 7 references: 6 Soviet and 1 non-Soviet. The reference to the English-language publication reads as follows: P. C. Thonemann et al. Nature, 169, 34, 1952.

SUBMITTED: July 6, 1961

Fig. 7. Plasma oscillation frequency (kc) as a function of M atomic weight of the gas. (1) experimental curve, (2) magnetoacoustic frequency.



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27596-65 EWT(1)/EPA(sp)-2/EPA(w)-2/EEC(t)/T/EWA(m)-2 pz-6/po-4/pab-10/pi-4
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ACCESSION NR: AF5003234

S/0057/65/035/001/0043/0046

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43B

AUTHOR: Demirkhanov, R.A. / Kossyy, I.A. / Lgont'yev, N.I. / Lozovskiy, S.N. / Udovichenko, Yu.K. / Filatova, T.M.

TITLE: Interaction of a traveling electromagnetic wave with a plasma 21

SOURCE: Zhurnal tekhnicheskoy fiziki, v.35, no.1, 1965, 43-46

TOPIC TAGS: plasma, plasma confinement, plasma heating, plasma wave absorption, traveling wave

ABSTRACT: An experimental investigation was undertaken to test the possibility of confining a plasma by means of a traveling electromagnetic wave as proposed by S.M. Osovets (Fizika plazmy i problemy upravlyayemykh termoyadernykh reaktsiy [Plasma physics and problems of controlled thermonuclear reactions] Vol.4, p.3, Izd. AN SSSR, 1958). A toroidal pulsed machine was employed, similar to that described elsewhere by R.A. Demirkhanov et al. (ZhTF 32:248, 1962). Hydrogen plasma was investigated at a pressure of 0.06 mm Hg. One megacycle/sec traveling waves were produced with a delay line terminated in its surge impedance. The phase velocity was 5.6×10^7 cm/sec

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ACCESSION NR: AP5003234

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and the maximum amplitude of the magnetic field was 230 Oe. The electron density and temperature and the longitudinal component of the high frequency magnetic field were measured at various distances from the axis to the discharge tube by means of probes. The electron temperature was approximately constant at 60 000 °K and the electron density was of the order of 10^{14} cm⁻³. From the measured data the gradients of the plasma pressure and the magnetic pressure were calculated. The plasma pressure gradient everywhere exceeded the magnetic; confinement of the plasma was accordingly not achieved. Some calculations are presented concerning the behavior of a plasma in a high frequency magnetic field. To achieve confinement it is not sufficient simply to increase the magnetic field strength, for the high frequency field tends to heat the plasma. It is concluded that confinement can be achieved only in an incompletely ionized plasma with a large electron density, in which energy can be transferred from the electrons to the walls of the chamber via the ions and the neutral particles. "The authors express their gratitude to S.V. Kuril'nikov and N.V. Aleksandrov for constructing the power supply for the high-frequency discharge." Orig.art.has: 13 formulas and 2 figures.

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L 27596-65

ACCESSION NR: AP5003234

ASSOCIATION: none

SUBMITTED: 18Feb64

NR REF SOV: 006

ENCL: 00

SUB CODE: ME

OTHER: 001

Card 3/3

LEONT'YEV, N.K.

SHUSHKOV, A.M., inzhener; LEONT'YEV, N.K.; RUSAKOV, N.G.

Sum of the angles of closed polygons plotted through several intersecting lines. [Trudy] VNIMI no.28:83-88 '54. (MLRA 8:2)
(Mine surveying)

LEONT'YEV, N.K., starshiy nauchnyy sotrudnik.

XI. Contribution to the problem of trends in the study of rock displacement under conditions prevailing in the Donets Basin.
Ugol' 29 no.3:24-26 Mr '54. (MLRA 7:3)

1. Donetskiy filial Vsesoyuznogo nauchno-issledovatel'skogo marksheyderskogo instituta.
(Donets Basin--Earth movements) (Earth movements--Donets Basin)

Leont'yev, N. L.

Doc Agricult Sci

Dissertation: "Elastic Deformations in Wood Under Mechanical Actions and Methods
of Determining Them."

13 June 69

Moscow Forestry Engineering Inst.

**SO Vecheryaya Moskva
Sum 71**

LEONT'YEV, N. L.

PHASE I TREASURE ISLAND BIBLIOGRAPHICAL REPORT

AID 311 - I

BOOK

Call No.: AF612018

Author: LEONT'YEV, N. L., Doctor of Agricultural Sciences

Full Title: ELASTIC DEFORMATIONS OF WOOD

Transliterated Title: Uprugiye deformatsii drevesiny

Publishing Data

Originating Agency: Central Scientific Research Institute for Machine Woodworking (TsNIIMOD) of the Ministry of the Forest Industry of the USSR

Publishing House: State Publishing House of Wood and Paper Literature

Date: 1952

No. pp.: 120

No. of copies: 3,000

Editorial Staff

Editor: None

Tech. Ed.: None

Editor-in-Chief: None

Appraiser: None

Others: Gratitude for valuable assistance expressed to the following workers of the wood cellulose laboratory of the Ministry of the Forest Industry: Ivanov, A. I., Yengovatov, V. K., Ivanov, V. A., Rzhanov, M. G.

Text Data

Coverage: This is a study, in the form of a textbook, written to cover the growing need of the industry for technical literature due to the large development of Russian Forestry.

Uprugiye deformatsii drevesiny

AID 311 - I

PAGE

Ch. 7. Study of the Deformation of Wood under
Longitudinal Stresses

89-102

8. Elastic Characteristics of Basic Kinds of
Wood of the USSR

103-117

Bibliography

117-118

Purpose: Not stated

Facilities: None

No. of Russian and Slavic References: 5 before 1939, and 20 after
that date

Available: A.I.D., Library of Congress.

3/3

1. LEONT'YEV, N. L. FROLOVA, N.G.
2. USSR (600)
3. Wood Pulp Industry
4. Chromatic-volumetric method of determining sodium sulfate in the caustic.
Bum.prom.27 No. 6 - 1952.

9. Monthly List of Russian Acquisitions, Library of Congress, February, 1953. Unclassified.

LEONT'YEV, N.L. [author]; OTLIVANCHIK, A.N. [reviewer].

Manual for the statistical treatment of observation results ("Statistical treatment of observation results." N.L. Leont'ev. Reviewed by A.N. Otlivanchik). Der. i lesokhim. prom. 2 no.8:31 Ag '53. (MLRA 6:7)
(Statistics) (Leont'ev, N.L.)

LEONT'YEV, N. L.

124-11-13603

Translation from: Referativnyy Zhurnal, Mekhanika, 1957, № 11, p 177 (USSR)

AUTHOR: Leont'yev N. L.

TITLE: Experimental Investigations on the Resistance of Wood to Prolonged Loads (on TS. N. I. I. M. O. D. materials) (Eksperimental'nye issledovaniya soprotivleniya drevesiny dlitel'nomu deystviyu nagruzki (p. materialam TS. N. I. I. M. O. D.))

PERIODICAL: V sb.: Issledovaniya prochnosti i deformativnosti drevesiny, Moscow, Gos. izd-vo lit. po str-vu i arkhitekture, 1956, pp 118-122

ABSTRACT: The paper presents the results of tests on flawless small samples of pine, spruce, and ash wood made with prolonged application of constant loads. Empirical "time-deformation" curves are shown for a small number of spruce and pine samples, and curves of resistance to prolonged loads are shown for spruce and ash samples, extended over a loading period of from 100 to 600 days. It is established that the orientation coefficient of the prolonged resistance to compression along the fibers of ash wood is less than 0.7, and in the other cases less than 0.6. Relative to the determination of the crushing strength in compression and cleaving along the fibers, the Author recommends

Card 1/2

124-11-13603

Experimental Investigations on the Resistance of Wood to Prolonged Loads
(Continued)

that two samples be taken that are adjacent to the main one along the length of the trunk, whereas for the determination of the limiting strength in tension along the fibers and static bending another two samples be taken that are adjacent to the main one along the circular perimeter of the cross-section of the trunk.

(V. N. Antipov)

Card 2/2

LEONT'YEV, N.L.; KRECHETOV, I.V.; TSAREV, B.S.; SUKHOVA, A.V.

Effect of high temperature conditions of drying on the physical
and mechanical properties of wood. Der. prom. 5 no.10:3-5 0 '56.
(MLRA 9:11)

1. Tsentral'nyy nauchno-issledovatel'skiy institut mekhanicheskoy
obrabotki drevesiny.
(Lumber--Drying)

~~1. ONTILYKHIN, Nikifor Leon'tyevich; PERELYGIN, L.M., redaktor; SARMATSKAYA,~~
G.I., redaktor izdatel'stva; BACHURINA, A.M., tekhnicheskij redaktor

[Long term stretch of wood] Dlitel'noe soprotivlenie drevesiny.
Moskva, Goslesbunizdat, 1957. 130 p. (MLRA 10:10)
(Wood)

LEONT'YEV, N.L.; KRECHETOV, I.V.; TSAREV, B.S.; BOLDENKOV, R.P.

Effect of high temperature drying of pine wood on its physical
and mechanical properties. Der.prom. 6 no.6:3-6 Je '57.
(MLRA 10:8)

1. TSentral'nyy nauchno-issledovatel'skiy institut mekhanicheskoy
obrabotki drevesiny.

(Lumber--Drying)

(Wood--Testing)

LEONT'YEV, N.L. doktor sel'skokhozyaystvennykh nauk

Strength of green wood. Der. prom. 8 no.10:9 0 '59.

(MIRA 12:12)

(Wood--Moisture)

LEONT'YEV, N.L.

Training of technicians for the woodpulp and paper industry.
Bum.prom. 34 no.7:21-22 J1 '59. (MIRA 12:10)

1. Direktor Serpukhovskoy bumazhnoy fabriki.
(Woodpulp industry) (Paper industry)

PHASE I BOOK EXPLOITATION

SOV/4419

Spravochnik po mashinostroitel'nyim materialam, tom 4: Nemetallicheskiye materialy (Handbook on Machine-Building Materials, Vol 4: Nonmetallic Materials) Moscow, Mashgiz, 1960. 723 p. Errata slip inserted. 26,000 copies printed.

Ed.: G.I. Pogodin-Alekseyev, Doctor of Technical Sciences, Professor; Ed. of the vol.: A.N. Levin, Doctor of Technical Sciences, Professor; Ed. of Publishing House: V.I. Rybakova, Engineer; Tech. Ed.: T.F. Sokolova; Managing Ed. for Information Literature (Mashgiz): I.M. Monastyrskiy, Engineer.

PURPOSE: This book is intended for machine-building and construction engineers, architects, and other persons interested in the properties of building materials.

COVERAGE: This is the fourth of a 4-volume Handbook on Machine-Building Materials. Volume 4 discusses nonmetallic materials suitable for use in machine building and in other constructional applications. Textile, wood, plastic, ceramic, rubber, and glass materials and laminates of these materials are reviewed and data on their physical and mechanical properties are listed. No personalities are mentioned. References follow individual chapters.

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Handbook on Machine-Building Materials (Cont.)
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LEONT'YEV, N.L., doktor sel'skokhoz, nauk

Wood strength at various moisture contents. Der.prom. 9 no.10:15
0 '60.

(Wood--Moisture)

(MIRA 13:10)

LEONT'YEV, N. L.

Determining the strength of wood. Standartizatsia 24 no.9:34-
36 S '60.

(Wood--Testing)

(MIRA 13:9)

LEONT'YEV, N.L.

Determining volumetric weight of wood with variable moisture content. Standartizatsiia 25 no.6:43-45 Je '61.

(MIRA 14:6)

(Wood--Tables and ready--Reckoners)

LEONT'YEV, Nikifor Leont'yevich, prof., doktor sel'khoz. nauk;
SAVKOV, Ye.I., red.; LEBEDEVA, I., red. izd-va; PARAKHINA,
N.L., tekhn. red.

[Technique of statistical calculations] Tekhnika statisticheskikh
vychislenii. Moskva, Goslesbumizdat, 1961. 231 p.

(Mathematical statistics)

(MIRA 15:3)