Increasing the Gain of a Travelling-wave Tube in the Transient Regime

gain K depends on the magnitude and sign of dJ/dt . It is greater than the stationary value K_o when the derivative is positive and less when it is negative. The effect is independent of operating frequency but falls off with larger inputs. For an actual increase in collector current of only 20%, the gain may be temporarily increased by a factor of 6 . There are 3 figures.

ASSOCIATION: Issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete (Radiophysics Research Institute of Gor'kiy University)

SUBMITTED: September 20, 1958

Card 2/2

06488
SOV/141-58-4-4/26

AUTHORS: Averkov, S.I. and Ostrovskiy, L.A.

TITLE: The Propagation of Oscillations in Systems with Time-Dependent Parameters (Rasprostraneniye kolebaniy v sistemakh s parametrami, zavisyashchimi ot vremeni)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, 1958, Nr 4, pp 46-51 (USSR)

ABSTRACT: Previous studies of linear systems with variable parameters have been made by various workers (Ref 1-4). The physical basis here has been a quasi-stationary system whose dimensions are small compared with the wavelength of oscillation. Distributed systems have been considered by Rytov (Ref 5) but the validity of the approximations used have not been examined very closely. Some information on this latter point may be elicited by using Poynting's theorem for a system in which the permeability and permittivity depend on time and on the coordinates (Eq 1). The present paper considers the propagation of a plane electromagnetic

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the action of varying the properties of the medium does work upon the wave and increases its energy. The mean square value of power density is given by Eq (22) and frequency by Eq (23). The distance traversed by the wave-front in a time t is given by Eq (24). On the basis of experimental data on the rate at which the properties of a medium can be changed with time (Ref 6), it appears reasonable to plan an experiment at radio frequencies whereby the predicted change in power and frequency may be observed in practice. There are 6 references, 5 of which are Soviet and 1 English.

ASSOCIATION: Issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete (Radio-Physics Research Institute of Gor'kiy University)

SUBMITTED: 14th January 1958

05483

AUTHORS: Averkov, S.I. and Stepanov, N.S. SOV/141-2-2-8/22

TITLE: Wave Propagation in the System with a Travelling Parameter

PERIODICAL: Izvestiya vyashikh uchebnykh zavedeniy, Radiofizika, 1959, Vol 2, Nr 2, pp 203 - 212 (USSR)

ABSTRACT: An exact analysis of the wave propagation, even in comparatively simple systems with variable parameters, presents considerable mathematical difficulties (S.I. Averkov and Ostrovskiy, L.A. - Ref 4). Thus, for a long line having characteristic parameters L and C, which are functions of distance x and time t, the basic relationships can be written as Eqs (1), where V and I denote the voltage and the current in the line. If it is assumed that L/C = const., Eqs (1) can be written as:

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Wave Propagation in the System with a Travelling Parameter

$$\frac{\partial}{\partial x}(V + \rho I) = -\frac{\partial}{\partial t}\left[\sqrt{LC}\ (V + \rho I)\right]$$

$$\frac{\partial}{\partial x}(V - \rho I) = \frac{\partial}{\partial t}\left[\sqrt{LC}\ (V - \rho I)\right] \qquad (2)$$

where $\rho = \sqrt{L/C}$. In these equations it will be assumed that the variable is $\sqrt{LC} = n(x,t)$. This function is in the form of:

$$n = n(t - x/a) \qquad (4) .$$

By introducing the notation of Eqs (5), Eqs (1) or (2) can be written as Eqs (6). If $\eta = t - x/a$, the characteristic equations of the system are written as Eqs (7).

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Wave Propagation in the System with a Travelling Parameter

expressed by the product of two different functions. The instantaneous frequency in the line is given by:

$$\omega/\omega_o = \Phi_1(x, t) \qquad (22) .$$

Eqs (15) are employed to investigate a particular case, when the parameter n changes in accordance with

$$n(\eta) = n_o(1 + m \cos\Omega\eta) \qquad (25) .$$

Here, two cases are possible: for a non-synchronous wave, when $b^2 > c^2$ (see Eq 26), it is found that the function Φ is given by the second equation on p 208, where φ is defined by Eq (27). The dependence of Φ on x is illustrated in Figure 1. For a synchronous wave ($b^2 < c^2$), the function Φ is given by the first equation on p 209, where φ is defined by Eq (29). When $b = 0$, Φ is given by Eq (31) and V is expressed by Eq (33).

05483
SOV/141-2-2-8/22

Wave Propagation in the System with a Travelling Parameter

SUBMITTED: December 9, 1958

Card 6/6

24.3300 S/141/59/002/05/004/026
E192/E382

AUTHORS: Averkov, S.I. and Ryadov, V.Ya.

TITLE: Indication of Infra-red Radiation By Means of Thermal Signal-frequency Transducers

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, Vol 2, Nr 5, pp 697 - 702 (USSR)

ABSTRACT: The transducers considered operate at wavelengths of the order of 10 μ and consist of a blackened film which is heated by the measured radiation on one side; the secondary radiation of the film, which issues from its other side, is detected by a sensitive photoresistor. The problem consists of determining the threshold sensitivity of such a transducer. The block schematic of the system is shown in Figure 1. A signal of frequency ω is applied to the input 1 of the system. It passes through a high-frequency filter 2 and enters into the chamber 3, which is filled with a substance which absorbs the energy of the electromagnetic radiation and converts it into heat. The substance of the chamber is heated to a temperature T and radiates a signal of

S/141/59/002/05/004/026
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Indication of Infra-red Radiation by Means of Thermal Signal-frequency Transducers

If the chamber is cooled to a temperature T'_o, Eq (1) can be written as Eq (2). Since the temperature difference $\Delta T = T - T'_o$ is small, Eq (2) can also be written as Eq (3), where $M(T'_o)$ is defined by Eq (4). The time constant of the thermal indicator is defined by Eq (5), where c_o is the overall thermal capacity of the substance. Consequently, Eq (3) can be written as Eq (6). The signal-to-noise ratio at the output of the filter 4 is defined by Eq (8). If the modulation method of the reception of weak signal is employed, the signal-to-noise ratio can be expressed by Eq (9), where G is the noise factor and N is the so-called modulation gain which is defined by Eq (10). The symbol Δf in Eq (10) represents the bandwidth of the filter 4 and ΔF is the bandwidth of the low-frequency filter of the indicator 6. Assuming that ΔT has a minimum value when Eq (9) is equal to unity, the minimum distinguishable

AUTHORS: Averkov, S.I. and Stepanov, N.S. S/141/60/003/02/025/025
E073/E314

TITLE: Letter to the Editor

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, 1960, Vol 3, Nr 2, p 344 (USSR)

ABSTRACT: The above authors point out an error in their article* published in an earlier issue of this journal (Radiofizika, Vol 1, Nr 5-6, p 184, 1958). This error was discovered by G.G. Solodar' (Moscow State University) who repeated the experiment referred to by the authors.
There is 1 Soviet reference.

SUBMITTED: February 7, 1960

ASSOCIATION: (Radiophysics Research Institute of Gor'kiy University)

*[Entitled: Increasing the Gain of a Travelling-wave Tube in the Transient Regime]

Card 1/1

86856

S/141/60/003/005/011/026
E192/E382

9,1300 (also 1006)

AUTHORS: Averkov, S.I., and Khronopulo, Yu.G.

TITLE: Electromagnetic Waves in Lossy Systems with Time-dependent Parameters

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, 1960, Vol. 3, No. 5, pp. 818 - 825

TEXT: It is assumed that the permeability and permittivity μ and ε of the medium are variable and that the medium does not contain any charges or currents. The Maxwell equations for the system can be written as:

$$\text{(I)}\ \operatorname{rot} \underline{B} = \mu(t) \frac{\partial D}{\partial t}\ ; \quad \text{(III)}\ \operatorname{div} \underline{B} = 0\ ;$$

$$\text{(II)}\ \operatorname{rot} \underline{D} = -\varepsilon(t) \frac{\partial B}{\partial t} \quad \text{(IV)}\ \operatorname{div} D = 0$$

where the vectors B and D and the magnetic- and electric-field vectors H and E are related by:

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E192/E382

Electromagnetic Waves in Lossy Systems with Time-dependent Parameters

(V) $\underline{B} = \mu(t)\underline{H}$, (VI) $\underline{D} = \varepsilon(t)\underline{E}$.

On the waves of an ideally conducting metal wall, the vectors $\underline{B}$ and $\underline{D}$ satisfy the following boundary conditions:

(VII) $\underline{B}_n = 0$, (VIII) $\underline{D}_{tan} = 0$.

The solution of the above equations is based on the method of separating the variables. Thus, it is assumed that $\underline{B}$ and $\underline{D}$ can be expressed by Eqs. (1) and (2) where f and θ are certain non-dimensional functions of time, while the vectors $\underline{B}_a$ and $\underline{D}_a$ are dependent on coordinates only. From the above equations the relationship between $\underline{B}_a$ and $\underline{D}_a$ is expressed by Eqs. (3) and (4). On the other hand, the relationship between θ and f is expressed by Eqs. (5) and (6),

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where ω is a certain constant and μ_o and η_o are the constants of free space. The vectors $\underline{B}_a$ and $\underline{D}_a$ satisfy the Maxwell equations and the boundary conditions with respect to monochromatic oscillations of frequency ω. In particular, it follows that $\underline{B}_a$ obeys :

$$\Delta \underline{B}_a + \mu_o \varepsilon_o \omega^2 \underline{B}_a = 0 \qquad (7)$$

where k is the wave number (defined by Eq. 8) and ω is given by Eq. (9), where c is the velocity of light in vacuum. The expression for Θ can also be written as Eq. (10) so that the final expression for the function $f(t)$ is in the form of Eq. (11); a similar equation for $\Theta(t)$ is in the form of Eq. (12). The energy carried by a wave is expressed by the usual Poynting vector, which is given by

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Electromagnetic Waves in Lossy Systems with Time-dependent Parameters

Eq. (13). The above formulae are used in the investigation of the propagation of waves in a simple dispersive medium, i.e. a waveguide filled with a medium whose permeability is a function of time and ε is constant. Eq. (1) can now be written as Eq. (15), where $c = k^2/\varepsilon$. It is assumed that $\mu(t)$ varies in accordance with:

$$\mu(t) = (\alpha - \beta t)^2 \qquad (16)$$

where α and β are constants. Consequently, depending on the magnitude of the quantity R, which is expressed by Eq. (17), the solutions for f are in the form of Eqs. (18), (19) and (20), where Q and F are constants. The case represented by the Eqs. (18) is analysed in some detail. It is assumed that a $TE_{m,n}$-wave propagates in the waveguide.

The components of the vectors $\underline{B}_a$ and $\underline{D}_a$ are given by

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Electromagnetic Waves in Lossy Systems with Time-dependent Parameters

Eqn. (21). Thus, the component B_z of the vector $\underline{B}$ is given by Eq. (22). It is seen that this depends on three arbitrary constants h, Q and Φ and two integer variables n and m. If it is assumed that for times less than zero $\mu(t)$ = const, the B_z component of the vector $\underline{B}$ can be expressed by Eq. (23). By considering the initial conditions at $t = 0$, it is possible to determine the constants of Eq. (22). The final expression for B_z is in the form of Eq. (29). From this it is seen that the field in the waveguide can be regarded as a superposition of two monochromatic waves which propagate in the forward and reverse directions with the phase velocity defined by Eq. (30), where $\omega = \dot{\theta}$. Under certain conditions, expressions for f and $\dot{\theta}$ can be in the form of Eqs. (27a) and (28a). In this case, the components of the vectors $\underline{H}$ and $\underline{E}$ are given by

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S/141/60/003/005/011/026
E192/E382

Electromagnetic Waves in Lossy Systems with Time-dependent Parameters

Eqs. (33) and (34). In this case, there exists only one nonmonochromatic wave whose amplitude is time-dependent. It can easily be shown that the above approximate and exact expressions for the field vectors can be generalised and extended to the propagation of several monochromatic waves. In particular, if there exists a modulated three-harmonic wave, the component E_y is expressed by Eq. (35), where m is the modulation index and Ω is the modulation frequency. Fig. 1 shows the vector diagram of the three components of the modulated wave expressed by Eq. (35). By examining Eq. (35) it is concluded that there exist a number of cross-sections in the waveguide where either frequency-modulation or amplitude-modulation is predominant. It is possible to determine the spatial period of this

86856

S/141/60/003/005/011/026
E192/E382

Electromagnetic Waves in Lossy Systems with Time-dependent Parameters

phenomenon. The authors express their gratitude to A.V. Gaponov and N.G. Denisov for useful discussions. There are 1 figure and 9 references: 2 English and 7 Soviet.

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

SUBMITTED: March 16, 1960

Card 7/7

S/120/63/000/001/025/072
E032/E314

AUTHORS: Averkov, S.I., Anikin, V.I., Ryadov, V.Ya. and Furashov, N.I.

TITLE: Vacuum spectrometer for the far infrared

PERIODICAL: Pribory i tekhnika eksperimenta, no. 1, 1963, 108 - 112

TEXT: A simple vacuum spectrometer with metal mirrors is described. It is suitable for the range 55 - 1200 μ and can be used for determination of wavelengths, optical constants of various materials, the emissivity of sources, the sensitivity of detectors, etc. It is similar to that described by Yoshinaga et al (J. Opt. Soc. America, 1958, 48, 315). The optical system is shown in Fig. 2, in which И is the source, М is the modulator, Ш$_1$ and Ш$_2$ are slits, Пр is the receiver. The mirrors З$_1$ and З$_9$ are spherical (D = 30 cm, F = 20 cm); З$_4$ is a spherical mirror (D = 20 cm, F = 15 cm) and З$_5$, З$_6$ are also spherical (D = 31 cm, F = 60 cm. З$_2$, З$_3$, З$_7$ and З$_8$ are

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Vacuum spectrometer ....

plane mirrors. A mercury quartz lamp, ПРК-4 (PRK-4) is used as the source and the receiver is an optical acoustic detector, ОАП-2 (OAP-2), with a working area of 7 x 7 mm^2 and a 1 mm thick quartz window. The modulator is a rotating disc with NaCl sectors. The modulation frequency is 9.6 c.p.s. The bandwidth of the tuned amplifier is $\Delta F_{0.5}$ = 3.5 c.p.s. The resolution at 95, 125 and 127 μ is quoted as: 1.1, 0.8 and 0.76 cm^{-1}, respectively. There are 3 figures and 1 table.

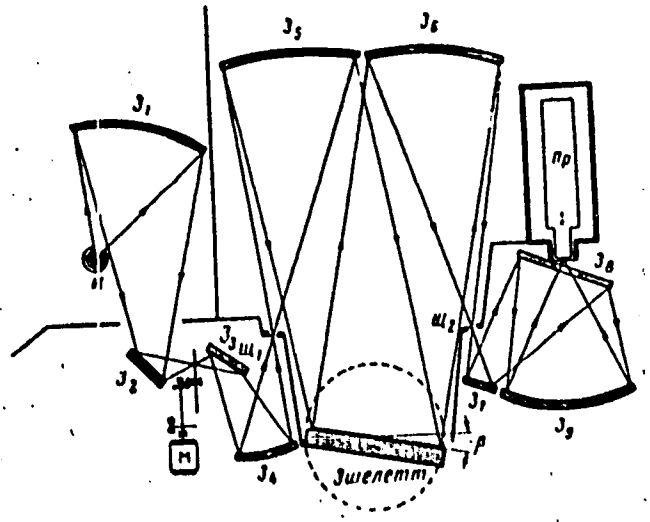
ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut GGU (Scientific Research Radiophysics Institute of GGU)

SUBMITTED: April 11, 1962

S/120/63/000/001/025/073
E032/E314

Vacuum spectrometer ....

Fig. 2:



Card 3/3

AVERKOV, S.I.; ANIKIN, V.I.; RYADOV, V.Ya.; FURASHOV, N.I.

Astronomical station for observations in the far infrared spectral region. Astron. zhur. 41 no.3:542-545 My-Je '64. (MIRA 17:6)

L 8737-65 EWT(1)/EWG(v)/EEC-4/EEC(t) Pe-5/Pq-4/Pae-2 RAEM(1)/ASD(a)-5/ESD(ge)/SSD/AFWL/ASD(f)/AEDC(b)/AFETR/APGC(b)/ESD(t) GS

ACCESSION NR: AP4040848 S/0033/64/041/003/0542/0546

AUTHOR: Avorkov, S. I.; Aplkin, V.I.; Ryadov, V. Ya.; Furasov, N.I. B

TITLE: An astronomical station for observations in the far infrared region of the spectrum

SOURCE: Astronomicheskiy zhurnal, v. 41, no. 3, 1964, 542-546

TOPIC TAGS: astronomy, astronomical instrument, solar radiation, far infrared spectral region, infrared spectrum, spectroscopy

ABSTRACT: An astronomical station for observations in the far infrared region of the spectrum is described; this station was used on the Pamir expedition of NIRFI (Radiophysics Scientific Research Institute) in 1962. The general appearance of the station is shown in Fig. 1 of the Enclosure. Its principal components are a parallactic mounting

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ACCESSION NR: AP4040848

parallel rays. The monochromator is used to separate a narrow band of signal frequencies from the continuous spectrum of the source. An echelette grating is used as the dispersing element. Scanning of the spectrum is accomplished by turning the echelette, using a synchronous motor. The weak signal detected by the optical system is transmitted to the receiving-recording apparatus. The radiation indicator used in this component is an opticoacoustical detector with a quartz window and a threshold sensitivity of ~5 x 10^{-10}w. Full details concerning the optical system are supplied in the text. Preliminary tests were made under laboratory conditions in the spectral range 140-1400 μ. Field tests in the Pamirs at an elevation of 3,800 m were in the spectral region 300-1400 μ, and the spectrograms obtained at this time were used in determining the windows of relative atmospheric transparency in this range. Fig. 3 of the Enclosure shows the record of signals from the sun in the region 600-1400 μ. The minima of the curve correspond to the absorption lines of water vapor in the atmosphere (the upper part of the diagram shows their theoretical spectral distribution). "In conclusion, the authors thank M. T. Grekhova for her interest and support during development of the station. The authors also thank I. V. Monalov and O. A. Slavolyubov for their participation in the design of the station, B. A. Sverdlov for

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L 8737-65
ACCESSION NR: AP4040848

assistance in adjustment of the apparatus and G. A. Sharonov, who participated in the [illegible] and implementation of the observations. Orig. art. has 3 figures.

ASSOCIATION: none

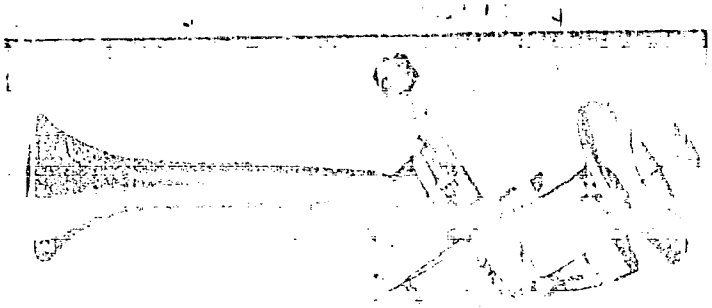
SUBMITTED: 26Jul63 ENCL: 03 SUB CODE: AA

NO REF SOV: 004 OTHER: 001

Card 3/3

L 8737-65
ACCESSION NR: AP4040843

ENCLOSURE: 01



Card 4/6

L 8737-65
ACCESSION NR: AP4040840

ENCLOSURE: 02

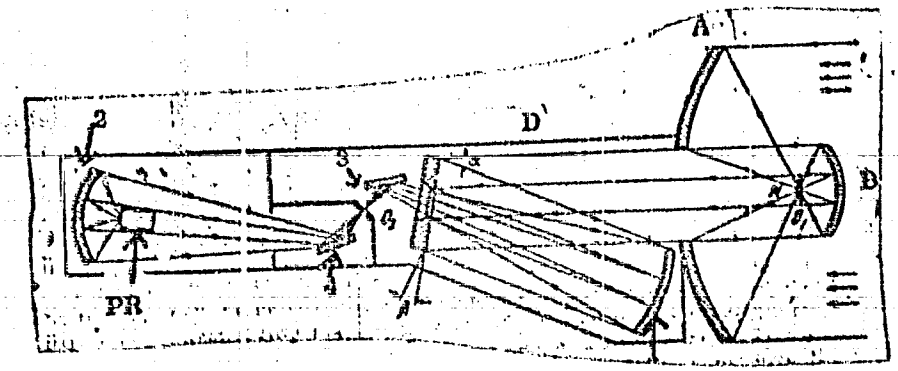


Fig. 2.

Fig. 2. Schematic representation of the optical system of the astronomical station: A & B - confocal parabolic mirrors; M - monochromator; 1 & 2 - parabolic mirrors; 3 & 4 - mirrors; PR - prism.

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L 8737-65
ACCESSION NR: AP4040846

ENCLOSURE: 01

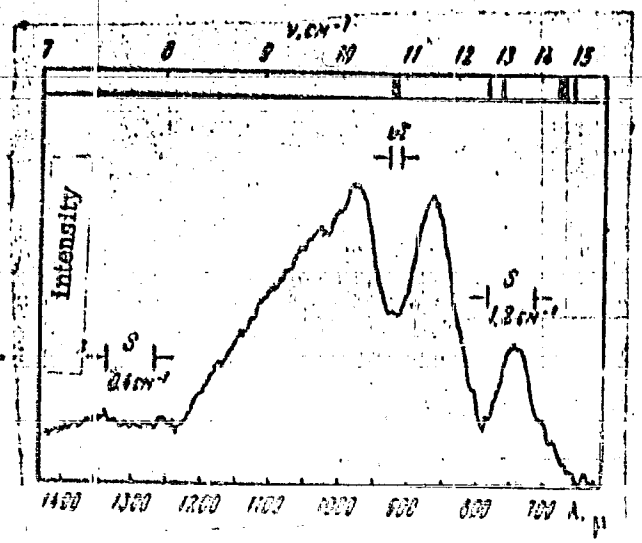
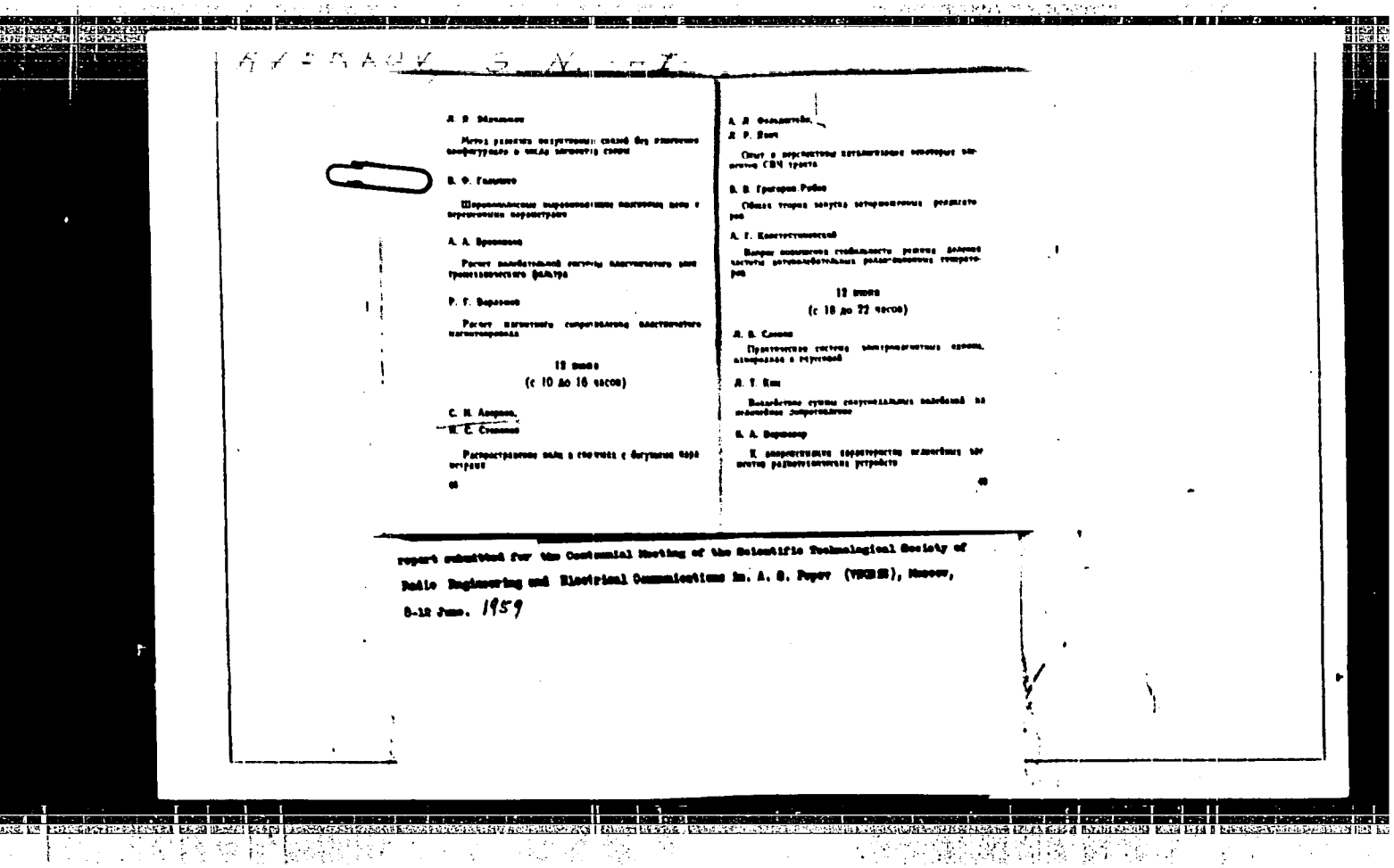


Fig. 3.
Spectrum of signals from the sun in the range 600–1400 μ.

Card 6/6

AVERKOV, S.K.; ANIKIN, V.I; BRAVO-ZHIVOTOVSKIY, D.M.; GAPONOV, A.V.; GRUKHOVA, M.T.; YERGAKOV, V.S.; LOPYREV, V.A.; MILLER, M.A.; PLYAGIN, V.A.

Diode oscillator noise source in the three-centimeter band. Radiotekh. i elektron 1 no.6:758-771 Je '56. (MLRA 10:I)
(Oscillators, Electron-tube--Noise)
(Wave guides)



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

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Deformations of drainage canals in the Meshchera Lowland, their nature and causes. Vest. Mosk. un. Ser. biol., pochv., geol., geog. 13 no. 1:151-161 '58. (MIRA 11:7)

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(Meshchera--Canals)

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Deformation of sandy slopes of drainage canals caused by filtaration pressure. Vest. Mosk. un. Ser. biol., pochv., geol., geog. 13 no.2:201-210 '58. (MIRA 11:9)

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Formation of the secondary structure of subgrade soil. Vest. TSNII MPS 19 no.8:49-52 '60. (MIRA 13:12)
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(Railroads--Maintenance and repair)
(Soil mechanics--Research)

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Studying the effect of chemical additives on soil heaving. Vest. TSNIIMPS 21 no.7:52-55 '62. (MIRA 15:12)
(Soil stabilization)

AVERSHATYAN, T.A.

Lamprophyres in the Megri pluton. Izv. AN Arm. SSR. Geol. i geog. nauki 14 no.2:3-19 '60. (MIRA 14:3)

1. Institut geologicheskikh nauk AN Armyanskoy SSR.
(Megri District--Lamphrophyres)

[redacted], I. N.

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Knizhnaya letopis'
No 21, 1956. Moscow.

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Problems of the separation process by mechanical classifiers.
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(Separators(Machines)) (Ore dressing)

AVERSHIN, I.N.

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Obog.rud 3 no.4:21-22 '58. (MIRA 12:2)
(Ore dressing)

AVERSHIN, S. G.

AVERSHIN, S.G.; POLYAK, Z.I., redaktor.

[Shifting of rocks in underground mining] Sdvizhenie gornykh porod pri podzemnykh razrabotkakh. Moskva, Ugletekhizdat, 1947. 244 p.
(Subsidences (Earth movements)) (MLRA 7:7)

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SO: U-411, 17 July 53, (Letopis 'Zhurnal 'nykh Statey, No. 20, 1949).

AVERSHIN, S. G., PROF

TA 40/49T67

USSR/Mines Nov 48
Coal
Mining Methods

"Certain Problems of the Theory of Rock Dislocation," Prof S. G. Avershin, Dr Tech Sci, Laureate of Stalin Prize, 3½ pp

"Gor Zhur" No 11

Discusses problems on coal formations, connected with safe depth of shaft. Data reveals surface deformation related to geological and mine operating conditions. Formula discloses that

40/49T67

USSR/Mines (Contd) Nov 48

the horizontal deformations decrease much sooner than the settling, as depth of shaft increases. Gives two tables and graph of observation.

40/49T67

———, S. G.

Averchi[illegible], S. G. "On the objectives of the All-Union Scientific Research Institute for Surveying", Trudy Vsesoyuz. nauch.-issled. marksheyder, in-ta VNIMI, Vol. 19, 1946, p. 3-7.

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The extent of shifting in rock formations Leningrad, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1950. 57 p. 52-19089

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Earth pressure

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

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[redacted], G. A.

Earth [redacted]

Role of Russian scientists in studying the displacement and pressure of rocks. /Trudy/ VNII, 22, 1950.

9. Monthly List of Russian Accessions, Library of Congress, October 1952, Uncl.

993. EARTH SHOCKS IN KIZEL BASIN MINES. Averchin, S.O. and Grigor'ev, S.E. (Ugol(Coal), June 1952, 1-10).

This phenomenon resembles explosions in the coal at depths of 200 m. and more. Suggestions are made for preventing it. (L).

AVERSHIN, S.G.

AVERSHIN, S.G., professor, doktor tekhnicheskikh nauk.

The greatest values for elements of a displacement syncline. Trudy VNIMI no.26:3-20 '52. (MLRA 8:3)
(Subsidences (Earth movements))

AVERSHIN, S. G., Prof.

Problems concerning the trend in the examination of rock displacements. Ugol' 27 no. 9, 1952.

SO: MLRA. December 1952.

AVERSHIN, [illegible]

OMEL'CHENKO, A.N., kandidat tekhnicheskikh nauk, redaktor; AVERSHIN, S.G., doktor tekhnicheskikh nauk, professor, redaktor; KAZAKOVSKIY, D.A., doktor tekhnicheskikh nauk, professor, redaktor; KUZNETSOV, G.N., kandidat tekhnicheskikh nauk, redaktor; NIKIFOROV, B.I., doktor tekhnicheskikh nauk, professor, redaktor; RODKEVICH, D.V., kandidat tekhnicheskikh nauk, redaktor; TIMOFEYEV, B.I., gornyy inzhener, redaktor; SLAVOROSOV, A.Kh., redaktor; SHPAK, Ye.G., tekhnicheskiy redaktor

[Studies in surveying;] Issledovaniia po voprosam markscheiderskogo dela. Moskva, Ugletekhizdat. No. 27. 1953. 94 p. [Microfilm]. (MLRA 8:7)

1. Leningrad. Vsesoyuznyy nauchno-issledovatel'skiy markscheyderskiy institut.
(Mine surveying)

AVERKHIN, S. G.

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Gornyye raboty pod sooruzheniyami i vodoyemami (Mining under structures and bodies of water) Moskva, Ugletekhizdat, 1954.
322 p. illus., diagrs., tables.
Bibliographical footnotes.

AVERSHIN, Stepan Gavrilovich; PANOV, A.D., redaktor; SLAVOROSOV, A.Kh. [illegible], Ye.I., tekhnicheskiy redaktor.

[Rock bursts] Gornye udary. Moskva, Ugletekhizdat, 1955. 233 p. (Mine accidents) (MLRA 9:1)

BUDRYK, Vitol'd; LITVINISHIN, Yezhi; KNOTTE, Stanislav; SALUSTOVICH, Antoni; SHKLYARSKIY, M.F., inzhener [Translator]; AVERSHIN, S.G., professor, redaktor; SLAVOROSOV, A.Kh., redaktor; PROZOROVSKAYA, V.L., tekhnicheskiy redaktor.

[Problems in calculating surface displacements caused by mine work. Translated from the Polish] Voprosy rascheta sdvizheniĭ poverkhnosti pod vliianiem gornykh rarrabotok. Perevod s pol'skogo M.F.Shkliarskogo, pod red.S.G.Avershina. Moskva, Gos.nauchno-tekhnicheskoe izdvo lit-ry po ugol'noi promyshl., 1956.63 p. (MLRA 9:5)
(Poland--Earth movements)

AVERSHIN, S.G.

ABRAMOV, S.K., kand.tekhn.nauk; AVERSHIN, S.G., prof., doktor tekhn.nauk; AMMOSOV, I.I., doktor geol.-min.nauk; ANDRIYEVSKIY, V.D., inzh.; ANTROPOV, A.N., inzh.; AFANAS'YEV, B.L., inzh.; BERGMAN, Ya.V., inzh.; BLOKHA, Ye.Ye., inzh.; BOGACHEVA, Ye.N., inzh.; BUKRINSKIY, V.A., kand.tekhn.nauk; VASIL'YEV, P.V., doktor geol.-min.nauk; VINOGRADOV, B.G., inzh.; GOLUBEV, S.A., inzh.; GORDIYENKO, P.D., inzh.; GUSEV, N.A., kand.tekhn.nauk; DOROKHIN, I.V., kand.geol.-min.nauk; KALMYKOV, G.S., inzh.; KASATOCHKIN, V.I., doktor khim.nauk; KOROLEV, I.V., inzh.; KOSTLIVTSEV, A.A., inzh.; KRATKOVSKIY, L.F., inzh.; KRASHENINNIKOV, G.F., prof. doktor geol.-min.nauk; KRIKUNOV, L.A., inzh.; LEVIT, D.Ye., inzh.; LISITSA, I.G., kand.tekhn.nauk; LUSHNIKOV, V.A., inzh.; MATVEYEV, A.K., dots., kand.geol.-min.nauk; MEPURISHVILI, G.Ye., inzh.; MIRONOV, K.V., inzh.; MOLCHANOV, I.I., inzh.; NAUMOVA, S.N., starshiy nauchnyy sotrudnik; NEKIPELOV, V.Ye., inzh.; PAVLOV, F.F., doktor tekhn.nauk; PANYUKOV, P.N., doktor geol.-min.nauk; POPOV, V.S., inzh.; PYATLIN, M.P., kand.tekhn. nauk; RASHKOVSKIY, Ye.N., inzh.; ROMANOV, V.A., prof., doktor tekhn. nauk; RYZHOV, P.A., prof., doktor tekhn.nauk; SELYAKITSKIY, G.A., inzh.; SPERANSKIY, M.A., inzh.; TERENT'YEV, Ye.V., inzh.; TITOV, N.G., doktor khim.nauk; GOKAREV, I.P., inzh.; TROYANSKIY, S.V., prof., doktor geol.-min.nauk; FEDOROV, P.D., dots., kand.tekhn.nauk; FEDOROV, V.S., inzh. [deceased]; KHOMENTOVSKIY, A.S., prof., doktor geol.-min.nauk; TROYANOV-SKIY, S.V., otvetstvennyy red.; TERPIGOREV, A.M., red.; KRIKUNOV, L.A., red.; KUZNETSOV, I.A., red.; MIRONOV, K.V., red.; AVERSHIN, S.G., red.; BURTSEV, M.P., red.; VASIL'YEV, P.V., red.; MOLCHANOV, I.I., red.; RYZHOV, P.A., red.; BALANDIN, V.V., inzh., red.; BLOKH, I.M., kand. tekhn.nauk, red.; BUKRINSKIY, V.A., kand.tekhn.nauk, red.; VOLKOV, K.Yu., inzh., red.; VOROB'YEV, A.A., inzh., red.; ZVONAREV, K.A., prof. doktor tekhn.nauk, red.

(Continued on next card)

ABRAMOV, S.K.--- (continued) Card 2.

ZDANOVICH, V.G., prof.,doktor tekhn.nauk,red.; IVANOV, G.A., doktor geol.-min.nauk, red.; KARAVAYEV, N.M., red.; KOROTKOV, G.V., kand.geol.-min.nauk, red.; KOROTKOV, M.V., kand.tekhn.nauk, red.; MAKKAVEYEV, A.A., doktor geol.-min.nauk, red.; OMEL'CHENKO, A.N.,kand.tekhn.nauk,red.; SEMDERZON, E.M.,kand.geol.-min.nauk, red.; USHAKOV, I.N., dots., kand. tekhn.nauk, red.; YABLOKOV, V.S., kand.geol.-min.nauk,red.; KOROLEVA, T.I., red.izd-va; KASHAYEVA, Z.I., red.izd-va; PROZOROVSKAYA, F.L., tekhn.red.; NADEINSKAYA, A.A., tekhn.red.

[Mining; an encyclopedia handbook] Gornoe delo; entsiklopedicheskii spravochnik. Glav. red. A.M.Terpigorev. Moskva, Gos.nauchno-tekhn. izd-vo lit-ry po ugol'noi promyshl. Vol.2. [Geology of coal deposits and surveying] Geologiia ugol'nykh mestorozhdenii i marksheiderskoe delo. Redkolegiia toma S.V.Troianskiy. 1957. 646 p. (MIRA 11:5)

1. Chlen-korrespondent AN SSSR (for Karavayev)
(Coal geology--Dictionaries)

AVERSHIN, S.G., doktor tekhnicheskikh nauk.

Rock bumps and their prevention. Bezop. truda v prom. 1 no.1:11-14 Ja '57. (MLRA 10:4)
(Mine accidents)

AVERSHIN, S.G., prof., dokt.tekhn.nauk; ANAN'IN, G.P., dotsent, kand.tekhn. nauk; BARANOV, A.I., dotsent, inzh.; BERLIN, A.Ye., inzh.; BOCHKAREV, V.G., kand.tekhn.nauk; BUTKEVICH, R.V., kand.tekhn.nauk; VESELOVSKIY, V.S., prof.,doktor tekhn.nauk; VESKOV, M.I., kand. tekhn.nauk; VOL'KENAU, A.V., kand.tekhn.nauk; GAKKAVI, S.M., kand.tekhn.nauk; GORBACHEV, T.F.; DAVIDYANTS, V.T., kand.tekhn.nauk; DMITRIYEV, M.P., kand.tekhn.nauk; DOBROVOL'SKIY, V.V., kand.tekhn.nauk; DUKALOV, M.F., kand.tekhn.nauk; ZAYTSEV, N.A.; ZARANKIN, P.S., inzh.; ZVYAGIN, P.Z., dotsent, kand.tekhn.nauk; IL'SHTEYN, A.M., kand.tekhn. nauk; KILYACHKOV, A.P., dotsent, kand.tekhn.nauk; KIRICHENKO, I.P., inzh.; KRUPENNIKOV, G.A., kand.tekhn.nauk; KUZNETSOV, S.T., kand. tekhn.nauk; KUCHERSKIY, L.V., kand.tekhn.nauk; LINDENAU, N.I., inzh.; LIPKOVICH, dotsent, kand.tekhn.nauk; LOKSHIN, B.S., kand.tekhn.nauk; MURATOV, M.L., dotsent, kand.tekhn.nauk; MUCHNIK, V.S., prof., doktor tekhn.nauk; NAYDYSH, A.M., dotsent, kand.tekhn.nauk; NEKRA-SOVSKIY, Ya.E., prof., doktor tekhn.nauk; NEKHAYEV, G.A., inzh.; NUROK, G.A., prof., doktor tekhn.nauk; OVINOV, M.I., inzh.; PORTNOV, A.A., inzh.; PROSKURIN, V.V., dotsent, kand.tekhn.nauk; RUDNEV, B.A., inzh.; SAPITSKIY, K.F., kand.tekhn.nauk; SELETSKIY, R.A., dotsent, kand.tekhn.nauk; SEMENOV, A.P., kand.tekhn.nauk; SKAFA, P.V., inzh.; SONIN, S.D., prof.; SUDOPLATOV, A.P., prof., doktor tekhn.nauk; TIMOSHEVICH, V.A., inzh.; FURMAN, A.A., inzh.; CHUMAK, N.A.; SHAKHMEYSTER, L.G., dotsent, kand.tekhn.nauk; TERPIGOREV, A.M., glavnyy red.; LOZNEVA, A.A., red.; NAUMKIN, I.F., red.; OSTROVSKIY, S.B., red.; PANOV, A.D., red.; STUGAREV, A.S., red.; SHELKOV, A.A.,

(Continued on next card)

AVERSHIN, S.G.---(continued) Card 2.
red.; ARKHANGEL'SKIY, A.S., kand.tekhn.nauk, red.; BEZNIKOV, G.A., inzh., red.; MELSHIN, M.I., red.izd-va; KACHALKINA, Z.I., red. izd-va; PROZOROVSKAYA, V.L., tekhn.red.; NADEINSKAYA, A.A., tekhn.red.

[Mining; an encyclopedic handbook] Gornoe delo; entsiklopedicheskii spravochnik. Glav. red. A.M. Terpigorev. Chleny glav.red.: F.A. Barabanov i dr. Vol.5 [Underground coal mining] Razrabotka ugol'nykh mestorozhdenii podzemnym sposobom. Moskva, Gos. nauchno-tekhn.izd-vo lit-ry po ugol'noi promyshl. 1958. 447 p. (MIRA 12:2)

1. Chlen-korrespondent Akademii nauk SSSR (for Gorbachev, Chinakal).
2. Chlen-korrespondent Akademii nauk USSR (for Zaytsev).
(Coal mines and mining)

AVERSHIN, Stepan G., (Leningrad)

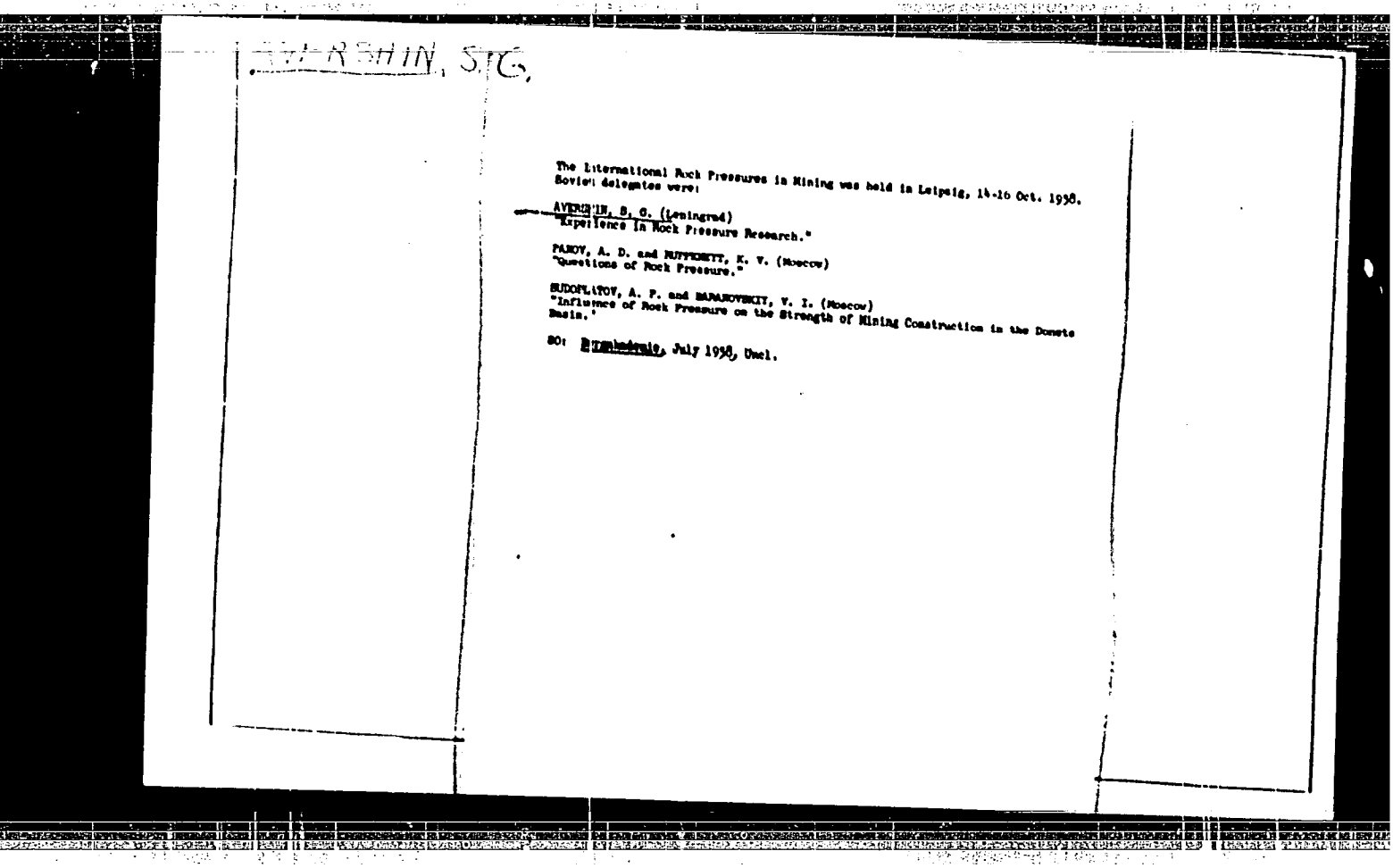
"Empirical Data from Rock Pressure Research."

paper submitted at Intl. Cong. on Rock Pressures in Mining, Leipzig, GDR, 14-16 Oct 58.

AVERSHIN, S.G., prof., doktor tekhn. nauk, red.; BLOKHA, Ye.Ye., gornyy inzh., red.; BUTKEVICH, T.V., gornyy inzh., red.; KRIKUNOV, L.A., gornyy inzh., red.; LISHUTIN, B.G., gornyy inzh., red.; OGLOBLIN, D.N., prof., doktor tekhn. nauk, red.; OMEL'CHENKO, A.N., kand. tekhn. nauk, red.; RYZHOV, P.A., prof., doktor tekhn. nauk.; GLAZENAP, K.K., inzh., red.; KONSTANTINOVA, L.F., inzh., red.; NIKITINA, M.M., inzh., red.; NOVOSELOVA, Yu. A., inzh., red.; SHUL'GO, Ye. I., inzh., red.; YAKOVLEV, M.G., inzh., red.; RASHKOVSKIY, Ya.Z., inzh., red.; STEL'MAKH, A.N., red. izd-va.; BERLOV, A.P., tekhn. red.; NADEINSKAYA, A.A., tekhn. red.

[Transactions of the All-Union Scientific and Technical Conference on Mine Surveying July 17-23, 1956] Trudy vsesoiuznogo nauchno-tekhnicheskogo soveshchania po marksheiderskomu delu 17-23 iulia 1956 g. Moskva, Ugletekhizdat, 1958. 743 p. (MIRA 11:12)

1. Vsesoyuznoye nauchno-tekhnicheskoye soveshchaniye po markshseyderskomu delu. 1956.
(Mine surveying)



AVERSHIN, S.G.

The International Rock Pressures in Mining was held in Leipzig, 14-16 Oct. 1958. Soviet delegates were:

AVERSHIN, S. G. (Leningrad)
"Experience in Rock Pressure Research."

FAYOV, A. D. and RUTKEVITT, K. V. (Moscow)
"Questions of Rock Pressure."

RUDOPLITOV, A. P. and BARANOVSKIY, V. I. (Moscow)
"Influence of Rock Pressure on the Strength of Mining Construction in the Donets Basin."

SO: [redacted], July 1958, Unel.

AUTHOR: Solomonov, M. SOV/24-58-4-38/39

TITLE: Combating Sudden Ejections of Coal and Gas From Coal Mines (Bor'ba s vnezapnymi vybrosami uglya i gaza v ugol'nykh shakhtakh) (Conference at the Institute of Mining of the Ac.Sc. USSR) (Soveshchaniye v Institute gornogo dela Akademii nauk SSSR)

PERIODICAL: Izvestiya Akademii Nauk, SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, Nr 4, pp 155 - 156 (USSR)

ABSTRACT: On February 17 - 21, a conference was held at the Institut gornogo dela Akademii nauk SSSR (Mining Institute of the Ac.Sc.USSR) on the results and prospects of research work on combating sudden ejections of coal and gas and coal explosions in mines. Members of the Central Commission for combating sudden ejections of coal and gas, representatives of scientific research and project institutes and of higher teaching establishments participated in the conference. After a brief opening speech by Academician A.A. Skochinskiy, the following papers were read at the conference: "Investigation of the Conditions in the Field of Application of Local Methods of Preventing

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Sudden Ejections of Coal and Gas in preparatory workings and in drawing (V.V. Khodot); "Development of a Combination of Measures for Safe Mining of Coal in Stopes in Unprotected Zones of Seams Which are Dangerous From the Point of View of Sudden Ejections of Coal and Gas" (K.N. Krichevskiy); "Finding a Safe and Productive System of Working Individual Steeply Sloping Seams Which Have an Inclination to Develop Sudden Ejections of Coal and Gas" (B.S. Lokshin); "Finding an Effective System of Working Thin Seams for the Purpose of Utilising Them as Protective Seams" (B.S. Lokshin); "System of Working of the "Pugachevka" Mine of the im. Artem Trust of Dzerzhinskugol' ([illegible]); "System of Working Individual Seams of the Central Donbass region Where There is a Danger of Sudden Ejections of Coal and Gas (D.P. Borisov); "Safe and Effective Methods of Working Coal Seams of the Yegorshinskiy deposits Which are Dangerous From the Point of View of Sudden Ejections of Coal and Gas" (D.P. Borisov); "Investigation of the Tendency to Ejections of Coal of the Makhnevskiy anthracite

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deposits and Justification of Rational Methods of Mining This Coal (I.N. Sidorov); "Method of Detection of Sections Which Are Dangerous as Regards Sudden Ejections in Seams of the Yegorshinskiy mining region" (O.I. Chernov); "Development of Geophysical Methods and Apparatus for Establishing and Studying the Forerunners of Sudden Ejections of Coal and Gas" ([illegible] Antsyferov); "Results of Scientific Investigations on the Problem of Combating Shocks in Coal Mines During 1957" (A.G. Avershin); "On the State of Designing and Testing Drilling Machines and Equipment for Passing Through Galleries in Seams Which Are Dangerous From the Point of View of Ejections of Coal and Gas" (Z.B. Kogan). On the basis of the presented papers and discussions, the participants in the conference concluded that in 1957 progress was achieved in the theory of sudden ejections of coal and gas.

Some of the interesting items discussed at the conference are briefly summarised.

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KUZNETSOV, Georgiy Nikolayevich; BUD'KO, Mariya Nikolayevna; . .
FILLIPOVA, Antonina Aleksandrovna; SHKLYARSKIY, Mechislav
Feliksovich; AVERSHIN, S.G., otv.red.; LOMILINA, L.N.,
tekhn.red.

[Studying manifestations of rock pressure by means of models]
Izuchenie proiavlenii gornogo davleniia na modeliakh. Moskva,
Ugletekhizdat, 1959. 282 p. (MIRA 12:8)
(Geological modeling)
(Subsidences (Earth movements))

KAZAKOVSKIY, Dmitriy Antonovich, prof., doktor tekhn.nauk; AVERSHIN, Stepan Gavrilovich, prof., doktor tekhn.nauk; BELOLIKOV, Antonin Nikolayevich, dotsent, kand.tekhn.nauk; GUSEV, Mikhail Iosifovich, dotsent, kand.tekhn.nauk; ZDANOVICH, Vyacheslav Grigor'yevich, prof., doktor tekhn.nauk; KROTOV, Gavriil Alekseyevich, dotsent, kand.tekhn.nauk; LAVROV, Vladimir Nikolayevich, kand.tekhn. nauk; LEBEDEV, Kirill Mikhaylovich, assistent; PYATLIN, Mikhail Petrovich, dotsent, kand.tekhn.nauk; STENIN, Nikolay Ivanovich, assistent; BUKRINSKIY, V.A., otv.red.; SLAVOROSOV, A.Kh., red.izd-va; ALADOVA, Ye.I., tekhn.red.; KOROLENKOVA, Z.A., tekhn.red.

[Mine surveying] Markscheiderskoe delo. Moskva, Ugletekhizdat, 1959. 688 p. (MIRA 13:11)
(Mine surveying)

AVERSHIN, S.G.

AVERSHIN, Sergei G. - "Some new methods and results of experimental investigation into rock pressure manifestations during the working of coal seams" (Section C)

IL'SHTEIN, A. M. - "Influence of the resistance of the support system on manifestations of rock pressure in longwall faces" (Section B)

PROTOD'YAKONOV, Mikhail M., Institute of Mining, Academy of Sciences - "New methods of determining the mechanical properties of rock" (Section C)

RIZNICHENKO, Yuriy V., Corresponding Member, Academy of Sciences, and MYACHKIN, V. I., Institute of Physics of Earth im. O. Yu. Schmidt - "Investigations into rock pressure, the process of disintegration and the physico-mechanical properties of rocks under [illegible] pressure by means of [illegible]

REPORT TO BE PRESENTED AT THE INTERNATIONAL ROCK PRESSURE CONFERENCE, PARIS, FRANCE, 16-20 May 1960.

AVERSHIN, S.G., prof., doktor tekhn.nauk

Determining the parameters of chamber mining. [Trudy] VNIMI no.40: 13-24 '61. (MIRA 14:12)

(Mining engineering)

AVERSHIN, S.G.; PETUKHOV, I.M.; ROZOV, B.V.; BUDKOV, V.Ye.

Control of the harmful effects of bumps in the mines of the U.S.S.R. /gol' 37 no.8:22-30 Ag '62. (MIRA 15:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy marksheyderskiy institut (for Avershin, Petukhov). 2. Gosudarstvennyy trest ugol'nykh predpriyatiy Kizelevskogo rayona (for Rozov, Budkov).
(Mining engineering) (Rock pressure)

AVERSHIN, S.G., doktor tekhn.nauk

International Congress on Rock Pressure held in Paris. [Trudy]
VNIMI no.40:212-230 '61. (MIRA 14:12)
(Rock pressure--Congresses)

AVERSHIN, S.G., doktor tekhn. nauk, prof.

Conditions causing rock bursts and problems in studying them. [Trudy] VNIMI no.48:3-9 '62. (MIRA 16:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy marksheyderskiy institut.

(Rock bursts)

AVERSHIN, S.G., prof., doktor tekhn.nauk; P[illegible] TUKHOV, I.M., kand.tekhn.nauk

Study of bumps and development of measures to control against their harmful effects in mines of the U.S.S.R. [Trudy] VNIMI no.49:3-17 '62. (MIRA 17:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy marksheyderskiy institut.

AVERSHIN, STEPAN G.

"Fighting rock bursts in coal mines"

report to be submitted for the third Int. Mining Congress, Salzburg Austria, 15-21 Sep 63

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AVERSHIN, S.G.; PETUKHOV, I.M.

"Conditions of genesis of rockbursts and precautions against rockburst hazard."

Report to be submitted for the 4th Intl. Conference on Strata Control and Rock Mechanics New York, 4-8 May 1964.

BORISOV, Aleksey Alekseyevich, prof., doktor tekhn. nauk; AVERSHIN, S.G., akademik, retsenzent; ZHUKOV, V.V., kand. tekhn.nauk, otv.red.; SIRENSKIY, M.M., red.izd-va; IL'INSKAYA, G.M., tekhn. red.

[Calculation of rock pressure in longwalls of flat seams] Raschety gornogo davleniia v lavakh pologikh plastov. Moskva, Izd-vo "Nedra," 1964. 277 p. (MIRA 17:4)

1. Akademiya nauk Kirgizskoy SSR (for Avershin).

AVERSHIN, S. G.; PETUKHOV, I. M.; VIS, I. A.

"Gebirgsschlage und Mabnahmen zu ihrer Bekampfung."

report submitted for Mtg of Intl Bureau of Rock Mechanics, Leipzig, Nov 65.

UdSSR, Frunse, Akademie der Wissenschaften der Kirgisischen SSR; Leningrad VNIMI

L 24768-65 EWO(r)/EWT(1)/EWG(k)/EWT(m)/EPF(c)/EWP(v)/EPR/EWP(j)/T-2/PS(b)
Pc-4/Pz-6/Pr-4/Ps-4 RM/AW
ACCESSION NR: AP4049808 S/0113/64/000/001/0023/0027

AUTHOR: Avershin, V. I.

TITLE: [illegible]

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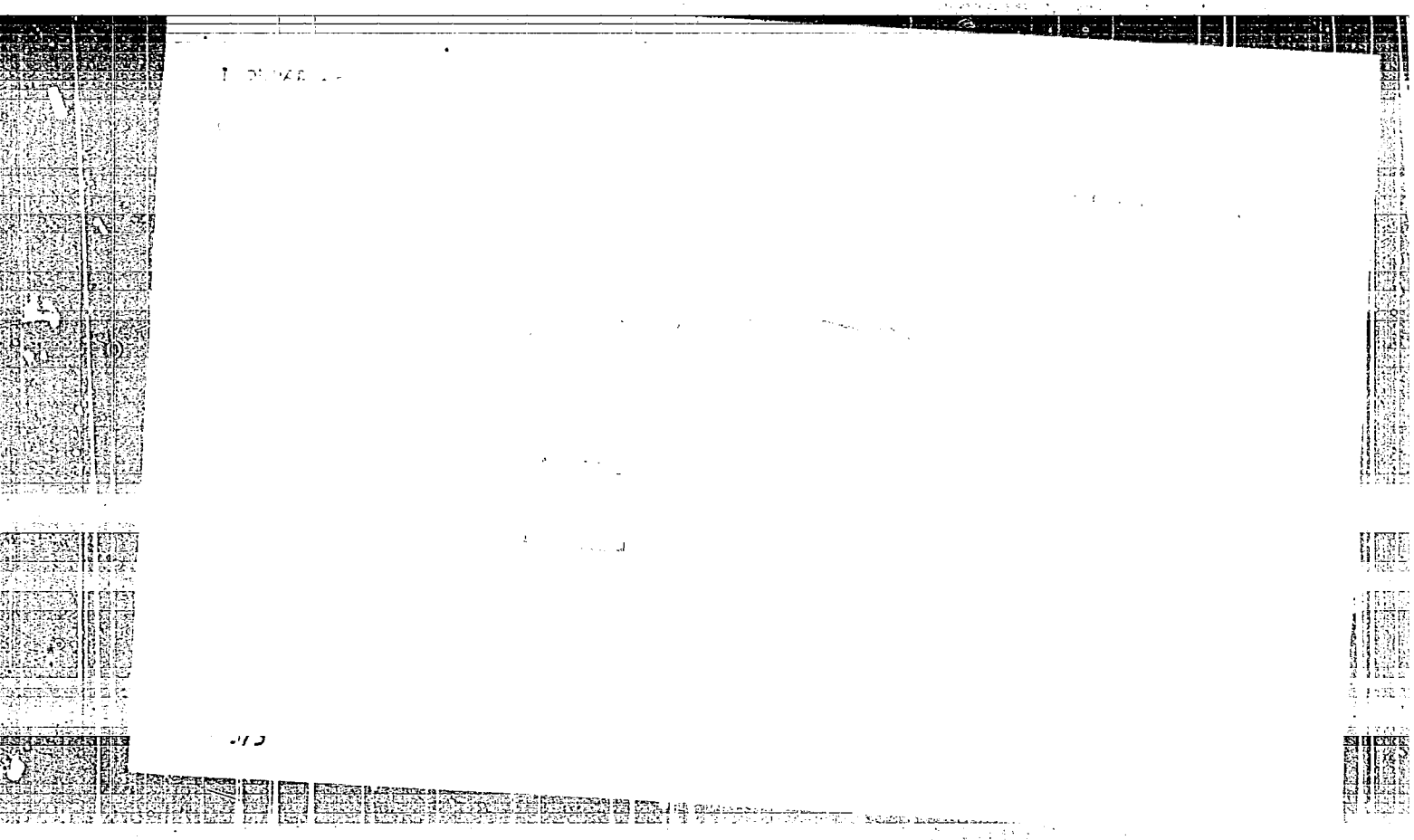

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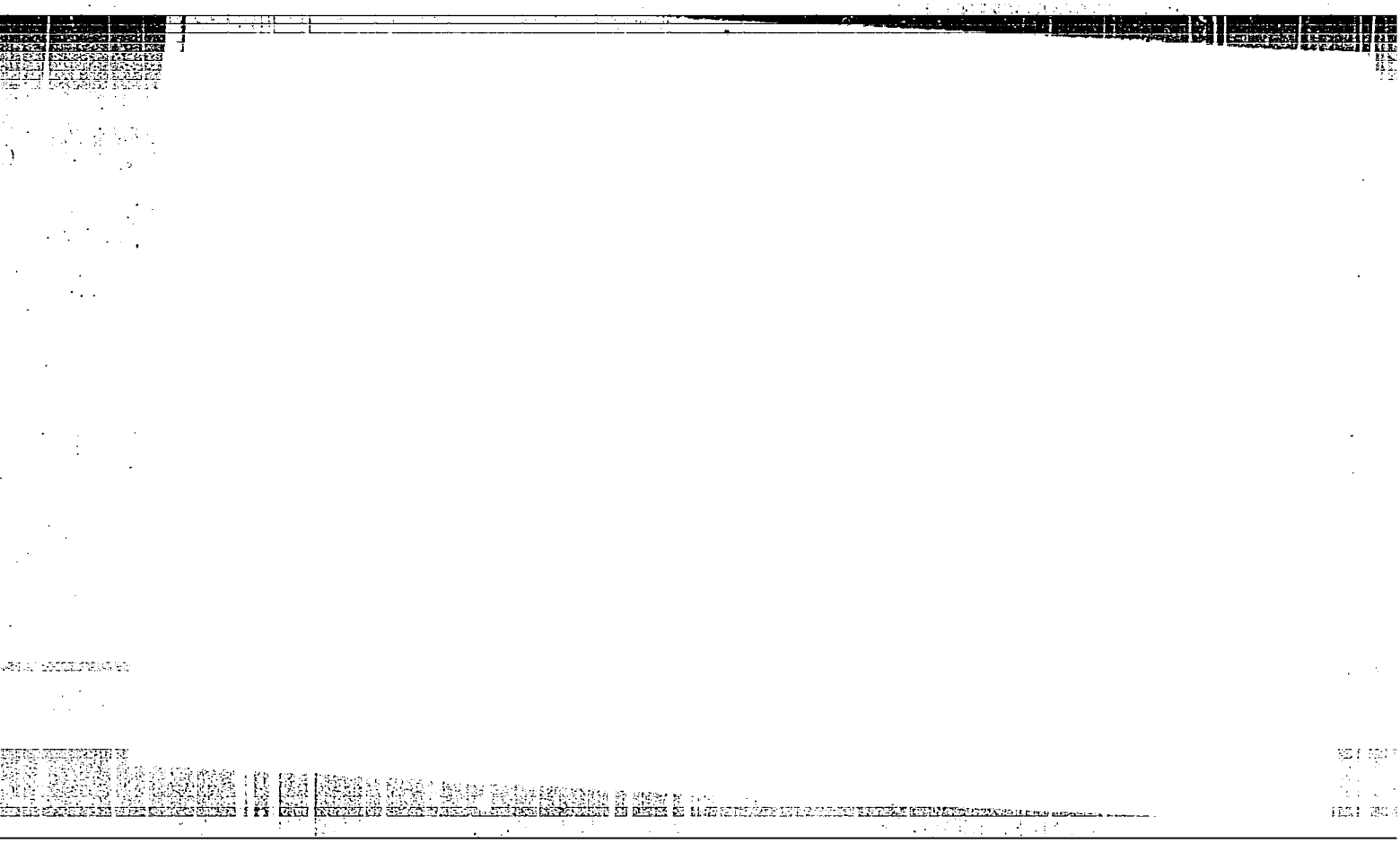

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L 37710-66 EWP(j)/EWT(m)/T RM/WW/JW/JWD

ACC NR: AP6024416 SOURCE CODE: UR/0020/66/169/001/0158/0161

AUTHOR: Averson, A. E.; Barzykin, V. V.; Merzhanov, A. G. 52 B

ORG: Institute of Chemical Physics, Academy of Sciences SSSR (Institut khimicheskoy fiziki Akademii nauk SSSR)

TITLE: Thermal theory of ignition of condensed substances

SOURCE: AN SSSR. Doklady, v. 169, no. 1, 1966, 158-161

TOPIC TAGS: ignition theory, condensed system, ignition ~~delay~~ lag, ignition, computer calculation

ABSTRACT: Generalized equations are derived for the ignition of condensed systems under various boundary conditions, i.e., at a constant surface temperature, a constant heat flux to the surface of the combustible, and under the conditions of Newtonian heat-exchange on the surface of the condensed system. The numerical solution of the derived system of equations on an electronic computer yielded a generalized equation for calculating the ignition delay of condensed systems over a wide range of parameters. Ignition parameters calculated by the proposed theory are in good agreement with both published theories and published experimental data obtained for the ignition of pyroxylin (V. I. Lisitskiy, A. G. Merzhanov, Nauchno-tekhnich. problemy goreniya i vzryva, no. 2, 1965). The authors thank Z. S. Andrianova for programming the electronic computer calculations. Orig. art. has: 1 table, 2 figures, and 6 formulas. [PS]

SUB CODE: 21/ SUBM DATE: 17Sep65/ ORIG REF: 005/ OTH REF: 004/ ATD PRESS: 5041

Card 1/1 nest UDC: 536.46

S/598/61/000/006/011/014
D228/D303

AUTHORS: Lipkes, Ya.M., Averteeva, K.N., and Koptseva, I.N.

TITLE: Studying the character of the process of condensation of magnesium and magnesium chloride vapors formed during the vacuum separation of the reaction mass

SOURCE: Akademiya nauk SSSR. Institut metallurgii. Titan i yego splavy. no. 6, 1961. Metallotermiya i elektrokhimiya titana, 80 - 83

TEXT: The authors studied the process of vacuum separation under high residual pressures which make possible the condensation of Mg and $MgCl_2$ vapors in order to try and find a way of both reducing the Mg loss and decreasing the condenser dimensions. According to D.S. Kamenetskaya (Ref. 1: Sb. Premeneniye vakuuma v metallurgii (Application of the Vacuum in Metallurgy) Izd. AN SSSR, 1958) and others, this process has to be conducted at a high temperature in the condenser zone -- with residual pressures in excess of the values corresponding to the triple-point readings: A vapor-tension of

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Studying the character of the ...

sequently obtained by raising the temperature in the condenser zone to 650°, although this tended to diminish the rate of separation. Additional experiments, in which the condenser temperature was varied from 100 to 900°, indicated that the rate of separation considerably decreases above the critical temperature of 650°. The authors thus conclude that application of the system developed by them will enable the density of the condensate to be increased by approximately two-fold. There are 3 figures, 2 tables and 3 Soviet-bloc references.

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S/598/61/000/006/012/034
D245/D303

AUTHORS: Lipkes, Ya.M., Averteeva, K.N., and Koptseva, I.N.

TITLE: Testing solid absorbents for vapor removal in producing titanium sponge

SOURCE: Akademiya nauk SSSR. Institut metallurgii. Titan i yego splavy. no. 6, 1961. Metallotermiya i elektrokhimiya titana, 84 - 87

TEXT: The authors point out the undesirable effects of water and HCl vapors in the vacuum separation of the reaction products of magnesiothermal reduction of $TiCl_4$. HCl vapors can be effectively removed by a freeqing traps using liquid N_2, but this has disadvantages in practice. Accordingly, the following possible absorbents were tested by drawing through HCl vapor with a control traps of liquid N_2: Ca, Mg oxides, $MgCl_2$, Ca, solid NaOH, silica-gel, activated charcoal, Ti powder, heated to 800°C. Satisfactory absorption was observed with (1) a mixture of activated charcoal and Ti powder heated to 800°C and (2) a mixture of solid NaOH and Ti powder (800 °C). There are 1 figure and 3 tables.

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S/137/62/000/006/037/153
A006/A101

AUTHORS: Lipkes, Ya. M., Avertseva, K. N., Koptseva, I. N.

TITLE: Studies on the nature of the condensation process of magnesium and magnesium chloride vapors, developing during vacuum separation of a reaction mass

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 6, 1962, 14, abstract 6G103 (In collection: "Titan i yego splavy", no. 6, Moscow, AN SSSR, 1961, 80 - 83)

TEXT: The authors studied the process of vacuum separation in apparatus with upper and lower condensers under conditions of higher residual pressure (0.5 - 15 mm Hg) which make it possible that Mg and $MgCl_2$ vapors be condensed to a liquid phase. The apparatus with a lower condenser yields a condensate with a more dense structure on account of partial melting out and condensation into a liquid phase of $MgCl_2$. The Mg vapors were condensed merely to a solid phase. Partial condensation of Mg vapors, at first to a liquid phase, is possible at 10 - 15 mm Hg residual pressure in the apparatus, a temperature of 950°C in the

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separation zone and 50°C in the condensation zone. The volumetric weight of the condensate is then equal to 1.20 - 1.24 g/cm^3. The most dense condensate, of 1.4 - 1.5 g/cm^3 volumetric weight, was obtained when the temperature in the condenser zone was maintained equal to the Mg melting point (650°C).

L. Vorob'yeva

[Abstracter's note: Complete translation]

L 23177-66
ACC NR: AP6006711

SOURCE CODE: UR/0105/65/000/006/0045/0050

AUTHOR: Avetisyan, Dzh. A. (Candidate of technical sciences, Moscow); Bertinov, A. I. (Doctor of technical sciences, Professor, Moscow)

ORG: none

TITLE: Optimal design of the salient-pole field structure of a synchronous machine

SOURCE: Elektrichestvo, no. 6, 1965, 45-50

TOPIC TAGS: synchronous machine, digital computer, computer calculation, magnetic field, electric field, electric motor

ABSTRACT: An improved method of designing the field structure of a synchronous machine on computer is suggested. The optimality criterion is expressed through a utility function $M = F_0$, where F_0 is the magnetizing force required to convey the flux through the airgap and armature, and to offset the armature reaction. The utility function is maximized in this form: $M = F_0(h_m, b_m)$ with $h_m > 0$, $b_m > 0$; here h_m and b_m are geometric parameters. The function maximum is sought by the gradient method which requires iteration operations on a digital computer (the programing is featured). As a result of computer calculations, formulas are

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UDC: 621.313.32:001.12

ACC NR: AP6006711

developed for the maximum useful field magnetizing force, optimal width and optimal height of the pole core. Design data for 8, 16, 30, 60, and 90-kw machines obtained from the above formulas and by conventional techniques are compared (tabulated). "Optimal field parameters were calculated by Engineer Y. M. Rybaulina in the Computer Laboratory, MAI, on a BESM-2M computer." Orig. art. has: 4 figures and 17 formulas.

SUB CODE: 09 / SUBM DATE: 08Jun64 / ORIG REF: 002 / OTH REF: 000

Card 2/2

L 23523-66

ACC NR: AP6002598 (A) SOURCE CODE: UR/0286/65/000/023/0093/0093

AUTHORS: Gasparyan, A. M.; Akopyan, R. Ye.; Avetsiyan, G. M.; Mirzakhanyan, R. M.

ORG: none

TITLE: Chamber feeder for pneumatic transport equipment. Class 81, No. 176821

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 23, 1965, 93

TOPIC TAGS: pneumatic device, pipeline [redacted]

ABSTRACT: This Author Certificate presents a chamber feeder for pneumatic transport equipment. The feeder consists of a cylindrical chamber in the lower portion of which an annular porous duct is mounted, feeding compressed air into the cylinder. The inlet end of the material duct, where mixing of the friable material with air occurs, is placed near the duct (see Fig. 1). To eliminate sources of caking of the friable material and to uniformly discharge the chamber of friable material, the annular porous duct is made of sectors separated from each other, each of which is connected through an inlet tube to a common compressed air distributor of the plug type. The distributor plug which rotates

Card 1/2 UDC: 621.867.82:621.86.067.2

L 23573-66
ACC NR: AP6002598

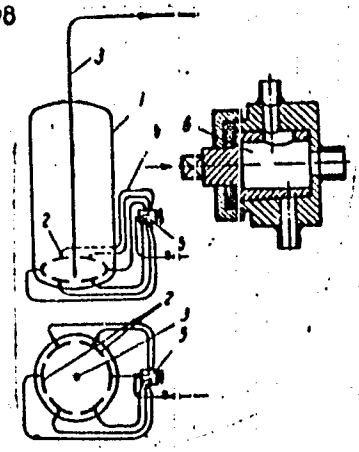

Fig. 1. 1 - cylindrical chamber; 2 - sectors of porous duct; 3 - inlet end of material duct; 4 - inlet tube; 5 - common compressed air distributor; 6 - plug.

provides successive feed of compressed air into each sector. Orig. art. has: 1 diagram.

SUB CODE: 13/ SUBM DATE: 27Jun64

Card 2/2 PB

AVER'YANENKO, A., slesar' trubnogo tsekha.

Decision of a general meeting. Sov. profsoiuzy 5 no.5:25 My '57.
(Dnepropetrovsk--Pipe, Steel) (MLRA 10:6)

AVER'YANOV, Aleksandr Dmitriyevich; GLOTOV, Yuriy Georgiyevich; POPOV, Serafim Konstantinovich; PERVOV, V.M., red.; MARCHUKOVA, M.G., red.izd-va; LAVRENTOVA, N.B., tekhn.red.

[Use of Gants-Endrashek VIII 1hR 216/310 engines by the Estonian merchant marine] Opyt ekspluatatsii dvigatelei Gants-Endrashek VIII IhR 216/310 v Estonskom parokhodstve. Moskva, Izd-vo "Morskoi transport," 1959. 43 p. (MIRA 12:12)
(Estonia--Merchant marine)
(Marine diesel engines)

3.6000

S/049/61/000/002/001/012
D242/D301

AUTHORS: Aver'yanov, A. G., Veytsman, P. S., Gal'perin, Ye. I., Zverev, S. M., Zayonchkovskiy, M. A., Kosminskaya, I. P., Krakshina, R. M., Mikhota, G. G., and Tulina, Yu. V.

TITLE: Deep seismic sounding in the transitional zone between the continent of Asia and the Pacific Ocean during the International Geophysical Year

PERIODICAL: Akademiya nauk SSSR. Seriya geofizicheskaya. Izvestiya, no 2, 1961, 169-184

TEXT: As part of the IGY program scientists of the Institut fiziki zemli AN SSSR (Institute of Physics of the Earth AS USSR), the Vsesoyuznyy nauchno-issledovatel'skiy institut geofiziki Ministerstva geologii i okhrany nedr SSSR (All-Union Scientific-Research of the Ministry of Geology and Mineral Resources of the USSR) and other organizations investigated the crustal structure of the Okhotsk Sea by means of deep seismic sounding. The area

Deep seismic sounding...

was chosen since very little is known of the nature of the crust in such transitional zones between continents and oceans. It is separated from the Pacific by the Kurile Island Arc which is bordered by a deep ocean containing seismologically active zones with deep foci and large positive gravity anomalies. The main observations were undertaken along profiles with lengths of about 8000 km, orientated transversely to the supposed structures of the study area, as described by Ye. I. Gal'perin, A. V. Goryachev and S. M. Zverev (Ref. 1: Issledovaniye zemnoy kory v oblasti perekhoda ot Aziatskogo kontinenta k Tikhomu okeany (Investigation of the Crust in the Area of Transition between the Continent of Asia and the Pacific Ocean) Sb. XII razdel programmy MGG (seysmologiya), No. 1. Izd. AN SSSR, 1958) and by V. G. Vasil'yev et al (Ref. 2: Issledovaniye zemnoy kory v oblasti perekhoda ot Aziatskogo kontinenta k Tikhomu okeany (Investigation of the Crust in the Area of Transition between the Continent of Asia and the Pacific Ocean) Sb. "Seysmicheskiye issledovaniya v period MGG"

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Deep seismic sounding...

No. 4, Izd. An SSSR, 1960). The area near Iturup Island was also investigated on a special grid. The data was collected by the method of movable explosion points with single-point recording at fixed stations; the details are given by Ye. I. Gal'perin and I. P. Kosminskaya (Ref. 5: Osobennosti metodiki glubinnogo seysmicheskogo zondirovaniya na more. (Features of the Method of Deep Seismic Sounding at Sea) Izv. AN SSSR, Ser. geofiz., No. 7, 1958). Use was also made of the results of experiments conducted by G. A. Gamburtsev (Ref. 6: O glubinnom seysmicheskom zondirovanii zemnoy kory i nekotorykh drugikh prilozheniyakh metodom vysokochuvstvitel'noy zapisi seysmicheskikh kolebaniy. (The Deep Seismic Sounding of the Crust and some other Applications by the Method of Highly Sensitive Recording of Seismic Oscillations) Izbr. tr., Izd. Akad. Nauk SSSR, 1960) and P. S. Veytsman (Ref. 7: O resul'tatakh rabot po glubinnomu seysmicheskomu zondirovaniyu zemnoy kory v odnom iz gornykh rayonov Sredney Azii (Results of the Deep Seismic Sounding of the Crust in a Mountainous District of Central

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Deep seismic sounding...

Asia) Stud, Geophys. et Geodaet., No. 2, 1958) in continental areas of the Soviet Union. In contrast to foreign practice, it was possible by employing several recording stations on the line of observation to obtain the types of time-travel curves shown in Fig. 2 during a single boat journey. Wave recordings were also made on the explosion vessel. The bottom of reflections provided information on the depth of water and the structure of bottom sediments in accordance with the procedure mentioned by S. M. Zverev (Ref. 10: O stroyenii osadochnoy tolshchi nekotorykh uchastkov Tikhogo okeana po dannym seysmicheskikh otrazhennykh voln (Structure of the Sediment Layer of Certain Parts of the Pacific Ocean from the Data of Reflected Seismic Waves) Izv. AN SSSR, ser. geol., No. 2, 1960). The explosions of charges weighing about 100 kg were recorded on a low-frequency seismic device with a filtration range of 0.7 - 15 hertz at distances of up to 200 - 250 km on the sea and 100 - 150 km on the ocean. The receivers consisted of hydrophones with cascade intensification.

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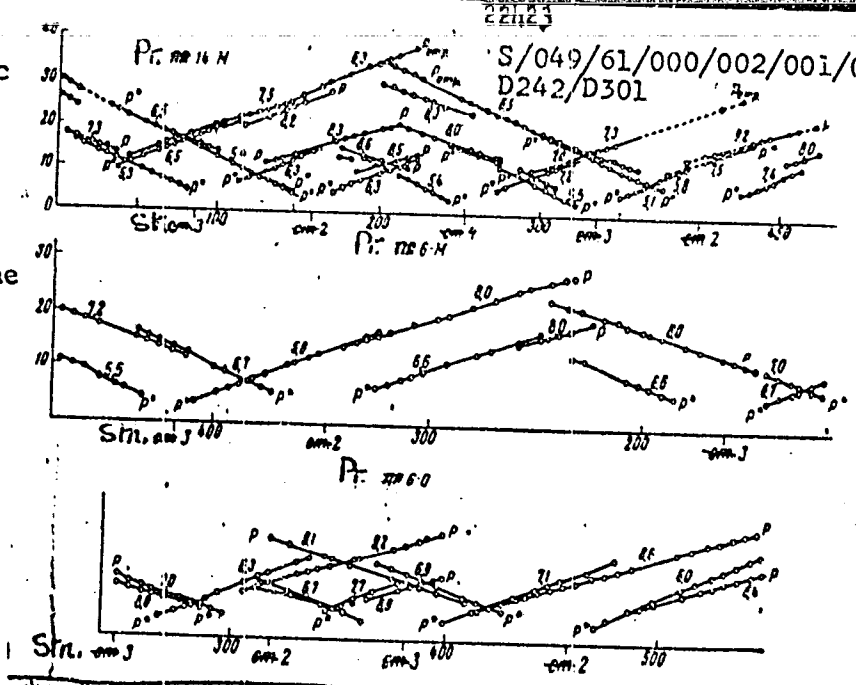
Deep seismic sounding...

Fig. 1. Examples of hodograph systems obtained in the Okhotsk Sea (14-M, 6-M) and Pacific Ocean (6-O)

S/049/61/000/002/001/012
D242/D301



Фиг. 2. Примеры систем годографов, полученных в Охотском море (14-М, 6-М) и Тихом океане (6-О)

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Deep seismic sounding...

The waves were separated and correlated by recording their intensity simultaneously with the construction of the hodographs which were set out in such a way that the coordinate origin corresponded to the position of the recording station, the time of wave-arrival being plotted over the positions of the explosion sites. Despite the complexity of the recordings, especially in island and littoral areas, several types of waves related to crustal discontinuities, bottom sediments and the water layer were distinguished on the seismograms, including refracted longitudinal waves associated with boundaries in the sediment layer (P_{sed}) and the actual crust (P^o and P^*) and with the Mohorovicic discontinuity at the base of the crust. Waves of the first type have speeds of 5 km/sec and were observed near the Kuriles and on most sea profiles. The velocities of the P^o and P^* waves mainly recorded in island areas and near Kamchatka are 6 and 6.5 - 7 km/sec respectively. The leading P waves refracted from the Mohorovicic discontinuity

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Deep seismic sounding...

travel at speeds of about 8.5 km/sec. Waves (P_R) reflected from the Mohorovicic and other discontinuities were also noted in addition to the refracted waves, although it was only possible to distinguish them with any clarity in certain regions - mainly the northern and central parts of the Okhotsk Sea, where their amplitude is greater than that of the other wave-types. Analysis of the hodographs discloses the existence of three main wave-types defined by differences in the arrival and transit time of the waves, by the areas where they were recorded and by the presence or absence of the P^0 and P^* groups (Fig. 9). By plotting the values for the relationship of the mean velocity v to the depth h, three types of velocity curves corresponding to continental-, intermediate- and oceanic-type hodographs were also obtained. Continental-type hodographs are characteristic of large areas in the northern and central parts of the Okhotsk Sea and in the northern Kuriles, where work by P. S. Veytsman et al (Ref. 11: Nekotoryye rezul'taty izucheniya stroyeniya zemnoy kory v oblasti

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