Experimental investigation ....

in Fig. 1. The equivalent quadripole of a cell separated by sections AA' and BB' is also shown in the figure. The matrix of this system is (Ref. 4 - A. Bloch, F.J. Fisher and G.J. Hunt - Proc. IEE, 100, 64, 1953):

$$|A| = \begin{vmatrix} \cos(k\ell) + \frac{Z}{Z'}\cos(k\ell') - \omega C_T Z \sin(k\ell') & jZ\sin(k\ell) \\ \frac{j\sin(k\ell)}{Z} + j\omega C_T \cos(k\ell) - \frac{\cos(k\ell')}{jZ'\sin(k\ell')} & \cos(k\ell) \end{vmatrix} \quad (1.1)$$

where ω is the operating frequency;

$k = \omega\sqrt{\varepsilon\mu}$;

ℓ is the length of the line sections;

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$1/Z' = 1/Z_1' + 1/Z_2'$,

$Z_1' = \sqrt{\varepsilon\mu}/C_1'$,

$Z_2' = \sqrt{\varepsilon\mu}/C_2'$,

$Z = \sqrt{\varepsilon\mu}/C_0$ - are wave impedances of the lines formed by a stub and the lower base surface, a stub and upper base and by two neighbouring stubs respectively.

C_1', C_2' and C_0 are the corresponding capacitances per unit length;

C_T is the capacity between the end of a stub and the base of the opposite comb structure.

The scattering equation for a chain consisting of such quadripoles is given by:

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$$\cos \varphi_0 = \frac{A_{11} + A_{22}}{2} = \cos(k\ell)\left[1 + \frac{Z}{2Z_1} \cdot \frac{Z}{2Z_2} \omega C_T Z \operatorname{tg}(k\ell)\right] \quad (1.2)$$

where φ_0 is the phase of the wave. The scattering characteristics were taken experimentally by using two demountable interdigital structures, consisting of similar elements. The system was designed for operation at decimetre waves and had the following dimensions: period of the system D = 10 mm; diameter of a stub s = 7 mm; length of a stub ℓ = 90 mm; the gap between the stubs h = 2 mm; the distance between the base and the stub g could be varied from 0 to 15 mm. The measured results are illustrated in Fig. 3 (small circles) together with the calculated curves (solid lines). Single discontinuities in the system were produced by using special cells in which the position of a stub could be varied. The theoretical value of the modulus of the reflection coefficient due to various types of discontinuity can be found from formulae given in Ref. 1.

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Experimentally, the following types of discontinuity were investigated: displacement of the stub in the transverse direction (g changes by Δg); changes in the gap between the stubs; displacement of the stub in the plane of the structure and changes of the length ℓ of the stub. The value of the reflection coefficient $|\Gamma|$ as a function of $\Delta g/D$ is illustrated in Fig. 4, together with the calculated curves. Comparison of the calculated and theoretical results shows that if the reflection coefficient produced by the discontinuities is small, this value can be found as a superposition of the reflection coefficients due to individual discontinuities. The equivalent circuit of a metal-plate(comb-type) structure is in the form of a chain of Γ-type quadripoles whose matrices are in the form:

$$|A| = \begin{vmatrix} 1 & jZ\,tg(k\ell) \\ -j\omega C & 1 - \omega CZ\,tg(k\ell) \end{vmatrix} \qquad (2.1)$$

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where $k = \omega \sqrt{\varepsilon\mu}$,

Z is the wave impedance of the strip line formed by the neighbouring plates and
l is the height of the plates
C is the capacitance between the end of a plate and the cover.

The phase changes of the wave over a cell are described by:

$$\cos \varphi_0 = 1 - \omega CZ \operatorname{tg}(kl)/2 \qquad (2.2) .$$

The experimental system investigated consisted of two metal surfaces, one of which carried a number of equidistantly-spaced metal slabs (parallelopipeds) having dimensions d = 7.2 cm, s = 1.7 cm and l = 9.0 cm. The upper surface of the system was parallel to the lower surface and its distance from the metal slabs could be varied. The non-homogeneities in the system were produced by filling the gaps with metal plates, inserting pieces of metal under individual slabs or changing the spacing between the slabs. The results of the experiments are illustrated in

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Experimental investigation ....

three figures. In particular, Fig. 10 shows the value of the reflection coefficient as a function of the change of the distance between two neighbouring slabs. The straight lines of Fig. 10 were based on calculations while the circles show the experimental points. From these experiments, it is seen that for small inhomogeneities the agreement between experiment and approximate calculated results is satisfactory. On the other hand, for increasing $\Delta l/l$, $\Delta h/h$ and $\Delta b/b$, considerable deviations from the theoretical straight lines are observed. The next system to be investigated consisted of a number of rectangular resonators, coupled by means of narrow slots; the system is illustrated in Fig. 12. The scattering equation of such a system is in the form

$$\cos \varphi_0 = 1 - BX/2$$

where B and X represent the series impedance and the shunting admittance of a quadripole which is equivalent to the rectangular resonator. The formula was checked experimentally by employing equipment consisting of a rectangular channel having

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Experimental investigation ....

a depth of 68 mm and width of 72 mm. Transverse slots having a depth of 3 mm and width of 1 mm and spaced at 3 mm were cut at the walls and the bottom of the channel. Metal plates with small slots (irises) were inserted into these slots. The channel was then covered with a plate which had corresponding slots and small apertures for measuring the field in the resonators. The inhomogeneities in the system were produced by changing the parameters of a cell, i.e. its dimensions (d and L) and its position (a_1). The results of the experiments illustrating the change of the natural frequency of the system are illustrated in two figures. In particular Fig. 16 shows the frequency deviation as a function of $\Delta a/a$ and $\Delta b/b$. The straight lines in the figure were obtained theoretically. From the above results, it is concluded that the periodic delay structures can be represented by the idealised quadripoles provided the non-homogeneities are not excessive. In most practical cases, the results of experiment and theory are in satisfactory quantitative agreement.

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30764
S/141/61/004/003/015/020
E192/E382

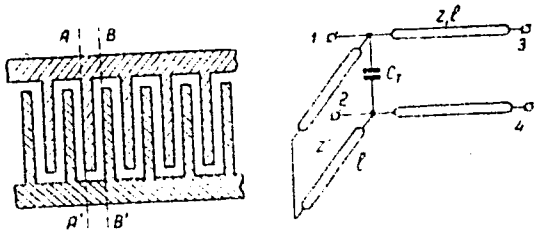
Experimental investigation ....

There are 16 figures and 7 references: 6 Soviet-bloc and 1 non-Soviet-bloc. The English-language reference quoted is: Ref. 4 - A. Bloch, F.J. Fisher and G.J. Hunt - Proc. IEE, 100, 64, 1953.

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete (Scientific Research Radiophysics Institute of Gor'kiy University)

SUBMITTED: December 15, 1960

Fig. 1:



Card 9/11 9

AL'BER, S.I.; BESPALOV, V.I.

Diffusion equation for a statistically nonhomogenous wave guide. Radiotekh. i elektron. 6 no.3:448-449 Mr '61. (MIRA 14:3)

(Wave guides)

L 12471-63 S/108/63/018/004/004/008

44

AUTHORS: Bespalov, V.I. and Kubarev, A.M., Active Members of the Society

TITLE: Calculation of losses for design of circuits forming pulsations of the current in induction loads

PERIODICAL: Radiotekhnika, v. 18, no. 4, 1963, 22-30

TEXT: A system of linear algebraic equations is obtained by a method of perturbation. They permit making corrections, which are stipulated by the presence of losses in inductions of the system, to the reactive elements of the forming dipole. The reactive parameters of the circuit, forming a prescribed pulsation of the current in induction loads without losses, are assumed to be known. Coefficients for the system of equations are expressed within parameters of an ideal circuit (without loss) and within parameters of the original pulsation. This work is a continuation of that reported in reference 2: V.I. Bespalov, A.M. Kubarev, Radiotekhnika, v. 17, no. 7, 1962. The presentation considers the approximation of the pulsation with

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L 12471-63

S/108/63/018/004/004/008

Calculation of losses for design...

a final total of transient harmonics, the parameters of the forming dipole, and the formation of a quasi right angled pulsation consisting of two harmonics (N=2). There are 3 figures and 4 foreign language references.

SUBMITTED: January 27, 1962

Card 2/2

L 48091-65 EWA(k)/FBD/EWG(r)/EWT(l)/EWP(e)/EWT(m)/EEC(k)-2/EWP(l)/EEC(t)/T/EEC(b)-2/
EWP(b)/EWA(m)-2/EWA(h) Pn-4/Pn-4/Po-4/Pf-4/Peb/Pi-4/Pl-4 SCTB/IJP(c) WG

ACCESSION NR: AP5010679 UR/0141/65/008/001/0070/0080

AUTHOR: Bespalov, V. I.; Gaponov, A. V.

TITLE: Statistical characteristics of automodulation of solid-state laser emission

SOURCE: IVUZ. Radiofizika, v. 8, no. 1, 1965, 70-80

TOPIC TAGS: solid laser, statistical property, two level laser, relaxation time, laser automodulation, laser spike sequence, laser spike intensity

ABSTRACT: The authors consider the influence of spontaneous emission on the behavior of a system of two-level objects with different times of longitudinal (T_1) and transverse (T_2) relaxation situated in a single-mode resonator ($T_2 \ll T_1$), where T_1 characterizes the lifetime at the upper level and T_2 the relaxation time of the dipole moment. The purpose of the investigation was to ascertain the causes of violation of the periodicity of the automodulation, which in turn affects the periodicity of the sequence of spikes in ruby lasers. The steady-state oscillations in a laser without regard to fluctuations are first investigated in the phase plane for stability, followed by a study of the effect of spontaneous emission.

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APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205110020-0"

L 48091-65
ACCESSION NR: AP5010679

An expression is derived for the intensity at the maximum of the first spike and the statistical characteristics of a sequence of spikes is analyzed. The results show that spontaneous emission leads on the average to faster attenuation of the modulation of the emission during the transient time. It is shown that the maximum power in solid-state laser spikes is logarithmically related to the intensity of the spontaneous emission. Orig. art. has: 5 figures and 31 formulas. [02]

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete (Scientific Research Radiophysics Institute at Gor'kiy University).

SUBMITTED: 05May64	ENCL: 00	SUB CODE: EC	
NR REF SOV: 005	OTHER: 005	ATD PRESS: 4002	

Card 2/2

L 8324-66 EEC(k)-2/EWT(l)/FBD/EWP(k)/T/EWA(h)/EWA(m)-2 SCTB/IJP(c) WG

ACC NR: AP5026706 SOURCE CODE: UR/0141/65/008/005/0909/0919

AUTHOR: Bespalov, V. I.; Yakubovich, Ye. I.

ORG: Scientific Research Institute of Radiophysics at Gorkiy University (Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete)

TITLE: Periodic internal modulation of emission and the possibility of giant pulse generation in a three-level laser with an inhomogeneous excitation of active medium

SOURCE: IVUZ. Radiofizika, v. 8, no. 5, 1965, 909-919

TOPIC TAGS: laser, three level laser, laser cavity, giant pulse laser, laser emission, laser pulsation

ABSTRACT: The effect of inhomogeneous optical excitation of the active medium on the single-mode operation of a laser is investigated using a laser model containing two differently excited samples of the active medium in homogeneous field regions of the cavity. The analysis is conducted using oscillation equations describing the interaction between the resonant cavity and the inverted population. It is shown that the existence of giant pulse regime requires that a certain relationship exist between the amplitudes of the fields in the localized points of the active medium. The possibility of unattenuated internal modulation of laser radiation in the cavity exists. Under certain conditions, the laser emission may occur in the form of a periodic succession of giant pulses. Orig. art. has: 27 formulas and 7 figures. [CS]

SUB CODE: 20/ SUBM DATE: 14Apr65/ ORIG REF: 001/ OTH REF: 003/ ATD PRESS: 4149

Card 1/1 JW UDC: 621.378.325

L 30391-66 EWT(1) IJP(c) GG/WW
ACC NR: AP6020792 SOURCE CODE: UR/0386/66/003/012/0471/0476

67
63
8

AUTHOR: Bespalov, V. I.; Talanov, V. I.

ORG: Scientific-Research Radiophysics Institute (Nauchno-issledovatel'skiy radiofizicheskiy institut)

TITLE: Filamentary structure of light beams in nonlinear liquids

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 3, no. 12, 1966, 471-476

TOPIC TAGS: light transmission, light theory, light polarization, laser optics, laser modulation, LIQUID PROPERTY, PERTURBATION

ABSTRACT: The authors present a theory of formation of self-focusing light filaments in liquids, first described by Pilipetskiy and Rustamov (Pis'ma ZhETF v. 2, 88, 1965). It is shown that in a nonlinear dielectric, amplitude phase perturbations of a plane electromagnetic wave bring about its decay into individual beams having different self-focusing lengths, depending on the scale of the initial perturbation. In this case there exists a characteristic fastest-focusing scale, determined by the nonlinearity coefficient of the wave. The development of small perturbations of a plane wave into a decay is traced, and the stability of the

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perturbations is analyzed. The buildup of the instability caused by these perturbations is shown to depend on the width of the initial perturbation region, on the anisotropy caused by the incident wave, and on the random inhomogeneities of the medium in which the wave propagates. The results are of importance in connection with possible structural changes that can occur in the field radiated by a laser, especially if the effect of nonlinearity of the active medium is aggravated by the presence of other nonlinear materials in the cavity (such as a saturating shutter). The authors thank A. V. Gaponov and M. A. Miller for a discussion of the results and V. N. Gol'dberg and R. E. Erm for the electronic computer calculations. Orig. art. has: 2 figures and 6 formulas. [02]

SUB CODE: 20/ SUBM DATE: 12Apr66/ ORIG REF: 006/ OTH REF: 004/
ATD PRESS: 5017

ACC NR: AP6022077 SOURCE CODE: UR/0141/66/009/003/0513/0524

AUTHOR: Bespalov, V. I.; Freydman, G. I.

ORG: Scientific-Research Institute of Radiophysics, Gor'kiy University (Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete)

TITLE: Spectral and energy characteristics of giant pulses

SOURCE: IVUZ. Radiofizika, v. 9, no. 3, 1966, 513-524

TOPIC TAGS: giant pulse, laser pulse, laser R and D, light pulse

ABSTRACT: Although an examination of laser multimode processes describable by nonlinear equations in the general case is extremely difficult, the spectral characteristics of giant pulses and pulse delay time (from the moment of completion of self-excitation conditions) can be calculated with sufficient accuracy in a linear approximation. The development of the giant pulse, when the nonlinearity is essential, can be approximately described by equations reminiscent of those of a single-mode laser, which permits evaluating the effect of multimode structure on the energy and power of the giant pulse. It is found that the frequency spectrum of the pulse emitted as a

Card 1/2 UDC: 621.378.325

ACC NR: AP6022077

result of Q-switching is much wider than the spectrum of a single pulse emitted under ordinary conditions. The maximum width of the angular and frequency spectra and minimum delay time correspond to an instantaneous Q-switching. A theoretical plot of $\Delta\omega$ vs. n_0 is in good agreement with experimental points obtained from a Nd-glass laser (12-cm long, 1-cm diameter rod). A typical numerical example shows that two lasers — ruby and Nd-glass — have about the same parameters: pulse delay time, 24 nsec; angular spectrum, 5'; relative width of frequency spectrum, 0.3. The effect of the number of modes on the giant-pulse height was determined on a digital computer; a difference of only 10% was detected between the multimode and single-mode cases. Orig. art. has: 6 figures and 37 formulas.

SUB CODE: 20 / SUBM DATE: 31Aug65 / ORIG REF: 006 / OTH REF: 003

Card 2/2

L 37[illegible]-66 FBD/EWT(1)/EEC(k)-2/T/EWP(k) IJP(c) WG

ACC NR: AP6022078 SOURCE CODE: UR/0141/66/009/003/0525/0537

AUTHOR: Bespalov, V. I.; Bogatyrev, Yu. K.

ORG: Scientific-Research Institute of Radiophysics, Gor'kiy University (Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete)

TITLE: Laser with Q-switched resonator

SOURCE: IVUZ. Radiofizika, v. 9, no. 3, 1966, 525-537

TOPIC TAGS: solid state laser, Q switching, laser R and D, laser theory

ABSTRACT: So far, only a simplest model of the Q-switched laser has been analyzed (e. g., M. F. Lee, Appl. Optics, 3, 417, 1964; A. A. Vuylsteke, J. Appl. Physics, 34, 1615, 1963). Due to the simplifying assumptions made in the previous works, many important points have never been completely investigated. The present article offers the results of a numerical (computer) solution of a system of differential equations that describe the processes transpiring in a 3-level laser; the working substance is assumed to be concentrated in the homogeneous region of the field in a single-mode resonator. The solution was found by the Runge-Kutta method with an automatic interval selection; the computation error is claimed to be 0.01 or less. The modulators with polarization switching (crystal) and with a rotating mirror (prism) are considered. The effects of the finite switching speed, resonator frequency deviation (from the mean frequency of molecular transition), finite

 UDC: 621.378.325

L 37933-66

ACC NR: AP6022078

relaxation time, resonator-mirror transmissivity, etc. upon the fundamental radiated pulse parameters (shape, duration, power) are clarified. Orig. art. has: 12 figures and 13 formulas.

[03]

SUB CODE: 20 / SUBM DATE: 10Sep65 / ORIG REF: 006 / OTH REF: 004

Card 2/2 nlc P

L 43921-66 EWT(l)/EEC(k)-2/T/EWP(k) IJP(c) WG

ACC NR: AP6026935 SOURCE CODE: UR/0141/66/009/004/0715/0719

AUTHOR: Bespalov, V. I.; Bogatyrev, Yu. K.

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B

ORG: Scientific-Research Institute of Radiophysics, Gor'kiy University (Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete)

TITLE: Doubling the frequency of light emitted by a Q-switched laser 25

SOURCE: IVUZ. Radiofizika, v. 9, no. 4, 1966, 715-719

TOPIC TAGS: laser, laser R and D, pulsed laser, ~~Q-switching~~

ABSTRACT: The characteristics of double frequency pulses produced in lasers by external doubling and by inside-resonator doubling are compared (calculated on a digital computer). It is found that, with small conversion factor K of the nonlinear element, the inside-resonator doubling is more efficient; with large K, the external doubling is more efficient. Here, $K = P_{2\omega}/P^2_{\omega}$, where P_{ω} is the energy of the fundamental-frequency wave falling on the nonlinear element and $P_{2\omega}$ is the double-frequency energy at the nonlinear element output. For a nonlinear element placed inside the resonator, an optimal K exists at which the double-frequency output is maximum. It is evident that for nonlinear element placed outside the resonator, the double-frequency power increases in proportion to K. Plots of $P_{2\omega}$ vs. K for both nonlinear-element locations show that the frequency converter should be placed

Card 1/2 UDC: 621.378.325.001

L 43921-66

ACC NR: AP6026935 O

inside the resonator when the conversion factor is relatively small, the crystal length is about 2 cm, and the resonator-Q switching time is short. Orig. art. has: 4 figures and 5 formulas. [03]

SUB CODE: 20, 09 / SUBM DATE: 04Nov65 / ORIG REF: 002/ ATD PRESS: 5066/

Card 2/2 PB

ACC NR: AP7001213 SOURCE CODE: UR/0141/66/009/006/1117/1123

AUTHOR: Bespalov, V. I.

ORG: Scientific-Research Institute of Radiophysics, Gor'kiy Univeristy [Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete]

TITLE: Light-frequency doubling in a nonlinear medium containing random inhomogeneities [Reported at the Nonlinear Optics Symposium, Minsk, Jun 65]

SOURCE: IVUZ. Radiofizika, v. 9, no. 6, 1966, 1117-1123

TOPIC TAGS: coherent light, light frequency doubling, frequency doubling

ABSTRACT: An evaluation is made of the effect of random changes in the optical-axis direction on the light-frequency-doubling factor in a nonlinear crystal. A system of nonlinear equations is set to describe the normalized amplitudes and phase differences in the frequency conversion process. Certain simplifications are applied to make the system linear, and an integral formula for the frequency-conversion factor is derived. From this formula, a statistical mean of the conversion factor is determined. It is proven that random inhomogeneities result in a decreasing conversion factor. Longer inhomogeneities or crystals predicate stricter tolerance of optical-axis oscillation. The effect of random inhomogeneities can be weakened (halved) by optical orientation of the crystal. Orig. art. has: 2 figures, 31 formulas, and 1 table. [03]

SUB CODE: 20/ SUBM DATE: 28Feb66/ ORIG REF: 003/ OTH REF: 005/ ATD PRESS: 5110

Card 1/1 UDC: 548.0:535:621.378.4

BESPALOV, V.", Cand Tech Sci -- (diss) "Microstructure and mechanical properties of the surface layers after treatment with finishing by glass sandblasting of steel 30 X GSA (chromansile), heat thermally treated by different regimes." Rostov-on-Don, 1958, 16 pp (Min of Higher Education USSR. Georgian Order of Labor Red Banner Polytechnic Inst im S.M. Kirov) 180 copies (KL, 50-58, 123)

BESPALOV, V.M., aspirant

Experimental investigations of changes in the microstructure and mechanical properties of surface layers in hardened 30KhGSA steel caused by finish machining. Izv.vys.ucheb.zav.;mashinostr. no.2:140-149 '58. (MIRA 11:12)

1. Rostovskiy-na-Donu institut sel'skokhozyaystvennogo mashinostroyeniya.
(Steel--Metallography)

BESPALOV, Vladimir Matveyevich[deceased]; DMITRIYEV, Aleksandr Yefimovich; YERSHOVA, I., red.; IVANOV, N., tekhn. red.

[Maloyaroslavets]Maloiaroslavets. Kaluga, Kaluzhskoe knizhnoe izd-vo, 1962. 218 p. (MIRA 15:11)
(Maloyaroslavets)

Bespalov, V. N.

10 июня

(с 10 до 16 часов)

Ю. К. Муравьев

Новый метод приближенного решения интегрального уравнения теории антенн

В. И. Таланов

К вопросу о возбуждении диэлектрических волноводов

О. Г. Вендик

Синтез линейки излучателей с электрическим качанием луча

10 июня

(с 18 до 22 часов)

Г. Л. Фридман

Фокусирующие свойства дифракционных отражателей (решеток).

А. И. Чаплин

Метод измерения коэффициента направленного действия антенн на малых расстояниях

Б. С. Надененко,
И. А. Гусятинский

Влияние условий распространения на антенны, работающие на линиях, использующих явление рассеяния радиоволн в тропосфере

С. И. Надеинов

Антенна бегущей волны для приема средних волн

В. Д. Кузнецов,
А. И. Березин

Система многократного использования сложных горизонтальных антенн

11 июня

(с 10 до 16 часов)

Л. С. Минкович

Дифракция электромагнитных волн на конце спиральной линии

В. С. Ильин

Расчет многоканального волноводного делителя мощности

В. Н. Беспалов

О статистических характеристиках коэффициента отражения волны в случайно неоднородных линиях передачи

report submitted for the Centennial Meeting of the Scientific Technological Society of Radio Engineering and Electrical Communications im. A. S. Popov (VNORIE), Moscow, 8-12 June. 1959

PETLYAKOV, M.M., inzh.; SHAPOVALOV, A.P., inzh.; GUSAKOV, A.N., inzh.; UDOVICHENKO, N.V., inzh.; BESPALOV, V.N., inzh.; KUZNETSOV, D.K., inzh.

Obtaining a flat sheet of transformer steel. Stal' 25 no.12: 1132-1134 D '65. (MIRA 18:12)

1. Novolipetskiy metallurgicheskiy zavod i TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii imeni I.P. Bardina.

AUTHOR: Bespalov, V. P., Engineer SOV/91-59-2-13/33

TITLE: The Automation of Control of Oil Cleaning Plants (Avtomatizatsiya upravleniya masloochistitel'nymi ustanovkami)

PERIODICAL: Energetik, 1959, Nr 2, pp 18 - 19 (USSR)

ABSTRACT: The author describes the construction and functioning of an automatic control system for oil cleaning plants of Soviet and foreign make. Worked out by an electrician, S. A. Katkov, it is intended for use in installations performing large-scale cleaning of transformer oil. This system dispenses with much labor and secures good fire safety. There is one diagram.

Card 1/1

BESPALOV, V.P., inzh.; DUKHANIN, Yu.A., inzh.

Using linear programming for plotting regular-flow graphs for continuous production lines. Vest.mashinostr. 42 no.8:74-76 Ag '62. (MIRA 15:8)

(Factory management)

CHERNOMORDIKOV, V.V.; Prinimali uchastiye: BESPALOVA, I.; NAD"YARNAYA, N.; TOKOREVA, T.; MAMATKINA, E.

Atmospheric humidity as an ecologico-physiological factor. Dokl. AN SSSR 140 no.4:935-937 O '61. (MIRA 14:9)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova. Predstavleno akademikom I.I.Shmal'gauzenom.

(HUMIDITY--PHYSIOLOGICAL EFFECT)

TOKAREV, B.F., kand.tekhn.nauk; BESPALOV, V. Ya., inzh.

Large amplidyne amplifiers. Elektrichestvo no.8:14-18 Ag '61. (MIRA 14:10)

1. Moskovskiy energeticheskiy institut.
(Rotating amplifiers)

KOPYLOV, I.P., kand.tekhn.nauk; BESPALOV, V.Ya., inzh.

Reversive asynchronous motor with excitation. Vest. elektroprom. 32 no.11:14-17 N '61. (MIRA 14:11)
(Electric motors, Induction)

KOPYLOV, I.P., kand. tekhn. nauk, dotsent; BESPALOV, V.Ya., inzh.

Reversive asynchronous motor-amplifiers. Trudy MEI no.38:199-208 '62.
(MIRA 17:2)

ALENCHIKOV, D.A., inzh.; BESPALOV, V.Ya., inzh.; KOPYLOV, I.P., kand. tekhn. nauk; NIKITIN, Yu.A., inzh.

Series of motor-amplifiers. Elektrotekhnika 35 no.6:19-24 Je '64. (MIRA 17:8)

BESPALOV, V.Ya.

Technical and economic indices of vibratory auger drilling in seismic prospecting in Turkmenia. Razved.i okh.nedr 25 no.11:31-34 N '59. (MIRA 13:5)

1. TSentral'naya kompleksnaya tematicheskaya ekspeditsiya.
(Kara Kum--Seismic prospecting)

SOROKIN, P.I.; FOMINYKH, I.P.; BESPALOV, Ya.G.; POBEREZKIN, A.Z.; ZINCHENKO, A.M.; OSKOLKOV, Ye.A.

Inoculation of cupola cast iron with rare-earth metal alloys. Lit. proizv. no.9:27-31 S '64. (MIRA 18:10)

STREL'NIKOV, N.P.; BESPALOV, Ye.M.; SOKOLKIN, A.F.; SHPINEV, V.F.; KRUPENNIKOV, S.S.; SPEKTOR, M.D.

Some conclusions from the experiences of building a pipe rolling mill. Prom.stroi. 42 no.11:6-9 N '64. (MIRA 18:8)

1. Trest Uraltyazhtrubstroy (for Strel'nikov, Bespalov, Sokolkin). 2. Upravleniye kapital'nogo stroitel'stva Pervoural'skogo novotrubnogo zavoda (for Shpinev). 3. Uralpromstroyniiproyekt (for Krupennikov, Spektor).

GOGOLITSYN, M., kand. tekhn. nauk; BESPALOV, Yu., inzh.

Magnetic testing of parts. Avt. transp. 42 no.9:28-30 S '64.
(MIRA 17:11)

GOGOLITSYN, M.A., kand.tekhn.nauk; BESPALOV, Yu.A.

Origination of fatigue cracks in motor-vehicle parts. Avt.prom. 31 no.7:18-21 Jl '65. (MIRA 18:8)

1. Kazakhskiy nauchno-issledovatel'skiy i proyektnyy institut avtomobil'nogo transporta.

PLOTNIKOV, P.N.; KAZANSKAYA, L.N.; BESPALOVA, O.I.; BEZRUCHENKO, I.I.; KRASHENNIKOVA, Ye.Ye.; SHCHERBACH, V.A.; BROVKIN, S.I., spets. red.

[Use of liquid intermediate products in the making of wheat flour bread] Primenenie zhidkikh polufabrikatov pri proizvodstve pshenichnykh sortov khleba. Moskva, TSentr. in-t nauchno-tekhn. informatsii pishchevoi promyshl., 1963. 39 p. (MIRA 18:5)

TIKHONENKO, A.S.; BESPALOVA, I.A.

Two forms of Bacillus mycoides phage. Mikrobiologiia 30 no.5:867-870 S-O '61. (MIRA 14:12)

1. Institut radiatsionnoy i fiziko-khimicheskoy biologii AN SSSR.
(BACTERIOPHAGE) (BACILLUS MYCOIDES)

TIKHONENKO, [illegible] BEGLAROV, [illegible]

Method of preserving the fine structure of phage-infected bacteria in ultrathin sections. Mikrobiologiia 33 no.2: 353-356 Mr-Ap '64. (MIRA 17:12)

1. Institut radiatsionnoy i fiziko-khimicheskoy biologii AN [illegible].

BESPALOVA, I. A.; TIKONENKO, A. S.

"The membrane structures of bacterial cells."

report submitted to 3rd European Regional Conf, Electron Microscopy, 26 Aug-3 Sep 64.

TIKHONENKO, A. S.; BESTALOVA, I. A.; KRIVISKIY, A. S.

"Electron microscopy studies of RNA phage MS2 and its reproduction in bacterial cells."

report submitted to 3rd European Regional Conf, Electron Microscopy, Prague, 26 Aug-3 Sep 64.

L 40793-65
ACCESSION NR: AP5005901 S/0020/65/160/003/0704/0705

AUTHOR: Tikhonenko, A. S.; Bespalova, I. A.; Kriviskiy, A. S.

TITLE: Electron microscope study of the RNA-bearing MS2 phage and its multiplication in a bacterial cell

SOURCE: AN SSSR. Doklady, v. 160, no. 3, 1965, 704-706

TOPIC TAGS: bacteriophage, ribonucleic acid

ABSTRACT: An electron microscope study of a free MS2 phage and of bacterial cells infected with this phage was made. The MS2 phage is formed in the cytoplasm without affecting the nucleoid of the bacterial cell. In contrast to DNA-bearing phages, the particles of the MS2 phage form a strictly ordered crystalline packing within the cell. The morphological data obtained confirm biological and biochemical findings. The authors assume that the extremely high yield of RNA-bearing phages in the relatively short period of intracellular multiplication (about 30 minutes) is connected with the fact that these phages, in contrast to DNA-bearing phages, develop autonomously from the regulatory-genetic apparatus (nucleus) of the host cell and apparently do not require intermediaries for transfer of information in the synthesis of daughter phage particles. Orig. art. has: 3 figures (5 photos).

Card 1/2

L 40793-65
ACCESSION NR: AP5005901

ASSOCIATION: Institut radiatsionnoy i fiziko-khimicheskoy biologii Akademii nauk SSSR (Institute of Radiation and Physical-Chemical Biology, Academy of Sciences, SSSR)

SUBMITTED: 28Apr64 ENCL: 00 SUB CODE: LS

NO REF SOV: 001 OTHER: 011

Card 2/2

BESPALOVA, I. D.

USSR/ Geology - Granits

Card 1/1 Pub. 22 - 46/62

Authors : Smorchkov, I. Ye.; Bespalova, I. D.; and Batyreva, N. N.

Title : About the Mesozoic age of alaskite granits of the Kuraminsk mountain range

Periodical : Dok. AN SSSR 102/3, 595 - 597, May 21, 1955

Abstract : Geological data are presented regarding the Mesozoic age of alaskite (rock of the granite clan) prevalent in the Kuraminsk mountain range of Central Asia. Two USSR references (1952).

Institution : Acad. of Sc., USSR, Inst. of Geol. Sc.

Presented by: Academician D. I. Shcherbakov, December 14, 1954

NAHBUTT, K.I.; BESPALOVA, I.D.

Quantitative X-rays fluorescence spectrum analysis for the elements U, T_h, P_b, T_a, H_f, N_b, Z_r, Y and S_r. Zav. lab. 24 no.5:617-619 '58. (MIRA 11:6)
(X-ray spectroscopy) (Metals--Analysis)

BESPALOVA, I.D.; SEMENOV, Yo.I.

Absolute age of the Lovozero and other alkaline massifs in the Kola Peninsula. Biul.Kom.po opr.abs.vozr.geol.form. no.4: 77-80 '61. (MIRA 15:1)

(Kola Peninsula--Rocks, Igneous)
(Geological time)

YEGOROVA, A.G.; KAZANSKAYA, L.N.; LOBANOVA, A.Ya.; MELIKHOVA, Z.V.; BESPALOVA, I.G.; SHCHERBACH, V.A.

[Using the new yeast and lactic acid bacteria strains in making tin rye bread] Prigotovlenie rzhanogo formovogo khleba s primeneniem novykh shtammov molochnokislykh bakterii i drozhzhei. Moskva, TSentr. in-t nauchno-tekhn. informatsii pishchevoi promyshl., 1963. 28 p. (MIRA 17:9)

MIRONOV, G.S.; FARBEROV, M.I.; BESPALOVA, I.I.

Synthesis of carbonyl monomers based on Mannich reaction. Part 5: Synthesis of pentadienals. Zhur. ob. khim. 34 no. 5:1642-1645 My '64. (MIRA 17:7)

1. Yaroslavksiy tekhnologicheskiy institut.

BESPALOVA, L.L.

Result of the treatment of osteoarticular tuberculosis in children with PAS. Probl. tuberk., Moskva no.3:87-88 May-June 1953. (CIML 25:1)

1. Of Bakovka Children's Bone-and-Joint Tuberculosis Sanatorium of Moscow Municipal Public Health Department (Head Physician -- A. Ye. Fridlyand; Consultant -- Prof. Z. Yu. Rol'ye).

BESPALOVA, L.S.; SPIROV, M.S., professor, zasluzhennyy deyatel' nauki, zaveduyushchiy.

Efferent lymph vessels of the transverse colon. Arkh.anat.gist.i embr. 30 no.3:70-77 My-Je '53. (MLRA 6:6)

1. Kafedra normal'noy anatomii Kiyevskogo ordena Trudovogo Krasnogo Znameni meditsinskogo instituta. (Lymphatics) (Colon (Anatomy))

[illegible] M. I. F.

[illegible], I. F.- "[illegible] of Lymph Drainage from the Transverse Abdominal Intestine, the Stomach, and the Pancreas in Humans and their Relationship." Kiev order of Labor Red Banner Med Inst imeni Academician A. A. Bogomolets. Kiev, 1955 (Dissertations for Degree of Candidate of Medical Sciences)

SO: Khirurgiya Letopis' No. 2, June 1955, Moscow

BESPALOVA, L.S. (Kiyev, Arsenal'nyy per., d.10, kv.2)

Morphological bases of the direction of lymph flow in the human abdominal cavity. Nov.khir.arkh. no.6:69-74 N-D '59.
(MIRA 13:4)

1. Kafedra normal'noy anatomii (zaveduyushchiy - zasluzhennyy deyatel' nauki prof. M.S. Spirov) Kiyevskogo meditsinskogo instituta.

(LYMPHATICS) (ABDOMEN)

17(15) SOV/21-59-9-21/25

AUTHOR: Bespalova, L.S.

TITLE: The Intestinal Lymphatic Trunk of Certain Mammals

PERIODICAL: Dopovidi Akademiyi nauk Ukrayins'koyi RSR, Nr 9, 1959, pp 1019-1023 (USSR)

ABSTRACT: The article presents the results of an investigation conducted in respect to the absence of a uniform opinion as to the structure of the lymph ducts from the organs of the gastro-intestinal tract of various representatives of the mammal class. This investigation was conducted on 70 cadavers of 18 mammalian species of the Marsupialia, Insectivora, Rodentia, Carnivora, Cetacea, Artiodactyla and Simia orders. The procedure applied consisted of: injecting the lymph ducts from the organs of the gastro-intestinal tract to the thoracic duct inclusively; a fixation with a 5%-solution of formalin; a preparation; a description; a photograph of the object to be injected. Suspensions of finely-ground oil paints in formalin

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The Intestinal Lymphatic Trunk of Certain Mammals

were used for this injection. The analysis of the results indicates that taking into account the genetic connection between the organs in which the digestion and absorption of nutrient matter takes place (derivatives of the medial and distal sections of the anterior intestine) and the lymphatic system, will enable us to define the concept of the intestinal trunk, as well as the region from which it takes the lymph. The intestinal trunk consists of the efferent lymph vessels of the regional nodes of the organs - derivatives of the medial and distal section of the anterior intestine - which directly reach the thoracic duct, form the anterior roots (or root) of the latter, and enter into its beginning (lactic cistern) at the level of the caudal thoracic and cranial 1-2 lumbar vertebrae. Animals belonging to the mammal class have a constant intestinal lymphatic trunk, which, however, is expressed in several forms: lymphatic plexi, numerous lymphatic vessels, collector trunks, one common trunk,

The Intestinal Lymphatic Trunk of Certain Mammals

or a combination of various forms. There are 5 references, 3 of which are Soviet, 1 Italian, and 1 English.

ASSOCIATION: Kyyivs'kyy medychnyy instytut im. akad. O.O. Bohomol'tsya (Kiyev Medical Institute imeni Academician O.O. Bogomolets')

PRESENTED: By V.H. Kas'yanenko, Member AS UkrSSR

SUBMITTED: March 2, 1959

SPIROV, Mikhail Sergeyevich, prof.; SVIRIDOV, Aleksandr Ivanovich, doktor med. nauk; ANDRIYEVSKIY, Boris Stepanovich, assistent; BESPALOVA, L.S., red.; BYKOV, N.M., tekhn. red.

[Lymphatic vessels of the respiratory organs] Limfaticheskie sosudy organov dykhaniia. Kiev, Gos. med.izd-vo USSR, 1961. 161 p. (MIRA 14:11)

(LYMPHATICS) (RESPIRATORY ORGANS)

BESPALOVA, L.S. (Kiyev-11, Arsenal'nyy per., 10, kv.2)

Dependence of the results in injection of the lymphatic vessels on the postmortem condition of the vascular system. Arkh. anat. gist. i embr. 41 no.9:88-92 S '61. (MIRA 15:1)

1. Kafedra normal'noy anatomii (zav. - zasluzhennyy deyatel' nauki prof. M.S.Spirov) Kiyevskogo meditsinskogo instituta.
(LYMPHATICS) (HISTOLOGY, PATHOLOGICAL)

BESPALOVA, L. S., kand. med. nauk, (Kiyev, 11, Arsenal'nyy per., d.10, kv.2)

Morphological characteristics of the routes of lymph circulation demonstrated in the cadavers of cancer patients. Nov. khir. arkh. no.2:27-34 '62. (MIRA 15:2)

1. Kafedra normal'noy anatomii (zav. - zasl. deyatel' nauki, prof. M. S. Spirov) Kiyevskogo meditsinskogo instituta.

(LYMPHATICS—CANCER)

L 17447-63

ACCESSION NR: AP3004301 S/0064/63/000/005/0073/0074 45

AUTHORS: Chicherin, Yu. I.; Abrosimov, Yu. V.; Bespalova, L. T.

TITLE: Use of glass wool filters for trapping potassium tetroxide dust

SOURCE: Khimicheskaya promy*shlennost', no. 5, 1963, 73-74

TOPIC TAGS: glass wool filter, potassium, potassium tetroxide, FS-8.5 filter

ABSTRACT: Authors describe a new design of glass wool filter and its behavior when used to trap potassium tetroxide dust. This compound was selected to test the filter on account of its ability to create very severe operating conditions for the filter. Authors state that product losses amount to about 6.5 g per normal cubic meter without the use of this FS-8.5 filter. Use of this filter greatly reduces these losses. Authors then give a detailed description of the construction of this filter. Authors state that their tests showed that these filters can be effectively used for trapping different kinds of industrial dusts, including those with

Card 1/2

L 17447-63
ACCESSION NR: AP3004301

increased coalescence, at a gas temperature up to 300C. Orig. art. has: 3 figures.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 15Aug63 ENCL: 00

SUB CODE: CH NO REF SOV: 000 OTHER: 000

Card 2/2

CHICHERIN, Yu.I.; ABROSIMOV, Yu.V.; BESPALOVA, L.T.

Use of glass fiber filters for collecting dust of potassium peroxide. Khim. prom. no.5:393-394 My '63. (MIRA 16:8)

AUTHOR: Bespalova, L. V. (Gorky). 24-5-1/25

TITLE: On the theory of impact controlled vibration mechanism. (K teorii vibroudarnogo mekhanizma).

PERIODICAL: "Izvestiya Akademii Nauk, Otdeleniye Tekhnicheskikh Nauk", (Bulletin of the Ac.Sc., Technical Sciences Section), 1957, No.5, pp. 3-14 (U.S.S.R.)

ABSTRACT: A model of the mechanism considered is shown in Fig.1. This consists of a mass M suspended on a spring and having one degree of freedom. An external sinusoidal force F sin ωt acts on the mass M and the spring constant is k. The motion of the mass M is limited by a stationary plane with which it makes inelastic collisions. It is assumed that: 1) energy dissipation takes place only during collisions with the plane, 2) the spring is linear, 3) collisions are instantaneous, 4) displacement of the limiting plane may be neglected. The equation of motion of the mass M is given by (eq.1):

$$M\ddot{x} + kx = P + F \sin \omega t \qquad (x < x_o)$$

Card 1/5 where P - a constant force, in general $\neq Mg$, and k - the spring constant. x is measured from the point at which the lower end of the spring is situated when the

On the theory of impact controlled vibration mechanism.(Cont.)
latter is unstrained. Impact takes place at $x = x_0$, and a coefficient R (coefficient of restitution) is defined by $\dot{x}_1 = -R\dot{x}_0$, where $\dot{x}_0$ is the velocity just before the collision and $\dot{x}_1$ is the velocity just after the collision. The equation is transformed by the substitutions:

$$\xi = F^{-1}(M\omega^2 x - P\lambda^{-2}); \quad \tau = \omega t; \quad \lambda^2 = kM^{-1}\omega^{-2}$$

and takes the form

$$\ddot{\xi} + \lambda^2 \xi = \sin\tau \qquad (\xi < \xi_0)$$

$$\dot{\xi}_1 = -R\dot{\xi}_0 \qquad (\xi = \xi_0)$$

The system is therefore characterised by the parameters λ, R ξ_0 which lie within the limits $0 \leqslant \lambda < \infty$, $-\infty < \xi_0 < \infty$, $0 \leqslant R \leqslant 1$. This problem was considered in refs. 1 - 6. The phase space of the system is 3-dimensional. Putting $r = r_0 + \xi_0 - \xi$; $\theta = \tau$; $z = \dot{\xi}$ one finds that the limiting plane $\xi = \xi_0$ corresponds to

Card 2/5

On the theory of impact controlled vibration mechanism.(Cont.)

the surface Π of a cylinder of radius $r = r_o$, the region $\xi < \xi_o$ corresponds to the region outside the cylinder, and the region $\xi > \xi_o$ corresponds to the region G within the cylinder (Fig.2). The motion of the system is represented by the motion of a point in this space as shown in Fig.2. A closed trajectory in the phase space corresponds to a periodic motion of M. This is only possible if the representation point moves round the cylinder at least once. Hence the only possible periodic motions are those whose periods are multiples of the period of the forcer,i.e. $T = 2\pi n$ (n = 1, 2 ....etc.). Regions of similar qualitative behaviour can be characterised by two integers m and n, where m is the number of impacts per period and n the period multiple defined above. The necessary and sufficient conditions for periodic motion are:

$$\tau_m - \tau_o = 2\pi n;\ \dot{\xi}_m - \dot{\xi}_o;\ \xi \leqslant \xi_o \text{ for } \tau_o \leqslant \tau \leqslant \tau_m \quad (n,m = 1,2 \ldots)$$

Card 3/5 Equations (2.3) determine $\dot{\xi}_o$ and τ_o. When m = 1, $\dot{\xi}_o$ is given by (2.4) and τ_o by (2.5). The limits of real and positive values of $\dot{\xi}_o$ for the case m = 1 are (eq.2.6):

$$|\xi_d| = \frac{1}{|\lambda^2-1|} \qquad (\xi_0 \operatorname{ctg} \pi n\lambda > 0)$$

$$|\xi_d| = \frac{1}{\lambda^2-1}\sqrt{1+\left(\frac{1+R}{1-R}\right)^2 \frac{\operatorname{ctg}^2 \pi n\lambda}{\lambda^2}} \qquad (\xi_0 \operatorname{ctg} \pi n\lambda < 0)$$

and also sections of the straight lines $n\lambda = k$ where $k \neq n$ ($k, n = 1, 2, \ldots$ etc.). The necessary and sufficient conditions for the stability of the periodic states are then shown to be the following (ref.10):

$$(1+R)\lambda^{-1}\xi_0 \sin 2\pi n\lambda + \dot{\xi}_0 \Lambda_1 > 0, \quad (1-R)^2 \dot{\xi}_0 > 0$$

$$-(1+R)\lambda^{-1}\xi_0 \sin 2\pi\lambda + \dot{\xi}_0 \Lambda_2 > 0$$

where $\Lambda_1 = (1+R^2)\lambda^{-2}\cos^2 \pi n\lambda + (1-R)^2 \sin^2 \pi n\lambda$

$\Lambda_2 = -(1+R)^2\lambda^{-2}\cos^2 \pi n\lambda - (1-R)^2 \sin^2 \pi n\lambda + 2(1+R)^2 > 0$

Card 4/5 Since in all practical cases $1 - R^2 > 0$ $\dot{\xi}_0 > 0$, hence the second inequality is always satisfied. Figs. 3a, b, and c show the limits of stability of single impact ($m = 1$)

On the theory of impact controlled vibration mechanism.(Cont.) 24-5-1/25

periodic motions corresponding to n = 1, 2, 3, for R = 0.6. The regions of unstable motion are shaded with down-sloping lines from left to right, and regions of negative and complex values of ξ_0 are shaded with up-sloping lines from left to right. The broken lines show the borders of the impactless motion. It is shown that the statement made in reference (5) on the impossibility of stable motion in the region $\xi_0 > 1/|\lambda^2 - 1|$ is incorrect. It can be seen from Fig.3 that some regions admitted as stable in refs.1 - 6 are now excluded. The special case R = 0 is considered in detail and is brought to a numerical conclusion. An electronic analogue was used to verify these calculations. Yu. I. Neimark, B. Ya. Kugan and T. N. Koroleva cooperated in this work.

Card 5/5

There are nine figures and 11 references, 10 of which are Slavic.

SUBMITTED: November 19, 1956.

AVAILABLE:

24,1400

69956

AUTHOR: Bespalova, L.V. SOV/141-2-4-11/19

TITLE: The Theory of Vibro-shock Ramming

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, 1959, Vol 2, Nr 4, pp 626 - 637 (USSR)

ABSTRACT: The dynamics of the compound system consisting of vibro-shock driver, pile and the soil is so complicated that it is convenient to consider the first two components separately. The problem of the driver has been treated elsewhere (Ref 4 and the references therein); here, the motion of the pile is examined. It is assumed that the side force of the soil on the pile is purely frictional and independent of speed of penetration. Before penetration takes place the ground moves with the pile and deforms elastically until a critical value of force is reached, whereupon resistance collapses. The most important practical case is studied where periodic withdrawal and sinking take place. The withdrawal phase is represented in Figure 1, the shocks being applied at equal intervals of time T . The pile position does not change while the shock lasts and the pile velocity-increment is constant and independent

Card1/4

of velocity itself. The non-dimensional equation of motion is Eq (2), the system being characterized by two parameters, θ and V. The representation is in the η, ξ plane of Figure 2. Between impacts, the point moves round a circular path; at each shock it is displaced parallel to the ordinate axis. For a periodic force the point-transformation is described by Eq (4) and takes place over the section 0 to Θ. Figure 3 distinguishes regions of stable motion in the Θ, V plane (shaded area) and plots constant velocity lines ($v = 0.5, 1, 2$). Figure 4 shows how the velocity of sinking depends on Θ for $V = 2$. This curve has a series of maxima whose values fall off as Θ increases. The first maximum is located at a frequency somewhat less than the natural frequency of the ground considered as a stiff body on an elastic support while, as V increases, the difference between these frequencies increases. Thus, an optimum condition for withdrawal is a shock frequency somewhat less than natural resonance. So far, the gravitational field has been neglected; if this is allowed for the equation of motion

[illegible] to the

69956

The Theory of Vibro-shock Ramming SOV/141-2-4-11/19

b , while the h-lines represent equal depths of penetration during the sinking time.
There are 8 figures and 6 Soviet references.

ASSOCIATION: Nauchno-issledovatel'skiy fiziko-technicheskiy institut pri Gor'kovskom universitete (Physico-technical Scientific Research Institute at Gor'kiy University)

SUBMITTED: April 10, 1959

Card 4/4

[illegible], L. V. Cand Phys-Math Sci (diss) "Certain problems in the theory of vibro-impact submerging." Moscow, 1960, 11 pp (Moscow State Univ im M. V. Lomonosov) (KL, 34-60, 119)

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205110020-0"

BESPALOVA, L.V.

Results of simulating a problem on vibrational and vibro-shock immersion. Izv. vys. ucheb. zav.; radiofiz. 3 no.1:130-141 '60. (MIRA 13:12)

1. Nauchno-issledovatel'skiy fiziko-tekhnicheskiy institut pri Gor'kovskom universitete.
(Vibration)

BESPALOVA, L.V.

Installation and operation of a water-supply network in Yakutsk.
Sbor.nauch.rab.AKKH no.12:20-54 '62. (MIRA 16:4)
(Yakutsk--Water--Distribution) (Frozen ground)

BESPALOVA, M.A.; PROKHOROVA, M.I.

Changes in the cerebroside content in the brain during various functional states of the animal. Nerv. sist. no.5:3-9 '64. (MIRA 18:3)

1. Laboratoriya obmena veshchestv Leningradskogo gosudarstvennogo universiteta.

USSR/Diseases of Farm Animals - Diseases Caused by Bacteria and Fungi. R-2

Abs Jour : Ref Zhur - Biol., No 11, 1958, 50166

Author : Bespalova, M.K.

Inst : The Far-North Scientific Research Institute of Farming.

Title : The Serological Diagnosis of Brucellosis in Reindeer.

Orig Pub : Byul. nauchno-tekhn. inform. n.-i. in-t s. kh. Krayn. Serera, 1957, No 3, 27-28.

Abstract : Blood sera examinations of 3,040 reindeer of various ages (excluding up to 6 months old calves) suffering from bursitis, as well as of some healthy animals (in order that latent forms of the disease may be detected) have shown that: a) the agglutination reaction (AR) is specific in detecting brucellosis in reindeer; here, the reaction of Huddleston is more sensitive than the reaction of Wright;

Card 1/2

Abs Jour : Ref Zhur - Biol., No 11, 1958, 50166

b) sera of reindeer afflicted with brucellosis show a high agglutination titer (1:1,600, 1:3,200); c) with time the positive reaction disappears in some of the reindeer; d) reindeer with a positive brucellosis reaction according to their AR later develop bursitis. The majority of reindeer afflicted by bursitis react positively to brucellosis antigen. -- From the author's summary.

BESPALOVA, M.T.; PETROVSKAYA, L.B.; GORBUNOV, G.I., doktor geol.-miner. nauk, red.; BELYAKOVA, A.I., red.

[Kola Peninsula; a bibliography of Soviet literature, 1962] Kol'skii poluostrov; bibliograficheskii ukazatel' sovetskoi literatury (1962 god). Apatity, 1965. 62 p. (MIRA 18:10)

1. Akademiya nauk SSSR. Kol'skiy filial, kirovsk. Biblioteka.

BESPALOVA, M. V

1071. Preparation of scarlet-fever streptococcal anatoxin. M. V. Bespalova. *Zh. Mikrobiol.*, 1955, No. 9, 58—61; *Referat. Zh. Biol.*, 1956, Abstr. No. 71271.—On treatment with formalin and heat, scarlet-fever streptococcal toxin [SST] is converted to anatoxin. To liberate the toxin from inert material containing it, it is first cleaned with alcohol. Formalin 0·1—0·5% is stirred in, and both in the cold and particularly at 39° there occurs an abrupt and relatively rapid detoxication of the thermolabile purified SST. The higher the concn. of formalin, the quicker and more completely does detoxication occur. The toxicity of the SST after alcohol purification and treatment with formalin at 39° continued to fall on further storage in the refrigerator. (Russian)

B. C. Vickery

med 1

Sg. Leningradskaya inst. Vaktsin i syvorotok (dir. M. P. Belov)
Nauchnyy Konsultant - prof. A. V. Ponomarev

BESPALOVA, M.V.

Antigenic properties of formaldehyde-treated preparations of purified Streptococcus scarlatinae toxin. Zhur.mikrobiol. epid. i immun. no.11:87 N '55. (MLRA 9:1)

1. Iz Leningradskogo instituta vaktsin i syvorotok (dir. M.P. Belov, nauchnyy rukovoditel'-prof. A.V.Ponomarev)
(STREPTOCOCCUS,
scarlatinae, toxin, antigenic properties of formaldehyde-treated prep.)
(FORMALDEHYDE, effects,
on Streptoc. scarlatinae toxin)

FIUSHKIN[illegible], L.[illegible]; EL[illegible]KIN, [illegible].B.; DAVYDOVA, T.I.; BESPALOVA, N.V.

Use of a liquid medium for the growth of [illegible]concentrated Hemophilus pertussis cultures suitable for vaccine preparation. [illegible] no.2:170-178 '5[illegible]. (MIRA 18:2)

1. Leningradskiy institut [illegible].

L 36237-65 EWT(1)/EEC(b)-2/T IJP(c) DM

ACCESSION NR: AP5010248 UR/0089/65/018/001/0076/0077

AUTHOR: Gurvich, L. G.; Bespalova, N. S.

TITLE: Role of thermal peaks in formation of lattice defects

SOURCE: Atomnaya energiya, v. 18, no. 1, 1965, 76-77

TOPIC TAGS: particle physics, heat effect, heat theory, thermal excitation, nuclear energy, crystal defect

ABSTRACT: The concept of thermal and shift peaks appearing with thermal excitations during fast particle energy transmission was introduced by F. Seitz et al. (Displacement of Atoms during Irradiation in Solid State Physics, 1956). Calculations showed that this energy is sufficient for heating to thousands of degrees an area with a radius of tens of angstroms containing not more than one thousand atoms. The thermal and shift peak models are used for resolving the general thermal conductivity. Orig. art. has: 1 table, 9 formulas.

ASSOCIATION: none

SUBMITTED: 13Feb64 ENCL: 00 SUB CODE: TD, NP

NO REF SOV: 000 OTHER: 001 NA

Card 1/1

"The Attempt to Fight Phlebotoms by Spraying Phlebotomus Breeding Places with DDT and BCH Preparations", by N.V. Bespalova, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, No 2, March-April 1957, pp 218-222.

The spraying with 15% BCH and 25% DDT emulsions of the potential or supposed breeding places of phlebotomus proved to be equally effective. The dosage of one gram of the crude preparation per one sq m of surface was sufficient.

By spraying the supposed breeding places of phlebotomus with DDT and BCH preparations for two consecutive years (twice every season) the number of the phlebotomus population was reduced in houses where spraying had been carried out 23.4 to 60.9 times in comparison with the numbers of insect population in houses which had not been sprayed.

The suppression of the phlebotomus population achieved by spraying of the potential breeding places remains effective for two to three

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subsequent years. The phlebotomus density in sprayed houses has been found to be only five to seven percent of that in houses where no spraying had been done.

During these experiments all the Phlebotomus species were equally exterminated.

In Uzbekistan the first spraying should begin at the end of April or early in May, and should be completed not later than 1-5 June, the second spraying should begin in July, and should be completed by 1-5 August.

BESPALOVA, N.M.

Investigations on soil erosion in the Volga Upland. Trudy Inst. lesa 44:35-52 '59. (MIRA 12:9)
(Volga Hills--Erosion)

YAKUBOV, T.F.; BESPALOVA, R.Ye.

Soil formation processes when vegetation starts growing on sands in the deserts of the northern Caspian Sea region. Pochvovedenie no.6:77-86 Je '61. (MIRA 14:6)

1. Pochvennyy institut imeni V.V. Dokuchayeva AN SSSR.
(Caspian Sea region--Soil formation)

1. BESPALOVA, S.A.

2. USSR (600)

4. Dairy Laws

7. Hygienic requirements for dairy equipment, Gig. i san. no. 3, 1953.

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

ACC NR: AT7001784 SOURCE CODE: UR/3119/66/000/004/0053/0055

AUTHOR: Gromov, B. V.; Bespalova, T. N.

ORG: Institute of Physical Chemistry AN SSSR (Institut fizicheskoy khimii AN SSSR)

TITLE: Influence of soft beta radiation on the kinetics of dissolution of radioactive strontium sulfate crystals

SOURCE: AN LatSSR. Institut fiziki. Radiatsionnaya fizika, no. 4, 1966. Ionnyye kristally (Ionic crystals), 53-55

TOPIC TAGS: strontium compound, sulfate, radioactivity effect, beta radiation, aqueous solution, solution kinetics, radiation damage, crystal lattice defect

ABSTRACT: The main purpose of the investigation was to analyze the influence of internally produced radiation on the structure-sensitive properties of crystals. The tests were made on $SrSO_4$ with specific activity 0, 0.8, 10, and 50 microcurie/g (in terms of S^{35}), dissolved in distilled water. The concentration of the dissolved salt was determined by two independent methods -- radiometry and electric conductivity. The results showed that introduction of S^{35} in the $SrSO_4$ changes the rate of dissolution of the salt. At first the dissolution rate increases rapidly with increasing activity, up to about 10 microcurie/g, after which it increases. The latter increase is due to the radioactive changes occurring in the crystal. The results are similar

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to those observed in other salts. They can be explained by assuming that the rate of the dissolution is affected not only by damage to the crystal lattice, which contributes a more rapid dissolution, but also by some process which delays the dissolution. One such factor may be the decrease in the number of crystal-lattice defects, and another may be the charging of the surface of the $SrSO_4$ as a result of the continuous beta decay of the S^{35}. It is thus concluded that the total number of defects due to self-irradiation does not remain constant in the solid, and this affects the variation in the rate of dissolution. The results also show that radiation-chemical changes in the solution does not influence the rate of dissolution of precipitates of $SrSO_4$. Orig. art. has: 1 figure.

SUB CODE: 20/ SUBM DATE: 00/ ORIG REF: 010 18/

Card 2/2

BESPALOVA, V. G. Cand Phys-Math Sci -- (diss) "Application of hydrointegrators for the solution of problems on diffusion of turbulent jets." Alma-Ata, 1959 17 pp with graphs (Kazakh State Univ im S. M. Kirov. Physics Faculty) (KL, 52-59, 115)

BESPALOVA, V.G.

10(2) PHASE I BOOK EXPLOITATION SOV/2271

Sovershchaniye po prikladnoy gazovoy dinamike. Alma-Ata, 1956

Trudy (Transactions of the Conference on Applied Gas Dynamics) Alma-Ata, Izd-vo AN Kazakhskoy SSR, 1959. 235 p. Errata slip inserted.

Sponsoring Agency: Kazakhskiy gosudarstvennyy universitet imeni S.M. Kirova.

Ed.: V.V. Aleksandriyskiy, Tech. Ed.: Z.P. Rorokina; Editorial Board: L.A. Vulis (Resp. Ed.), V.P. Kashkarov, T.P. Leont'yeva, and B.P. Ustimenko.

PURPOSE: This book should be of interest to scientists and engineers working on problems of applied gas dynamics and may be of use to students.

COVERAGE: This book presents reports and brief summaries of the discussions which took place at the Conference on Applied Gas Dynamics in Alma-Ata in October 1956. The conference was subdivided into three areas of applied gas dynamics: jet flows of fluids and gases, the aerodynamics of heating processes, and the discharge of a fluid. The practical value of the "Transactions of the Conference" consists in the development of theory, methods of technical calculation and methods for systematic measurement applied to heating, furnace, and other industrial processes for which, in most cases, aerodynamic phenomena are decisive factors.

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Session of October 25, 1956 (morning)

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AUTHOR: Bespalova, V.G.

TITLE: Using a Hydraulic Integrator for Investigating the Diffusion Laws of Free Jets

PERIODICAL: Vestnik Akademii nauk Kazakhskoy SSR, 1959, Nr 6, pp 47-52

ABSTRACT: The author explains the application of a hydraulic integrator for solving problems of the theory of turbulent jets. The article contains the principal results of the author's dissertation. The investigation was performed on a hydraulic integrator belonging to the Laboratoriya fizicheskikh osnov teplovykh protsessov Instituta energetiki AN KazSSR(Laboratory of Physical Principles of Thermal Processes of the Power Engineering Institute of the AS KazSSR). The integrator was built at the Ryazan' plant "SAM" and operates according to V.S. Luk'yanov's system. A photograph of this device is shown in Figure 1, while its functional diagram is shown in Figure 2. The device is based on the analogy of

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Poiseuille's law for a laminar flow of a viscous liquid in a capillary tube and Fourier's law for a heat flow. The integrator is designed for solving heat conductance equations, but it may also be used for solving problems, whose differential equations can be reduced to a form analogous to the heat conductance equation. For example, problems of the theories of gas and liquid diffusion, combustion and neutron diffusion were solved at the Kafedra obshchey fiziki (Department of General Physics) of the Kazakhskiy gosudarstvennyy universitet (Kazakh State University), according to L.A. Vulis [Ref 3] and A.A. Kostritsa [Ref 4]. The theory of the hydraulic integrator and its application to problems of the heat conductance theory were described by V.S. Luk'yanov [Ref 1], G.P. Ivantsov, K.I. Afanas'yeva and A.V. Romanova [Ref 2]. The aforementioned integrator was used for solving plane and axially-symmetric free flow problems. The results of solving the problem of the

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pulse flow density diffusion in a plane free jet flowing out of a slot of finite dimensions were compared to E. Förtmann's experimental data [Ref 7] for the basic section of the flow, and with experimental data obtained by the Power Engineering Institute for the flow close to the nozzle. The comparison of axial velocity drop curves, obtained by the integrator and by experiments, revealed a coincidence of results over the entire area of the flow. The problem of pulse flow density diffusion in an axially-symmetric flow was investigated on a hydrodynamic integrator, adapted for solving problems in cylindrical coordinates. The comparison of results was performed in the same manner as plane free jet. The experiments were performed by I.B. Palatnik of the Power Engineering Institute of the AS KazSSR. The u^2 values had to be extrapolated, since the hydrodynamic integrator for cylindrical coordinates does not produce this value directly. The comparison showed also a coincidence of

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results. The results of the aforementioned investigations are shown in graphs, Figures 3 - 6. The coincidence of results obtained by the integrator and by experiments indicates that the device may be used for investigating more complicated flows which cannot be analytically solved. Thus, the problem of the diffusion of a plane jet in a homogeneous flow was solved on a hydrodynamic integrator and the comparison of results with experimental data of Weinshtein, A.S., J.F. Osterle and W. Forstall [Ref 9] showed a coincidence of different values for m. The solution of the diffusion problem of a jet leaving a nozzle of finite dimensions, obtained by a hydraulic integrator, provides the possibility for studying the laws of burning of a flame cone, where all processes take place close to the nozzle opening. There are 1 photograph, 1 diagram, 2 graphs, 2 sets of graphs and 9 references, of which 6 are Soviet, 2 German and 1 English.

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Translation from: Referativnyy zhurnal, Metallurgiya, 1960, No. 10, p. 5, # 22404

AUTHOR: Bespalova, V.G.

TITLE: The Use of Hydrointegrators for the Solution of Jet Problems

PERIODICAL: Tr. Soveshchaniya po prikl. gaz. dinamike, 1956, Alma-Ata, AN KazSSR, 1959, pp. 115 - 122

TEXT: Solutions of problems were obtained on hydrodynamic and hydrostatic integrators, pertaining to an axisymmetrical jet, a flat jet, a flat periphery, by-flows and semi-bound jets.

B.M.

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

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BESPALOVA, V.G.

Solving some problems of hydrodynamics with the aid of hydraulic integrators. Izv.AN Kazakh.SSR Ser.energ. no.2:66-75 '60. (MIRA 13:7)
(Hydrodynamics)

BESPALOVA, V. G., VULIS, L. A., USTIMENKO, B.P. (Alma-Ata)

"Liquid-Flow Analogy in the Treatment of Problems Concerning the Propagation of Turbulent Jets."

report presented at the First All-Union Congress on Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb 1960.