

USSR

KOTOSONOV, N. V., et al., Izvestiya vysshikh uchevnykh zavedeniy, Radiofizika,
Vol XV, No 1, 1972, pp 150-152

object. Consequently, the application of the indicated radiator is most expedient when recording microwave holograms. The arguments and the formula obtained for the degree of spatial coherence at two points are valid only for the case of location of the analysis region in the Fresnel zone where the radiation source is elongated relative to the points of measuring the spatial coherence.

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USSR

UDC 621.317.373.538.632

KOTOSONOV, N. V., KILYAVICH, YA. L., ZVEREV, G. F., RADZEVUDZE, V. G., GLAUBERMAN, A. S.

"Phase-Sensitive Detector with a Superhigh-Frequency Hall Data Unit"

Kiev, Izvestiya vysshikh uchebnykh zavedeniy--Radioelektronika, Vol XIV, No 8, 1971, pp 946-947

Abstract: A study is made of the operation of phase sensitive detectors based on superhigh-frequency Hall data transmitters. Measurements were taken at a frequency of 600 megahertz and the basic part of the measurement unit was a coaxial magnetic field resonator-concentrator. The dependence of the constant component of the Hall voltage on the phase shift angle and also the estimation of the linearity of the characteristic with respect to both components were studied. When measuring the linearity of the characteristic and its dynamic range, fixed attenuators were included in the measured or reference channel, and the results of these measurements are presented in graphical form. The linearity of the Hall data unit characteristic as a function of the magnetic field intensity and current in the dynamic range of no less than 30 decibels was experimentally confirmed. The experimental range was limited by the sensitivity of the indicator and the power of the generator considering attenuation in the decoupling elements and it is not limiting.

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UDC: 621.317.77:538.632

USSR

KOTOSNOV, N. V., KHLIVACH, Ya. L., ZVEREV, G. F., RADZEVUDZE, V. G.,
GLAUBERMAN, A. S.

"On the Possibility of Constructing a Phase Meter With Direct Readout Based
on a Hall Pickup for the SHF Range"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 2 (Re-
ports of the All-Union Scientific and Technical Conference on Radio Engineer-
ing Measurements. Vol. 2), Novosibirsk, 1970, pp 95-96 (from RZh-Radiotekhnika,
No 12, Dec 70, Abstract No 12A328)

Translation: It is pointed out that when a Hall pickup is subjected to a
harmonically varying current and a magnetic field, a constant EMF is de-
veloped across the Hall leads which is proportional to the cosine of the
angle of phase displacement between the vectors of current and magnetic
field strength. This emf may serve as a measure of the phase displacement,
and is convenient for purposes of indication. The feasibility of building
a phase meter based on this principle is checked out on a frequency of
600 MHz. A schematic diagram of the installation is presented. The dif-
ference between theoretical and experimental data is no more than 5 percent.
Ambiguity in the phase angle reading may be eliminated by including a small
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USSR

KOTOSONOV, N. V. et al., Dokl. Vses. nauchno-tekhn. konferentsii po radio-tekhn. izmereniyam. T. 2, Novosibirsk, 1970, pp 95-96

elongating insert in the measurement channel. Possible systematic errors (thermo-emf etc.) can be completely compensated. E. L.

2/2

1/2 012 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--DETERMINATION OF SULFURIC ACID CONCENTRATION -U-

AUTHOR--(04)-KONOVALOV, V.A., LOLENKO, I.Z., MITROFANOV, YU.A., KHLYNIN,
V.I.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 265,544

REFERENCE--OTKRYTIYA, IZJBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--09MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL PATENT, SULFURIC ACID, ELECTRICAL CONDUCTIVITY,
MEASUREMENT, IONIZATION CONSTANT, AQUEOUS SOLUTION, SULFATE, SODIUM
COMPOUND, ZINC COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3004/0834

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0131427

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AA0131427

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. H SUB2 SO SUB4 CONCN. IS DETO. IN
A TERNARY SOLN. BY MEASURING THE ELEC. COND. OF THE SOLN. TO REMOVE THE
EFFECT ON THE MEASUREMENT OF 7-10PERCENT ZNSO SUB4 AND NA SUB2 SO SUB4
CONTAINED IN H SUB2 SO SUB4, THE ELEC. COND. FOR A SOLN. DILD. IN A
1:(1-1.2) RATIO.

FACILITY: RYAZAN RADIOTECHNICAL INSTITUTE.

UNCLASSIFIED

USSR

UDC 669.189:621.746.75

KHLYNOV, V. V., GORNOVOY, V. A., and STRATONOVICH, V. N., Sverdlovsk

"Some Factors Affecting the Enlargement and Removal of Nonmetallic Inclusions From Steel"

Moscow, Izvestiya Akademii Nauk SSSR -- Metally, No 5, 1970, pp 47-50

Abstract: This article contains an analysis of factors affecting the removal of nonmetallic inclusions from steel. In the experiment silicon or aluminum was introduced into previously oxidized technical Armco-iron $[O] = 0.175\%$. A high-speed movie camera was used to record the kinetics of transition of the sample (coated with deoxidation products) of metal in the gas phase (helium). The hole formed on the surface of the metal was round if the curvature of the plate of MgO or Al_2O_3 did not change from point to point. As its diameter $2r$ varied with time t , the rate of loss of metal from the surface of the sample $u(dr/dt)$ was found. The experimental results are presented in the form of a graph showing that in the oxygen concentration range of $0.175-0.12\%$ the value of u increases with deoxidation by Al several times faster than by silicon. The mechanism of this phenomenon is discussed in some detail. It is noted that the dependence of stability on the properties of the phase coating the surface of the sample and the metal indicates different capacity of the thin metal

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KHLYNOV, V. V., et al, Izvestiya Akademii Nauk SSSR -- Metally, No 5, 1970,
pp 47-50

layer to leak out of the gap between the two oxide surfaces. Various aspects of loss of stability are discussed. It is noted that the experimental results permit explanation of the fact that alumina inclusions are better removed from the metal than silicate inclusions. The stability of the thin interstitial layers of metal on approach of liquid particles to the slag layer or to each other leads to the fact that not every encounter is effective. Therefore, merging of the particles of liquid silicates or their absorption by slag is realized in accordance with the laws of slow coagulation. Joining of solid particles is not in practice retarded by the liquid metal interstitial layer; however, it is a very slow process. On the contrary, agglomeration of liquid particles with solid particles and absorption of the latter by slag take place quite rapidly.

It was found that the thin interstitial layers of steel between the oxide film on its surface and a liquid nonmetallic particle are stable. The stability time increases on conversion from ferrous inclusions to silicate inclusions. No stability is detected at the interface with solid alumina inclusions. The data clarify the better removal of inclusions when steel is killed with increased quantities of aluminum.

2/2

1/2 011 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--MECHANISM OF THE FORMATION OF LINES OF THE CN MOLECULE IN THE SOLAR
PHOTOSPHERE --U-
AUTHOR--KHLYSTOV, A.I. *K*
COUNTRY OF INFO--USSR
SOURCE--ASTRON. ZH. 1970, 47(1), 103-10
DATE PUBLISHED-----70
SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS, PHYSICS
TOPIC TAGS--SOLAR PHOTOSPHERE, EXCITED ELECTRON STATE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1994/1732 STEP NO--UR/0033/70/047/001/0103/0110
CIRC ACCESSION NO--AP0115561

UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0115561

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. CONSIDERATION OF ELEMENTARY PROCESSES REVEALS THAT THE MECHANISM OF FORMATION OF THE LINES OF A VIOLET SYSTEM OF CN BANDS IN THE PHOTOSPHERE CONSISTS IN INCOHERENT SCATTERING IN THE PRESENCE OF THE EFFECTS OF THE RADIATIONAL INTERACTIONS BETWEEN ELECTRONIC AND ROTATIONAL LEVELS, OF THE EFFECTS OF THE RADIATIONAL INTERACTIONS OF VIBRATIONAL LEVELS, AND OF VIBRATIONAL TRANSITIONS INTO EXCITED ELECTRON STATES RESULTING FROM COLLISIONS WITH H ATOMS. FACILITY: GOS. ASTRON. INST. IM. SHTERNBERGA. MOSCOW, USSR.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--MECHANISM OF THE FORMATION OF CH MOLECULE LINES FOR THE 2 P1 2
DELTA TRANSITION AT 4300 A, IN THE SOLAR PHOTOSPHERE -U-
AUTHOR--KHLYSTOV, A.I.
COUNTRY OF INFO--USSR
SOURCE--ASTRONOMICHESKII VESTNIK, VOL 4, JAN, MAR. 1970, P. 66-69
DATE PUBLISHED-----70
SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS
TOPIC TAGS--SOLAR PHOTOSPHERE, COLLISION, HYDROGEN, ATOM, MOLECULE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1991/1105 STEP NO--UR/0454/70/004/000/0066/0069
CIRC ACCESSION NO--AP0110795
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0110795

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE COLLISIONS OF CH MOLECULES WITH HYDROGEN ATOMS IN THE SOLAR PHOTOSPHERE USING A METHOD DESCRIBED BY KHLYSTOV (1970). IT IS SHOWN THAT THE MECHANISM OF THE FORMATION OF CH MOLECULE LINES FOR THE TRANSITION $2\pi \rightarrow 2\Delta$ AT 4300 Å IS A COMBINATION OF THE REAL ABSORPTION WITH COMPLETELY NONCOHERENT SCATTERING IN THE PRESENCE OF AN INTERRELATION EFFECT BETWEEN THE LINES OF THE P, Q, AND R BRANCHES. FACILITY: MOSKOVSKII GOSUDARSTVENNYI UNIVERSITET. FACILITY: ASTRONOMICHESKII INSTITUT, MOSCOW, USSR.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--THE INFLUENCE OF DIVERSE CHOLINOLYTIC AGENTS ON THE MOTORICITY OF
THE LARGE INTESTINE IN MAN -U-
AUTHOR--KHLYSTOV, V.G.

COUNTRY OF INFO--USSR

SOURCE--KLINICHESKAYA MEDITSINA, 1970, VOL 48, NR 5, PP 37-39

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CHOLINOCYTIC, LARGE INTESTINE, ATROPINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3002/1763

STEP NO--UR/0497/70/048/005/0037/0039

CIRC ACCESSION NO--AP0129131

UNCLASSIFIED

2/2 012
CIRC ACCESSION NO--AP0129131

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF CHOLINOLYTICS ON THE SIGMOID MOTORICITY WAS INVESTIGATED BY MEANS OF BALLOON KYMOGRAPHY, PREVALENTLY IN PATIENTS WITH INTESTINAL AFFECTIONS. THE RESULTS DEMONSTRATED THAT THE CHOLINOLYTICS EMPLOYED BY THE DEGREE, CONSTANCY AND DURATION OF DEPRESSOR ACTION ON THE SIGMOID MOTORICITY DIFFER MARKEDLY FROM EACH OTHER. THUS, AFTER SUBCUTANEOUS INJECTION OF ATROPINE (0.7-1 MG) POSITIVE RESULTS WERE OBSERVED IN 77 PER CENT OF CASES, AFTER PLATYPHYLLINE (2 MG), IN 38 PER CENT, AFTER PERGRAL INGESTION OF BELLADONNA EXTRACT (15 MG), IN 50 PER CENT, AFTER DIPHEREDINE (20 MG), IN 75 PER CENT OF CASES. A COMPLETE SHORT TERM CESSATION OF INTESTINAL CONTRACTIONS WAS NOTED ONLY AFTER ATROPINE AND DIPHEREDINE. IN MANY CASES, ALONG WITH WEAKENING AND DECELERATION OF CONTRACTIONS OF THE INTESTINE, THERE WAS SEEN ALSO AN INSIGNIFICANT DECREASE OF ITS TONE. FACILITY: VSESODYUZHNY NAUCHNO-ISSLEDOVATEL'SKIY INSTITUT. FACILITY: GASTROENTEROLOGII MINISTERSTVA ZDRAVOOKHRANENIYA SSSR.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--SPECTROGRAPHIC AND CHEMICAL SPECTROGRAPHIC DETERMINATION OF
TUNGSTEN IN MOLYBDENUM -U-
AUTHOR-(02)-KHLYSTOVA, A.D., TARASEVICH, N.I.
COUNTRY OF INFO--USSR K
SOURCE--ZH. ANAL. KHIM. 1970, 25(3), 515-17
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, CHEMISTRY
TOPIC TAGS--TUNGSTEN CONTAINING ALLOY, MOLYBDENUM ALLOY, METAL CHEMICAL
ANALYSIS, SPECTROGRAPHIC ANALYSIS, REFRACTORY METAL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3001/0466 STEP NO--UR/0075/70/025/003/0515/0517
CIRC ACCESSION NO--AP0126218
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0126218

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DURING THE SPECTROGRAPHIC AND CHEM. SPECTROGRAPHIC DETN. OF W IN MO, MOO SUB3, AND AMMONIUM MOLYBDATE, THE ANAL. CONDITIONS ARE READILY REPRODUCIBLE FOR THE ANAL. LINES W 3049-.7-MO 3050.2 ANGSTROM. THE DETN. OF W CAN THUS BE CARRIED OUT BY USING EMPIRICAL FORMULAS: $10\Delta \text{PRIMES} = 2C$, WHERE Δ IS THE DIFFERENCE BETWEEN THE ABSORBANCES OF THE W AND MO ANAL. LINES AND C IS CONC. OF W IN THE SAMPLE IN PERCENT, AND $10 \text{PRIME}\Delta = K - N$ EQUALS $2C \text{ SUBIN}$, WHERE K IS THE WT. OF THE COLLECTOR RESIDUE, N THE INITIAL MOO SUB3 CONC., C SUBIN THE INITIAL CONC. OF W IN MO IN PERCENT. THE FORMER FORMULA IS USED FOR THE DETN. OF SMALLER THAN OR EQUAL TO 0.025PERCENT W, WHILE THE LATTER IS USED FOR THE DETN. OF GREATER THAN OR EQUAL TO 1PERCENT W AFTER USING AMMONIUM MOLYBDOPHOSPHATE AS A COLLECTOR. THE EMPIRICAL FORMULAS CAN BE USED FOR THE SEMIQUANT. DETN. OF 6 TIMES 10 PRIME NEGATIVE 3 PERCENT W IN MO. FACILITY: MOSCOW STATE UNIV., MOSCOW, USSR.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--PHILOSOPHICAL INTERPRETATION OF CORRELATIONS BETWEEN STRUCTURE AND
FUNCTION IN SIMULATING TISSULAR PROCESSES -U-
AUTHOR--KHLYSTOVA, Z.S.

COUNTRY OF INFO--USSR *K*

SOURCE--VESTNIK AKADEMII MEDITSINSKIKH NAUK SSSR, VOL 25, NO 3, 1970,
PAGES 14-17
DATE PUBLISHED-----70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES, BIOLOGICAL AND MEDICAL
SCIENCES
TOPIC TAGS--PUBLIC HEALTH, DISEASE CONTROL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3003/0980

STEP NO--UR/0248/70/025/003/0014/0017

CIRC ACCESSION NO--AP0130027

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0130027

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. AS A RESULT OF DEVELOPMENT AND USE OF NEW RESEARCH TECHNIQUES, OF TECHNICAL IMPROVEMENT OF OPTICS, MANY NEW SCIENTIFIC FACTS HAVE BEEN OBTAINED IN THE FIELD OF BIOLOGY AND MEDICINE WHICH REQUIRE PHILOSOPHICAL INTERPRETATION FROM THE POSITIONS OF DIALECTICAL MATERIALISM. AS INDICATED BY SOME AUTHORS (V. V. KUPRIYANOV, 1965; A. I. STRUKOV, 1967), A DIALECTICAL APPROACH TO ANALYSIS OF FACTS PERMITS PROPER LEARNING OF THE PATTERNS OF THE HEALTHY AND SICK ORGANISM AND THIS IS AN EXTREMELY IMPORTANT PREREQUISITE TO INSTITUTE PRACTICAL MEASURES RELATED TO THE TREATMENT AND PREVENTION OF DISEASES. IN THE PRESENT REPORT WE DISCUSS FROM THESE POSITIONS THE MATTER OF STRUCTURAL FUNCTIONAL CORRELATION OF TISSULAR PROCESSES. STRUCTURE IS THE CONSISTENT AND STABLE LINK AND CORRELATION BETWEEN PARTS AND ELEMENTS OF THE WHOLE. FUNCTION IS THE MANIFESTATION OF THE PROPERTIES OF AN OBJECT IN A GIVEN SYSTEM OF RELATIONS. THEY ARE DIALECTICALLY INTERRELATED (V. I. LENIN; F. ENGELS). FACILITY: SCIENTIFIC RESEARCH LABORATORY OF EXPERIMENTAL BIOLOGICAL MODELS, USSR ACADEMY OF MEDICAL SCIENCES.

UNCLASSIFIED

SPRS 59208
6-13

SESSION 111

III-1. OBTAINING AND STUDYING CERTAIN PROPERTIES OF SOLID SOLUTIONS OF THE
INDIUM ARSENIDE AND GALLIUM ARSENIDE SYSTEM

Article by N. A. Sakharov, H. D. Khlystovskaya, N. Ye. Daltirya, N. P.
Chuvpova, Ya. V. Kiseleva, Ye. P. Kashcheyeva, N. A. Kovalchuk, III,
Sizopolov, PO. Prokhorov, Rosta I. Simchen, Poluprovodnikov Khristalloy I. Pismak,
Russian, 12-17 June, 1977, p. 23

The solid solutions of the indium arsenide and gallium arsenide system
are interesting and prospective semiconducting materials the basic characteristic
parameters of which have intermediate values between the parameters of such
important compounds as gallium arsenide and indium arsenide.

In the given paper a study was made of the problem of obtaining solid
solutions of the indium arsenide and gallium arsenide system by different
methods: zone growth, directional crystallization, pulling from a melt by the
Czochralski method, crystallization from the gas phase. Comparative character-
istics of the materials obtained by these methods are presented.

A study was made of some optical and electrophysical properties of solid
solutions of the indium arsenide and gallium arsenide system in the entire range
of compositions. The spectra of the optical transmission in the wave length
range of 0.9-25 microns were measured for temperatures of 77 and 300°K. The
curves were obtained for the dependence of the absorption coefficient.
A study was made of the dependence of the concentration of the charge carriers,
mobility and width of the forbidden zone on the composition of the solid solution.

Khlystovskaya, M.D.

1/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--COMPLEXES OF COPPER I, SILVER I, AND GOLD I CHLORIDES WITH
SELENOUREA -U-
AUTHOR--(03)-VARAND, V.L., SHULMAN, V.M., KHLYSTUNOVA, E.V.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 450-2
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--COPPER COMPLEX, SILVER COMPOUND, GOLD COMPOUND, ORGANOSELENIUM
COMPOUND, UREA, COMPLEX COMPOUND, IR SPECTRUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/0638 STEP NO--UR/0062/70/000/002/0450/0452
CIRC ACCESSION NO--AP0119550
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119550

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TREATING 60 ML 0.04M CUCL SUB2 WITH COOLING WITH 50 ML 0.2M SELENOUREA IN NHCL GAVE INITIALLY A VIOLET PPT. WHICH DISSOLVED AND DEPOSITED A COLORLESS COMPLEX WITH CU SUB2 CL SUB2, 2SEC(NH SUB2) SUB2.2CUCL, ALONG WITH FORMATION OF (SECNH SUB2:NH) SUB2. REACTION OF SELENOUREA WITH AGCL GAVE AGCL.2SEC(NH SUB2) SUB2. HAUCL SUB4 AND SELENOUREA (4 MOLES) REACTED IN AQ. HCL BORAX TO FORM COLORLESS AUCL.2SEC(NH SUB2) SUB2. THE IR SPECTRA OF THE PRODUCTS INDICATED THAT THE SELENOUREA BONDS TO THE METAL VIA THE SE ATOM.
FACILITY: INST. NEORG. KHIM., NOVOSIBIRSK, USSR.

UNCLASSIFIED

USSR

UDC: 681.3

MESHIN, V. M., KHLYUPIN, G. D.

"A Device for Controlling the Beam of a Flat Antenna Array"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 13, May 72, Author's Certificate No 335692, Division G, filed 16 Jan 69, published 11 Apr 72, p 207

Translation: This Author's Certificate introduces a device for controlling the beam of a flat antenna array in which the storage function is implemented by phase shifters or by controlling phase-shifter switching circuits. The device contains a computer control unit, a subtracting counter unit and two coordinate multipliers. As a distinguishing feature of the patent, the device is simplified by including summing line counters and reversible column counters. The outputs of the coordinate multipliers are connected to the inputs of the summing line counters and reversible column counters, whose outputs are connected through coincidence gates to the inputs of the switching circuits.

1/1

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USSR

UDC 621.396.677.4:621.396.965(088.8)

KHLYUPIN, G. D., SYCHEVA, L. A., MAYOROV, G. I.

"Device for Control of the Beam of a Planar Array"

USSR Author's Certificate No 249061, Filed 24 Oct 67, Published 27 Jan 70
(from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9B76P)

Translation: The proposed device contains a control unit, a converter and decoders. In order to simplify the device it contains two coordinate multipliers executed from calculating circuits the outputs of which are connected via logical OR circuits to the inputs of the decoders, and the inputs of the multipliers are connected to the outputs of the converter. There are five illustrations.

1/1

USSR

UDC: 001.5

KHMALADZE, Ye. V., Tbilisi State University, Institute of Applied Mathematics, Academy of Sciences of the USSR, Mathematics Institute imeni V. A. Steklov

"Estimate of the Required Volume of a Sample for Distinguishing Complex Parametric Hypotheses"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 65, No 2, 1972, pp 285-288

Abstract: Let x_1, \dots, x_n be mutually independent, real random quantities with identical probability distribution and probability density function $p(x)$ relative to some measure. The author estimates the necessary sample volume for distinguishing complex hypotheses

$$p(x) \in H_\theta = \{p_{\omega\theta}(x), \omega \in \Omega_\theta\} \quad p(x) \in K_\theta = \{f_{\omega\theta}(x), \omega \in \Omega_\theta\};$$

where θ is a known parameter (the parameter of similarity of the hypotheses). ω is an unknown parameter which takes on values on certain subsets (Ω_0 and Ω_1) of the number line, H_θ and K_θ are hypothetical families of the probability distribution. It is assumed that $\theta \rightarrow 0$ and that $n = n(\theta) \rightarrow \infty$ in an arbitrary manner. Bibliography of one title.

1/1

USSR

UDC 533.95:538.4

KUKSA, Yu. G., SMIRNOV, A. S., KHMARA, I. S., and CHERNYI, Z. D.

"Action of Electrodynamic Three-Dimensional Forces Under Pulse Excitation

V sb. 7-ye Sovesh. po magnit. gidrodinamike. T. 3 (Seventh Conference on Magnetohydrodynamics. Vol 3 -- Collection of Works), Riga, "Zinatne," 1972, pp 61-64 (from RZh-Fizika, No 11, Nov 72, Abstract No 11G16)

Translation: Several magnetoacoustic quantities are evaluated theoretically, particularly forces excited in the action of a pulsed field on liquid metal in a crucible placed in an inductor. The action of magnetic field pulses on zinc and aluminum in a ceramic crucible after the cooling curve enters the horizontal segment was analyzed in accordance with the theoretical data. The pulse duration of the action was 10 μ sec and the pulse repetition frequency varied in the range 0.16-2 Hz. It was found from an analysis of the data that pulse electrodynamic action is assisted by reduction of the grain; however, the degree of reduction depended on the frequency, and the optimum was within the limits 0.16-1 Hz. A uniform distribution of porosity over the entire volume of the metal was observed in all modes. Also tested were resonance conditions for pulsed action on the crystallization of steel castings. In this case resonance and reduction in grain size was observed at a pulse repetition frequency of 25 Hz. V. L.
1/1

1/2 038 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--DETERMINATION OF THE VELOCITY FIELD AT THE ENTRANCE TO AN AXIAL
STAGE WORKING IN LOW VACUUM MODES -U-
AUTHOR-(04)-BELOTELOVA, L.N., SUKHOMLINOV, I.YA., KHMARA, V.N., LUBENETS,
V.D.
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, IVUZ MASHINOSTROYENIYE, NO 1, JAN 70, PP 72-76
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--AXIAL FLOW TURBINE, TURBINE FLOW, TURBINE STAGE, FLOW
VELOCITY, CALCULATION, VACUUM MECHANICS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1987/0232 STEP NO--UR/0145/70/000/001/0072/0076
CIRC ACCESSION NO--AP0103894
UNCLASSIFIED

2/2 038

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0103894

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE PRESENTS A METHOD FOR CALCULATING THE VELOCITY FIELD AT THE ENTRANCE TO AN AXIAL VACUUM STAGE WHICH DEPENDS ON THE FLOW MADE IN THE FLOW THROUGH SECTION OF THE STAGE. THE RESULTS OF CALCULATION ACCORDING TO THE PRESENTED METHOD AND THEIR COMPARISON WITH EXPERIMENTAL DATA ARE GIVEN. THE COMPUTATIONS ARE BASED ON RESULTS OBTAINED FOR THE HYDRODYNAMIC ENTRANCE REGION OF A FLAT DUCT BY R. GUPTA (JOURNAL OF THE AMER. INST. OF CHEM. ENG., VOL 11, NO 6, 1965). THE CALCULATION ERROR, WHICH AMOUNTS TO APPROXIMATELY 10 PERCENT, INCREASES WITH INCREASED INTENSITY OF CHANGE IN THE INITIAL VELOCITY VERTICALLY WITHIN THE DUCT. FACILITY: MOSCOW HIGHER TECHNICAL SCHOOL IMENI N. E. BAUMAN.

UNCLASSIFIED

K
USSR

UDC 621.51

SUKHOMLINOV, I. YA. (Candidate of Technical Sciences), BELOTELOVA, L. N. (Aspirant), KHARAK, V. N. (Candidate of Technical Sciences), and LUBENETS, V. D. (Doctor of Technical Sciences), Moscow Higher Technical School imeni N. E. Bauman

"Determination of the Velocity Field at the Entrance to an Axial Stage Working in Low Vacuum Modes"

Moscow, IVUZ Mashinostroyeniye, No 1, Jan 70, pp 72-76

Abstract: The article presents a method for calculating the velocity field at the entrance to an axial vacuum stage which depends on the flow made in the flow-through section of the stage. The results of calculation according to the presented method and their comparison with experimental data are given. The computations are based on results obtained for the hydrodynamic entrance region of a flat duct by R. Gupta (Journal of the Amer. Inst. of Chem. Eng., Vol 11, No 6, 1965). The calculation error, which amounts to approximately 10 percent, increases with increased intensity of change in the initial velocity vertically within the duct.

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USSR

UDC 547.26'118

PINCHUK, A. M., and KHMARUK, A. M., Institute of Organic Chemistry, Acad. Sc. Ukrainian SSR

"Reaction of N,N-Dichlorodialkylphosphamides With Chlorosilanes"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 8, Aug 73, p 1861

Abstract: It was established that the N,N-dichloroamines and amides do not react with silicon, germanium and tin tetrachlorides and alkyltrichlorides. The only exception is the group of N,N-dichlorodialkylphosphamides which react with silicon tetrachloride and alkyltrichlorosilanes. The reaction occurs smoothly in the solution of the respective chlorosilane at 15-20°, two moles of chlorine being liberated. The reaction evidently begins at the phosphoryl group rather than at the N,N-dichloroamido group. The products are colorless liquids, extremely easily hydrolyzed.

1/1

USSR

KIRICHENKO, G. S., and KHMARUK, V. G., Nuclear Research Institute, Academy of Sciences Ukrainian SSR

"Collisionless Heating of Plasma Ions by an Ion Beam"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 63, No 1(7), Jul 72, pp 107-111

Abstract: The article describes results of a study of the conditions under which the interaction of an ion beam with a plasma results in the heating of the plasma ions. A plasma-beam discharge in a homogeneous magnetic field was used in the experiments. It was found that the interaction of an ion beam with a hot-electron plasma can heat the ion component to a temperature comparable to the mean thermal energy of the electrons. The heating of the plasma ions is due to the electric fields of excited ion-sound oscillations. Thus, it is possible in principle to obtain a plasma with hot electrons and ions by the longitudinal injection simultaneously of an electron beam and an ion beam into a magnetic system.

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Magnetohydrodynamics

USSR

UDC 533.922

KIRICHENKO, G. S., and KHMARUK, V. G.

"Relaxation of an Ion Beam in a Plasma With Hot Electrons"

Kiev, Ukrainskiy Fizicheskii Zhurnal, Vol 16, No 4, Apr 71, pp 645-650

Abstract: The possibility of producing nonlinear relaxation of an ion beam in a plasma under conditions of turbulent heating of electrons with the aid of the electron beam is studied. It follows from the linear theory that the effective buildup of ionizing oscillations occurs at ion beam velocities not exceeding in order of magnitude the velocity of the nonisothermal ion sound $c_s \sim (T_e/M)^{1/2}$ or when the energy of particles of the beam is comparable to the thermal energy of the electrons (T_e is electron temperature, M is the mass of the ions). The linear theory was supported experimentally in a gas discharge plasma but it was of interest to make experimental studies with fairly fast ion beams. The electron temperature necessary for this transition to higher temperatures as compared with temperatures in a gas discharge plasma is achieved with turbulent heating. The spectrum of excitations and the distribution function of ion velocities in the beam were investigated. It was shown that heating of plasma electrons leads to a broadening of the $1/2$

USSR

KIRICHENKO, G. S., and KHMARUK, V. G., *Ukrainskiy Fizicheskiy Zhurnal*, Vol 16, No 4, Apr 71, pp 645-650.

spectrum of velocities of the ion beam passing through the plasma column and to the appearance of "anomalously" fast ions and ions that have lost up to 50% of the initial energy. With a decrease in the ratio of the beam velocity to the velocity of the nonisothermal ion sound, there is observed a tendency toward the appearance of a plateau in the ion velocity distribution function. Energy scattering is accompanied by effective angular scattering of the ion beam, which rises with electron temperature and beam current. Relaxation of the ion beam occurs under excitation of ionosonic oscillations by the beam in the plasma. The frequency spectrum has a nonlinear character. The experimental results agree qualitatively with the conclusions of the quasilinear theory.

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1/2 025 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--THE KINETICS OF OXYGEN CONSUMPTION BY THE CELLS OF AZOTOBACTER
VINELANDII IN BATCH AND CONTINUOUS CULTURE -U-
AUTHOR--ANDREYEVA, N.B., KHMEI, I.A. *K*

COUNTRY OF INFO--USSR

SOURCE--MIKROBIOLOGIYA, 1970, VOL 39, NR 2, PP 280-287

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CONTINUOUS CULTURE, OXYGEN CONSUMPTION, SOIL MICROBIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1985/0415

STEP NO--UR/0220/70/039/002/0280/0287

CIRC ACCESSION NO--AP0100897

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0100897

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONCENTRATION OF DISSOLVED OXYGEN AND THE RATE OF ITS CONSUMPTION PER BIOMASS UNIT DECREASED ALONG WITH BIOMASS GROWTH DURING BATCH CULTIVATION OF AZOTOBACTER VINELANDII. THE DECREASE OF THE OXYGEN CONSUMPTION RATE AT THE CONSTANT SPECIFIC GROWTH RATE WAS DUE TO A FALL OF ITS CONCENTRATION IN THE CULTURE. THE EFFECT OF OXYGEN CONCENTRATION ON THE SPECIFIC GROWTH RATE OF AZOTOBACTER VINELANDII DURING ITS CULTIVATION IN CHEMOSTAT UNDER CONDITIONS OF LIMITED OXYGEN SUPPLY COULD BE DESCRIBED BY THE MICHAELIS MENTEN EQUATION, K_{SUBS} BEING 6.9.10 PRIME NEGATIVE 6 M O SUB 2-L, μ SUB M UTILIZATION AS WELL AS OF THE RATE OF SUCCROSE CONSUMPTION PER BIOMASS UNIT AND THE POTENTIAL RATE OF OXYGEN CONSUMPTION MEASURED IN A BUFFER SOLUTION AT THE EXCESS OF ENERGY SUBSTRATE AND OXYGEN. THE EFFECT OF OXYGEN CONCENTRATION ON THE RATE OF ITS CONSUMPTION BY THE AZOTOBACTER CELLS DURING THEIR CONTINUOUS CULTIVATION AT D EQUALS 0.2 HR PRIME NEGATIVE 1 COULD BE DESCRIBED BY THE MICHAELIS MENTEN EQUATION, K_{SUBM} BEING 8.1. 1 PRIME NEGATIVE 6 M O SUB 2-L.

UNCLASSIFIED

172 016 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--PHARMACOLOGICAL PROPERTIES OF TWO NEW UNSATURATED AMINE ALCOHOL
DERIVATIVES -U-
AUTHOR-(03)-BATRAK, G.YE., MALINGVSKIY, M.S., KHNEL, M.P.
COUNTRY OF INFO--USSR
SOURCE--FARMAKOL. TOKSIKOL. (MOSCOW) 1970, 33(2), 202-3
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--CYCLIC ALCOHOL, AMINE DERIVATIVE, CARDIOVASCULAR DRUG,
HYPERTENSION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0183 STEP NO--UR/0390/70/033/002/0202/0203
CIRC ACCESSION NO--AP0119179
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0119179

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT.

1, DIMETHYLAMINO, 5, CYCLOPENTENYL PENT, 4, YN, 2, OL HCL (A 51) ADMINISTERED I.V. TO DOGS HAD A TEMPORARY HYPOTENSIVE ACTIVITY STARTING AT 5 MG PER KG AND INDUCED BRADYCARDIA. A 51 DECREASED THE AMPLITUDE OF CONTRACTIONS ISOLATED FROG HEART AND DILATED VESSELS IN ISOLATED RABBIT EAR. THESE PROPERTIES WERE LESS SIGNIFICANT WITH 1, DIMETHYLAMINO, 6, ETHYLOCT, 6, EN, 4, YN, 2, OL HCL (A IV). LD SUB50 LEVELS S.C. IN MICE WERE 0.6 AND 0.86 G PER KG FOR A 5A AND A IV, RESP. FACILITY: DNEPROPETROVSK, MED. INST., DNEPROPETROVSK, USSR.

UNCLASSIFIED

USSR

UDC 539.3

KHMELEV, Yu. P.

"Exact Solution for Certain Hollow Shells of Medium Thickness"

V sb. Prostranstv. konstruktsii v Krasnoyarsk. kraye (Three-Dimensional Structures in the Krasnoyarsk Region -- Collection of Works), Krasnoyarsk, 1972, pp 197-210 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V136)

Translation: An exact solution is given for one problem in the theory of elasticity up to a hollow shell rectangular in plan. The calculations based on an exact solution, a refined theory and the classical theory are presented for a specific shell. Author's abstract.

1/2 009 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--HYDRATED MERCURY AND CADMIUM FLUORIDES -U-
AUTHOR--(05)-POLISHCHUK, S.A., KHMELEVA, M.G., ZADNEPROVSKIY, G.M.,
KAIDALOVA, T.A., KUPTSOVA, N.V.
COUNTRY OF INFO--USSR
SOURCE--J. LESS-COMMON METALS 1970, 21(1), 63-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--MERCURY COMPOUND, CADMIUM COMPOUND, FLUORIDE,
THERMOGRAVIMETRIC ANALYSIS, HYDRATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/0939 STEP NO--NE/0000/70/021/001/0063/0069
CIRC ACCESSION NO--AP0133025
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0133025

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOLY. RELATIONS IN THE HGO-HF-H SUB2 O SYSTEM WERE INVESTIGATED AT 25DEGREES IN THE 5-75PERCENT HF CONCN. RANGE. THE COMPN OF THE SOLID PHASES FORMED WAS ESTABLISHED BY THE USE OF SCHREINEMAKER'S METHOD. TWO COMPS. WERE ISOLATED: HGF SUB2 .2H SUB2 O, AND ITS HYDROLYSIS PRODUCT, HGOHF. IN THE CDOHF-H SUB2 O SYSTEM, CDF SUB2 .2H SUB2 O WAS ISOLATED AT SMALER THAN OR EQUAL TO 10PERCENT HF CONCN. ONLY. THE COMPS. OBTAINED WERE INVESTIGATED BY SEVERAL PHYSICOCHEM. METHODS. THERMOGRAVIMETRIC ANAL. SHOWED A LOW THERMAL STABILITY OF HGF SUB2 .2H SUB2 O AND CDF SUB2 .2H SUB2 O. THEIR SPECTRA INDICATED THE PRESENCE OF STRONG H BONDS IN THESE HYDRATES. BY THE USE OF X RAY POWDER TECHNIQUES, THE 2 HYDRATES WERE SHOWN TO BE ISOTYPICAL AND PRESUMABLY, ISOSTRUCTURAL. THEY ARE ORTHORHOMBIC, WITH SPACE GROUPS PNMM OR PNM2 SUB2, AND 8 FORMULA UNITS PER UNIT CELL, WITH CELL PARAMETERS: A 9.931 PLUS OR MINUS 0.003, B 7.078 PLUS OR MINUS 0.002, C 8.767 PLUS OR MINUS 0.003 ANGSTROM FOR CDF SUB2 .2H SUB2 O AND A 10.002 PLUS OR MINUS 0.002, B 7.151 PLUS OR MINUS 0.001, C 8.891 PLUS OR MINUS 0.001 ANGSTROM FOR HGF SUB2 .2H SUB2 O.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--16 OCT 70
TITLE--SELECTION OF THE DESIGN AND OPERATING PRACTICE FOR OXYGEN LANCES
-U-
AUTHOR--(05)-GLINKOV, M.A., DEMIN, G.I., PERMINOV, E.M., CHUKHANOV, Z.F.,
KHMELEVSKAYA, E.D.
COUNTRY OF INFO--USSR
SOURCE--STAL' 1970, 30-(2), 119-23
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--OXYGEN, OPEN HEARTH FURNACE, NOZZLE, ABSORPTION COEFFICIENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
ROXY REEL/FRAME--1995/0214

STEP NO--UR/0133/70/030/002/0119/0123

IRC ACCESSION NO--AP0115913

UNCLASSIFIED

2/22 319

UNCLASSIFIED

PROCESSING DATE--16OCT70

IRC ACCESSION NO--AP0115918

BSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RATE OF CHEM. AND HEAT ABSORPTION AS A FUNCTION OF THE DEGREE OF LANCE INCLINATION TO OPEN HEARTH BATH WAS DETD. ON MODELS, IN WHICH ABSORPTION OF NH SUB3 IN WATER FROM ITS MIXT. WITH AIR WAS MEASURED AND THAT OF HEAT SUPPLIED BY HOT AIR TO AN OIL BATH WAS EVALUATED. THE ABSORPTION COEFF. FOR A SPECIFIC RANGE OF OPTIMUM GAS CONSUMPTION, WHICH INCREASES WITH A LARGE NOZZLE DIAM., REACHES ITS MAX. VALUE WITH VERTICAL NOZZLES. NO LOWERING OF THE ABSORPTION COEFF. AFTER REACHING ITS OPTIMUM VALUE WAS NOTED FOR NOZZLES INCLINED 30-75DEGREES TO THE VERTICAL. GAS CONSUMPTION AND NOZZLE DIAM. ARE ASSOCD. BY THE ARCHIMEDES CRITERION AR (AR EQUALS W PRIME2 GAMMA G-GD GAMMA L). THE MAX. ABSORPTION IS OBTAINED WITH AR 100, AND ABSORPTION COEFF. N CAN BE GIVEN WITHIN 5PERCENT AS N EQUALS $0.96-(AR \text{ PLUS } 4.55)$. FOR A GROUP OF NOZZLES SUFFICIENTLY DISTANT (SIMILAR TO 10 DIAM. MIN.) IT IS ABOUT THE SAME FOR A GROUP OR INDIVIDUAL NOZZ.E THE ANGLE OF NOZZLE INCLINATION TO THE VERTICAL AFFECTS BOTH THE RATE OF ABSORPTION AND THE DEGREE OF STIRRING, THE OPTIMUM FOR THE PURPOSE BEING 55DEGREES FOR CLOSELY PLACED NOZZLES AND 45DEGREES FOR MORE DISTANT ONES. FACILITY: MOSK. INST. STALI SPLAVOV, MOSCOW, USSR.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--COMPRESSION AND DISTRACTION IN RECONSTRUCTIVE SURGERY OF THE
TUBERCULOUS COXITIS AND GONITIS SQUELAE -U-
AUTHOR--VERESHCHAGIN, A.P., KHMELEVSKAYA, S.L., YAKOVENKO, E.I., TUMAROVA,
V.I., SADOVOY, M.YA.
COUNTRY OF INFO--USSR

SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 3, PP
56-60
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ORTHOPEDIC SURGERY, TUBERCULOSIS, BONE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1986/0634

STEP NO--UR/0589/70/104/003/0056/0060

CIRC ACCESSION NO--AP0102620

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0102620

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE PAPER AN EXPERIENCE WITH THE USE OF THE APPARATUS COMPRESSION AND DISTRACTION IN SURGICAL TREATMENT OF TUBERCULOUS COXITIS AND GONITIS SEQUELAE IS DESCRIBED. WITHIN THE RECENT 5 YEARS 115 PATIENTS HAVE BEEN OPERATED UPON. THE PECULIARITIES OF TECHNIC OF CORRECTIVE OSTEOTOMY WITH ELONGATION OF THE FEMUR ARE REPORTED. MAXIMUM ELONGATION OF ONE OF SEGMENTS DID NOT EXCEED 8-10 CM. THE MOST FREQUENT COMPLICATIONS WERE AS FOLLOWS: SUPPURATION AND CUTTING THROUGH OF NEEDLES INSERTED VIA THE ALIFORM PROCESS OF THE ILIAC BONE (13), PARESIS OF THE FIBULAR NERVE (5), DELAYED CONSOLIDATION IN 3 PATIENTS.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--MICROCRYSTALLOSCOPIC REACTIONS FOR ETHOXYD AND KANAMYCIN -U-

AUTHOR--(02)-KHMELEVSKAYA, S.S., POZDNYAKOVA, V.T.

COUNTRY OF INFO--USSR

SOURCE--FARM. ZH. (KIEV) 1970, 25(1), 51-3

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ORGANIC OXIDE, ANTIBIOTIC, CHEMICAL REACTION, CRYSTALLIZATION,
MICROSCOPY, KANAMYCIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3003/1166

STEP NO--UR/0491/70/025/001/0051/0053

CIRC ACCESSION NO--APG130194

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0130194

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ETHOXYD (I) GAVE CHARACTERISTIC REACTIONS WITH THE FOLLOWING REAGENTS (REAGENT, SOLVENT FOR I, NO. OF AXES IN THE CRYSTALS FORMED, EXTINCTION ANGLE, ELONGATION SIGN, N SUBGAMMA, N SUBALPHA, BIREFRINGENCE, MIN. DETECTABLE AMT. IN MU G, LIMITING CONC. GIVEN): 1PERCENT AGNO SUB3, HCONME SUB2, 1, 90DEGREES, NEG., 1.690, 1.653, 0.037, 4.53, 1:4400; I SOLN. IN CONCD. HCL, HCONME SUB2, 1, 90DEGREES, NEG., 1.600, 1.567, 0.033, 0.16, 1:125,000; A SOLN. OBTAINED BY DISSOLVING 2 G NH SUB4 SCN AND 1 G ZNSO SUB4 IN 50 ML H SUB2 O, ME SUB2 CO, H SUB2 O (3:1), 1, 90DEGREES, NEG., NEGATIVE, NEGATIVE, NEGATIVE, 0.48, 1:41,700. A 0.2PERCENT SOLN. OF KANAMYCIN WITH A FRESHLY PREPD. REINECKE SALT GAVE ANISOTROPIC, MONOAXIAL CRYSTALS WITH EXTINCTION ANGLE 90DEGREES, NEG. ELONGATION SIGN, N SUBGAMMA 1.686, N SUBALPHA 1.639, AND BIREFRINGENCE 0.047. THE MIN. DETECTABLE AMT. WAS 0.2 MU G AND THE LIMITING CONC. 1:100,000. FACILITY: LVOV MED. INST., LVOV, USSR.

UNCLASSIFIED

1/2 CIG UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--ACTION OF N ACETYLCOLCHAMINE ON EHRLICH ASCITES TUMOR WITH
SYNCHRONIZED CELL DIVISION -U-
AUTHOR-(02)-KHMELEVSKIY, O.V., KHMELEVSKIY, V.I.
COUNTRY OF INFO--USSR
SOURCE--TSITELUGIYA 1970, 12(5), 582-4
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--NEUSE, MITOSIS, TUMOR
CENTREL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FKAME--3006/0274 STEP NO--UR/9053/70/012/005/0632/0684
CIRC ACCESSION NO--AP0134079
UNCLASSIFIED

2/2 G10 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AP0134079
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MITOSIS OF MOUSE EHRLICH ASCITIC
TUMORS CELLS WAS TEMPORARILY RETARDED WHEN THE MICE WERE GIVEN BETAIN
(10 MG, I.P.), AFTER WHICH THERE WAS A GREAT INCREASE IN MITOTIC
ACTIVITY. N ACETYLCOLCHAMINE (2 MUG, I.P.), GIVEN 6 HR AFTER THE
BETAIN, ENHANCED THE MITOTIC ACTIVITY INCREASE. HENCE THE 2 COMPOS.
ARE USEFUL IN SYNCHRONIZING CELLULAR DIVISION. FACILITY: URAL
BR., ALL UNION CHEM.-PHARM. INST., SVERDLOVSK, USSR.

UNCLASSIFIED

USSR

UDC 621.374.5 (088.8)

TRIFONOV, V.V., SHONJROV, S.A., LEMZYAKOV, S.R., ~~KHMELEVSKIY, V.I.~~
PRILEPSKIY, V.M. (Leningrad Electrical Engineering Institute)

"Magnetostrictive Transducer For Delay Lines"

USSR Author's Certificate No 296154, filed 25 Feb 69, published 9 Apr 71
(from RZh:Radiotekhnika, No 2, Feb 72, Abstract No 2G241P)

Translation: A magnetostrictive transducer for a delay line is proposed, which contains a winding with a few loops connected with an acoustic line, a matching transformer, and an acoustic damper. With the object of an increase of the product of the transmission coefficient by the power in the band of the frequencies being transmitted, the transducer winding is made in the form of two adjacent sections situated at the acoustic line and connected across the corresponding matching transformers into the circuit of an electromagnetic delay line. In order to decrease the dissipation inductance and widening of the band of the frequencies being transmitted, the step-down windings of the transformers are made in the form of cylindrical rods with a disk bulge [utolshchenyy] in the middle part and with the cores of the step-up windings at the ends placed in cup-shaped cavities connected electrically with the ends of the rod, and in so

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USSR

TRIFONOV, V. V. et al, USSR Author's Certificate No 296154

doing a section of the winding of the transducer is connected between the edge of each cup-shaped cavity and the disk. With the object of increasing the efficiency, sections of the winding are made in the form of solenoids and each section -- in the form of two adjoining coils of an insulated wire, the diameter of which is equal to the internal diameter of the solenoid. The alignment of the acoustic line in the latter is accomplished with the aid of bushings /vtulka/ located at the ends of the winding, and the transformer, magnet, and acoustic damper are attached to a common housing.

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85

1/2 G10 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--ACTION OF N ACETYLCOLCHAMINE ON EHRlich ASCITES TUMOR WITH
SYNCHRONIZED CELL DIVISION -U-
AUTHOR--(02)-KHMELEVSKIY, G.V., KHMELEVSKIY, V.I.
COUNTRY OF INFO--USSR
SOURCE--TSITCLUGIYA 1970, 12(5), 682-4
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--MOUSE, MITOSIS, TUMOR
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FAME--3006/0274 STEP NO--UR/9053/70/012/065/0682/0684
CIRC ACCESSION NO--AP0134079
UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AP0134079
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MITOSIS OF MOUSE EHRLICH ASCITIC
TUMORS CELLS WAS TEMPORARILY RETARDED WHEN THE MICE WERE GIVEN BETAININE
(10 MG, I.P.), AFTER WHICH THERE WAS A GREAT INCREASE IN MITOTIC
ACTIVITY. N ACETYLCOLCHAMINE (2 MUG, I.P.), GIVEN 6 HR AFTER THE
BETAININE, ENHANCED THE MITOTIC ACTIVITY INCREASE. HENCE THE 2 COMPS.
ARE USEFUL IN SYNCHRONIZING CELLULAR DIVISION. FACILITY: URAL
BR., ALL UNION CHEM.-PHARM. INST., SVERDLOVSK, USSR.

UNCLASSIFIED

USSR

UDC 620.9.001.24

YAKUSHA, G. B., BARATOV, E. I. MAN'KOVSKIY, A. L., ~~KHMELEVSKIY, YE. I.~~

"Procedural Problems of Forecasting the Development of Regional Power Engineering to the Year 2000"

Vopr. metodol. regional'n. ekon. prognozir. (Problems of Procedural Regional Economic Forecasting), Novosibirsk, 1970, pp 207-221 (from RZh-Teploenergetika, No 2, Feb 71, Abstract No 2G1)

Translation: Research in predicting the development of power engineering in the USSR to the year 2000 should include the prospects for development of power engineering of individual republics or economic regions. The forecasting procedure used for the USSR is to a great extent inapplicable for individual economic regions. Forecasting such complex economic phenomena as the development of branches of the national economy, in particular, power engineering, requires the use of a set of forecasting methods -- normative, expert estimates, simulation, extrapolation, and so on. The development of the forecasts to the year 2000 requires careful preparation of the initial base. The statistical series of the base period must be highly representative with respect to the forecasted period. As the base it is expedient to take statistical series for the postwar years (approximately from 1950). The level and nature of

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USSR

YAKUSHA, G. B., et al., Vopr. metodol. regional'n. ekon. prognozir. Novosibirsk, 1970, pp 207-221

development of an economic region and its energy base (types and capacities of the generating sources, electric power network, power systems, and so on) are determined by the presence of primary energy sources economically expedient and practically accessible for development. Insurance of primary power sources and prospective estimation of the initial energy base are acquiring special urgency for regions having a highly developed multiple-branch economy characterized by significant power consumption. The basic areas of development of power engineering of the region permits the development of recommendations with respect to scales of production of the power resources proper and those received from the outside (fuel, electric power), the scales of development of atomic power engineering, and so on. The most widespread tool of optimization of the fuel and energy balance of the region is the production-distribution model which permits optimization of the scales of extraction and production of local forms of energy resources, distribution of the energy resources between individual networks and consumers and also the placement scheme for the large electric power plants and internetwork flows of electric power. The bibliography has 8 entries.

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USSR

UDC 621.371.332.1

TROYEPOLOVSKIY, V. A., KHMELEVTSOV, S. S., and TSVYK, R. SH.

"Using a Position-Sensitive Photodiode for Recording Approach Angles of Optical Radiation"

Tomsk, Izvestiya VUZ -- Fizika, No 9, 1973, pp 149-151

Abstract: Because the photographic and photoelectronic methods of recording the approach angles of light rays have a number of disadvantages, the authors of the present brief communication used a position-sensitive diode with an output signal amplitude which is, in general, proportional to the intensity of the incident beam and to the shift in the center of the light spot from some zero position. The photodiode was tested for its effectiveness in this application and its characteristic plotted by an LG-36 helium-neon laser operating at a wavelength of 0.63μ and with its intensity varied by a mechanical modulator at a frequency of 4 k Hz. The photodiode output was recorded on a V6-2 selective microvoltmeter. Curves are given for the photodiode output voltage as a function of the shift of the light spot for various values of the incident beam, and for the slope of the characteristic as a function of the incident beam intensity. Also given is a block diagram of the equipment used by the authors to measure approach angles of optical radiation, and curves for the fluctuation dispersion of the measured angles as a function of the receiver aperture dimensions for various temperature gradients.

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USSR

UDC 621.373.826:53

POGODAYEV, V. A., KHMELEVTSOV, S. S., and CHISTYAKOVA, L. K.

"Vaporization of Small Drops in an Optical Radiation Field"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl.
(Tenth All-Union Conference on the Propagation of Radio Waves;
Report Theses--collection of works) "Nauka," 1972, pp 139-143 (from
RZh--Radiotekhnika, No 10, 1972, Abstract No 10D586)

Translation: The dynamics of the vaporization of water drops with
radii of about 20 microns in an aerosol atmosphere is investigated.
Two modes are considered: surface vaporization, and explosion. In
the explosion mode, the law for the scattering of the small drops
obtained through the explosion of the initial particle of aqueous
aerosol was studied. A. K.

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KHMELEVTSOV, S.S.

Rm / K-160 / G-MAT-113
 11 Dec 78

63

the error in calculated N should not exceed 15 to 25% for $0.1 < \theta < 0.9^\circ$.
 Using the same model the authors arrive at theoretical values of $r_m(h)$ which are claimed to be accurate within 15--30%.

Test data confirming the foregoing were obtained in 1969--70 from vertical probes at 5.75 MHz and $r = 50\mu s$, with a 120x120 directional pattern at medium latitudes. Further extensive tests were made at Gorb in 1970 and are to be treated in a subsequent paper.

Mironov, V. L., and S. S. Khmelevtsov.
Laser beam divergence during propagation
in a turbulent atmosphere along an oblique
path. IVUZ Radiofiz. no. 5, 1972, 743--750.

The authors develop expressions which define the turbulence broadening effect on laser propagation in the atmosphere. The general case of an inclined path is treated, requiring that different turbulence characteristics of specific altitude ranges be taken into account. The argument is given in terms of the function $C_n^2(x')$ which is defined as the structural characteristic of refractive index variation over a path length x' . Since this variation has been found to be a function of extended convection, it is convenient to examine C_n^2 directly as a function of altitude h , after the manner proposed by Tatarskiy. Thus for the dynamic boundary layer ($h < 50$ m) this characteristic is given by

$$C_n^2(h) = C_n^2(h_0) (h/h_0)^{-\frac{1}{2}}, \quad (1)$$

where h_0 is some arbitrary transmitter height. At higher altitudes where free convection applies ($h \geq 1$ to 3 km), the relation alters to

$$C_n^2(h) = C_n^2(h_0) (h/h_0)^{-\frac{1}{2}}, \quad (2)$$

KHMELEVTSOV, S. S.

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TECHNICAL TRANSLATION

File # PSICAIT 23-2015-72

27 April 72

ENGLISH TITLE: PROBLEMS OF LASER BEAM DATA TRANSMISSION
PROCEEDINGS OF THE FIRST ALL-UNION CONFERENCE, KIEV,
SEPTEMBER 1966

RUSSIAN TITLE: PROBLEMY PEREDACHI INFORMATSII LAZERNYM IZLUCHENIYEM

AUTHOR: L. A. DERVYGIN, ET AL.

SOURCE: KIEV ORDER OF LENIN STATE UNIVERSITY
INENI T.G. SCHEVCHENKO

Translated for FSTC by ACST

NOTICE

The contents of this publication have been translated as presented in the original text. No attempt has been made to verify the accuracy of any statement contained herein. This translation is published with a minimum of copy editing and graphics preparation in order to expedite the dissemination of information.

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- 1/11/72

USSR

UDC 551.573

BUKATY, V. I., KOPYTIN, Yu. D., POGODAYEV, V. A., ~~KHMELEVTSOV, S. S.~~,
CHISTYAKOVA, L. K., Institute of Atmospheric Optics of the Siberian
Department of the Academy of Sciences USSR, Siberian Physicotechnical
Institute imeni V. D. Kuznetsov at Tomsk State University

"The Light-Reactive Motion of Aerosol Particles Acted on by Optical
Radiation"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy, Fizika, No. 3, 1972, pp 41-44

Abstract: A study of the motion of water droplets of an aerosol under the
action of optical radiation is described. It is noted that in the radiation
heating of a water droplet, the dimensions of which are considerably
greater than the wavelength of the radiation, the radiation process has a
highly asymmetric character due to anisotropy of the light field in the
droplet. The asymmetry of the evaporation process leads to the appearance
of a resulting force from the outflow of evaporated material and causes
"light-reactive" motion of the droplet in the optical field. An expression
is obtained for the light-reactive force, taking into account the refracting
properties of the spherical surface. Experimental studies were conducted

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USSR

BUKATY, V. I., et al, Izvestiya Vysshikh Uchebnykh Zavedeniy, Fizika, No. 3, 1972, pp 41-44

with drops fastened at the end of a vertically placed grid. The breaking away of drops was slight and was considered in finding the rate of light-reactive motion from the equation for force oscillations of a physical pendulum. The coefficient of elasticity of the grid was determined experimentally on the basis of the oscillation period measured. The initial and final dimensions of the droplet were recorded with a SKS-1M motion picture camera. A type GOR-0.2 ruby laser was used as an activating source for the light pulse energy of 0.15 joule. Calculations of velocities caused directly by light pressure and the action of radiometric forces on the part of the gas medium showed that their effect on the dynamics of the water particles was slight for the values of the parameters used in the experiment. The experimental and theoretical results agreed satisfactorily.

2/2

- 86 -

USSR

UDC 621.378.325

S'YEDIN, V. Ya., KHMELEVTSOV, S. S., Institute of Atmospheric Optics of the Siberian Department of the Academy of Sciences USSR

"Broadening of Focused Light Beams in a Turbulent Atmosphere"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy, Fizika, No. 3, 1972, pp 91-96

Abstract: The stochastic parameters of a focused light beam when propagating in a turbulent atmosphere were studied experimentally. It is noted that scattering by heterogeneities of the index of refraction and random refraction of the entire beam as a whole lead to refraction of the beam when especially limited beams of light propagate in a turbulent atmosphere. The average intensity of the beam $\langle J \rangle$ decreases both on the axis of the optical system and in a coordinate system connected with the center of gravity of a beam making random motions in the plane of the receiver. Expansion of light beams is determined by the parameters of the beams themselves and by the magnitude of the structural constant of fluctuations of the index of refraction of air C_n^2 . The case in which the distribution of the complex field amplitude at the output pupil of the light source is given by the formula

1/2

USSR

S'YEDIN, V. YA., and KHELEVTSOV, S. S., Izvestiya Vysshikh Uchebnykh Zavedeniy, Fizika, No 3, 1972, pp 91-96

$$U(r)|_{L=0} = U_0 \exp - \left[\frac{\rho^2}{2a_0^2} + i \frac{\kappa \rho^2}{2R} \right]$$

is considered here; where L is the distance along the axis directed along the beam, ρ is the radial coordinate in the plane perpendicular to the direction of propagation, a_0 is the effective width of the beam, and R is the radius of curvature of the wave front at the output pupil. In this experimental study of broadening and random wanderings of focused beams propagating in a turbulent atmosphere, the measurements of statistical characteristics of the broadening and random wanderings were conducted over paths of 1.2, 3.5, and 9.8 km, which were partially over the surface of a river. The average height of the path varied from 10 to 30 m. The following lasers served as radiation sources: LG-36A helium-neon laser operating in an axial vibration mode, the LG-55 single-mode and the GOR-100M pulsed ruby laser operating in a quasisingle mode. The linear dimensions of the beam at the focus are shown as a function of the diameter of the illuminator; the dimensions of the light spot under focusing through a turbulent atmosphere reach a minimum and then are saturated, with an increase in the diameter of the illuminator.

2/2

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USSR

UDC 621.371.532.1

S^{YEDIN}, V.YA., ~~KHMELETSOV, S.S.~~, TSVYK, R.SH. [Institute Of Atmospheric Optics, Siberian Branch, AS, USSR]

"Intensity Fluctuations In A Focused Light Beam Passed Through Turbulent Atmosphere"

Izv. VUZ: Radiofizika, Vol XV, No 5, May 72, pp 798-800

Abstract: The paper is concerned with an experimental study of the intensity fluctuations at the focal point of a laser beam, both at the axis of the optical system and in a randomly wandering beam. The applicability is studied of the results of a calculation by K.S. Gochelashvili [Izv.VUZ:Radiofizika, 14, No 4, 592 (1971)] to a description of the fluctuations in a focused beam. The experimentally measured intensity fluctuations are compared with calculated data. 3 fig. 5 ref. Received by editors, 10 May 1971.

1/1

USSR

UDC 621.378.325

MIRONOV, V.L., KHMELEVTSOV, S.S. [Institute Of Atmospheric Optics, Siberian Branch, AS, USSR]

"Broadening Of A Laser Beam Propagating Along Sloping Course In A Turbulent Atmosphere"

Izv. VUZ: Radiofizika, Vol XV, No 5, May 72, pp 743-750

Abstract: Calculations are presented on the turbulent broadening of a laser beam propagating along sloping courses in the atmosphere where the structural characteristics change with height. The calculations are based on the solution shown in a paper by V.I. Tatarskiy [Preprint AS, USSR. Otdeleniye okeanologii, fiziki atmosfery i geografii, Moscow, 1970] of an equation for a mutual coherence function of the second order, obtained in an approximation of the Markov process. The model selected of the distribution of the structural characteristics of the fluctuations of the refractive index with respect to height corresponds to the unstable temperature stratification in the atmosphere (convection conditions). The graphs obtained for the equivalent distance, which make possible an evaluation of the turbulent broadening during propagation from the bottom upward, take advantage of the results of Tatarskiy's work corresponding $1/2$

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USSR

MIRONOV, V. L., KHMELEVTSOV, S. S., Izv. VUZ: Radiofizika, Vol XV, No 5, May 72, pp 743-750

to a uniform course. It is shown that with propagation downward, the magnitude of the turbulent broadening has a maximum at a specific height of the transmitter. The authors thank T.D. Ivanov and M.S. Belen'kom for conducting the numerical calculations on an electronic computer. 4 fig. 17 ref. Received by editors, 13 September 1971.

2/2

Acc. Nr:

AP0043929

Abstracting Service: 5/70
INTERNAT. AEROSPACE ABST.

Ref. Code:

4R0141

KHMELEVTSOV S.S.

A70-23135 / Intensity fluctuations in a pulsed laser beam during propagation in the atmosphere at distances up to 9.8 km (Fluktuatsii intensivnosti v puchke impul'snogo OKG pri rasprostraneni v atmosfere na rasstoianiiakh do 9,8 km). V. Ia. S'edin, S. S. Khmelevtsov, and M. F. Nebol'sin (Tomskii Gosudarstvennyi Universitet, Tomsk, USSR). *Radiofizika*, vol. 13, no. 1, 1970, p. 44-49. 8 refs. In Russian. 22 V VUZ

Experimental study of intensity fluctuations in the transverse cross section of a pulsed laser beam after passing a distance of 9.8 km in the ground layer of a turbulent atmosphere. Attention is given to variations in dispersion and to changes in the correlation function of intensity fluctuations as a function of distance. The divergence of a focused beam in a turbulent atmosphere is also examined. T.M.

MT

REEL/FRAME

19770355

21

Acc. Nr:

AP0043926

Abstracting Service: 5/70
INTERNAT. AEROSPACE ABST.

Ref. Code:

4R0141

A70-23142 # Fluctuations of laser beam intensity during propagation in a turbulent atmosphere (Fluktuatsii intensivnosti lazernogo luch'a pri rasprostraneni v turbulentnoi atmosfere). S. S. Khmelevtsov and R. Sh. Tsyk (Tomskii Gosudarstvennyi Universitet, Tomsk, USSR). Radiolizika, vol. 13, no. 1, 1970, p. 146-148. 9 refs. In Russian.

Experimental verification of Fried and Seidman's (1967) theoretical study of intensity fluctuations in a collimated and focused laser beam and Gurvich's (1969) study of the intensity fluctuations in a divergent beam. The theoretical results are found to correlate well with corresponding measurements performed for a helium-neon laser operating at a wavelength of 0.63 micron, under various meteorological conditions.

NT

REEL/FRAME
19770352

1/2 051 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--INVESTIGATION OF INTENSITY FLUCTUATIONS IN A BOUNDED OPTICAL BEAM
-U-
AUTHOR--(02)--KHMELEVISOV, S.S., TSVYK, R.SH. K
COUNTRY OF INFO--USSR
SOURCE--FIZIKA, IZV. V.U.Z. VOL. 13, NO. 2, 1970, P. 52-56
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--LASER BEAM, CORRELATION FUNCTION, PROBABILITY DISTRIBUTION,
RADIATION INTENSITY, OSCILLATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/1125 STEP NO--UR/0139/70/013/002/0052/0056
CIRC ACCESSION NO--AP0124780
UNCLASSIFIED

2/2 051

UNCLASSIFIED

PROCESSING DATE—30OCT70

CIRC ACCESSION NO—AP0124780

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTAL INVESTIGATION OF THE DISPERSIONS AND CORRELATION FUNCTIONS OF INTENSITY FLUCTUATIONS OF LASER EMISSION AT DISTANCES OF 0.5, 2.4, AND 7.0 KM. IT IS SHOWN THAT THE AVERAGING EFFECT OF THE RECEIVER APERTURE IS WEAKER THAN THE THEORETICAL EFFECT. FOR STRONG FLUCTUATIONS, THE CORRELATION TIME OF INTENSITY FLUCTUATIONS DEPENDS ONLY SLIGHTLY ON THE DISTANCE. FOR APERTURES OF THE RECEIVER SYSTEM HAVING DIMENSIONS MUCH GREATER THAN THE DIMENSION OF THE LASER BEAM, THERE OCCUR SUBSTANTIAL INTENSITY FLUCTUATIONS, WHILE THE PROBABILITY DISTRIBUTION FUNCTION OF THE FLUCTUATIONS IS CLOSE TO THE NORMAL LAW. FACILITY: TOMSKII GOSUDARSTVENNYI UNIVERSITET, TOMSK, USSR.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--PMR SPECTRA OF PRODUCTS OF THE REACTIONS OF 1,3,5, TRINITROBENZENE
AND 2,4,6, TRINITROANISOLE WITH SODIUM METHYLATE -U-
AUTHOR--(03)-SHEYN, S.M., BROVKO, V.V., KHMELINSKAYA, A.D.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(4), 781-4

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MAGNETIC RESONANCE, SPECTRUM, NITROBENZENE, METHOXY COMPOUND,
ORGANIC COMPLEX COMPOUND, ORGANOSODIUM COMPOUND, ANISOLE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/1945

STEP NO--UR/0366/70/006/004/0781/0784

CIRC ACCESSION NO--AP0125534

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0125534
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE REACTION GIVES
MONOMETHOXY, DIMETHOXY, AND TRIMETHOXY SIGMA COMPLEXES (MEISENHEIMER
COMPOS.) OF 1,3,5,TRINITROBENZENE OR 2,4,6,TRINITROBENZENE. PMR
SPECTRA SHOWN THAT THE TRIMETHOXY COMPLEXES HAVE 2 NEG. ELEC. CHARGES.
THE FORMATION OF LESS STABLE TRINITROMONOMETHOXYPHENYL ANION RADICALS
WAS ALSO DETECTED. THE FORMATION OF THE MONOMETHOXY AND DIMETHOXY SIGMA
COMPLEXES OCCURS SIMULTANEOUSLY. FACILITY: NOVOSIBIRSK. INST.
ORG. KHIM., NOVOSIBIRSK, USSR.

UNCLASSIFIED

K

USSR

UDC 616-001.28-036.11-092.9-07:616.151.5-02:615.362.018:547.757

DOROFYEV, V. M. and KHNYCHEV, S. S., Laboratory of Experimental Hematology,
Department of Radiation Pathophysiology, Institute of Medical Radiology, Academy
of Medical Sciences USSR, Obninsk

"The Effect of Exogenous Serotonin on the Aggregation of Blood Platelets and on
Some Indices of Blood Coagulation in Experimental Acute Radiation Sickness"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 6, 1970, pp 21-23

Abstract: Injection of serotonin (0.1 mg/kg) into rats on the seventh day after
exposure to gamma-irradiation (600 r) increased its concentration in the blood
of experimental animals to the level observed in healthy rats, but had no effect
on the aggregation of blood platelets or on such hematological indices as
activity of factor XIII, plasma recalcification time, or the prothrombin time.
It would appear, then, that impairment of the process of aggregation of blood
platelets in acute radiation sickness is unrelated to the decrease in blood
serotonin associated with this disorder. This bears out the view that serotonin
in physiological doses not play an important part in blood coagulation.

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Khmel'kov, V. P.

SPRS 56499
14 JULY 72

150

In order to ascertain the capability of the body to adapt, applicable to an evaluation of tolerance and reliability of body functions to prolonged space flights, a study was made of the nervous, cardiovascular, endocrine, immunobiologic and other systems during a 60-day experiment in which six subjects in the age group 28-35 years participated. The experiment involved five stages: 11 days -- collecting background data; two days -- restructuring of the rhythm with four-hour cycles of work, rest and sleep; five days -- restoration period; twelve days -- climatic hypokinesia; eleven days -- study of the aftereffect (dynamics of restoration). During the period of 12-day hypokinesia there was a 4.8-hour restructuring of the diurnal rhythm of three subjects (first group) during the first two days of hypokinesia and another three subjects (second group) during the last two days of hypokinesia.

During the experiment we detected definite changes in functioning of the nervous system, manifested in a lability of autonomic reflexes, frequently exceeding the limits of

capabilities of the body it is now customary to use different load examinations and tests in approximate form stimulating various kinds of spaceflight (hypokinesia, irradiation, hypoxia, accelerations, change in diurnal rhythm, etc.). Study of the influence of these factors on the dynamics of body adaptation is most frequently accomplished with but exposure to a single factor.

Article by Ye. I. Sokolov, A. Ye. Tizul, Yu. S. Malinetskii and V. P. Khmel'kov: Moscow, Actualnyye Voprosy Kosmonavticheskoy Biologii i Meditsiny (Current Problems in Space Biology and Medicine), Moscow, 1971, pp 326-327.

EVALUATING THE FUNCTIONAL CAPABILITIES OF THE BODY UNDER THE COMBINED INFLUENCE OF EXTERNAL FACTORS

KHMEI'KOV, V. P.

UFRS 57517
15 Nov 70

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The investigations were made using 129 subjects; 67 of these were confined in closed space from 3 to 70 days, 39 were in temperature chambers at an increased temperature and humidity for 4-72 hours, and 23, outfitted with special suits, for a period of two to eight hours performed different kinds of work in the pressure chamber with a rarefaction of the surrounding air corresponding to an altitude of 4-37 km (I. T. Akhmetiev, et al.; D. G. Makarov, et al.). We registered the ECG and a number of other medical indices using on-board and clinical instrumentation. In conducting the investigations we compared the electrodes used in flight of the "Vostok," "Voskhod," and "Soyuz" ships (N. A. Azadshanyan, et al.; Pervyya Kosmicheskaya Poluzhizn L. I. Kakurin, et al.; A. G. Zorin, et al.), electrodes developed by different foreign firms, including those used in the "Gemini" and "Apollo" ships (Gordon and Baker; Weltman, et al.), and 19 modifications of electrodes created in the course of this study. In all subjects not less than two to five times a day we checked interelectrode resistance for a d-c current, and in most cases also determined the interelectrode

In conducting routine medical monitoring of the condition of a human subject confined in closed ecological systems under ground conditions or during flight the methods which have won broadest recognition are electrocardiography, pneumography and monitoring of body temperature (O. G. Garenko; Yu. G. Nefedov, et al.; Pervyya Kosmicheskaya Poluzhizn Cheloveka (First Human Space Flight); Weltman, et al.). Methodological difficulties arise most frequently when registering the ECG because prolonged contact of the electrodes with the body causes an irritation of the skin up to appearance of ulceration. Attempts to replace monitoring of cardiac activity by the resistivity of bioelectric activity by some other methods (using electromagnetic, mechanical or capacitance effects) for the time being have been unsuccessful (Filizov and Halverson; Weltman, et al.; R. K. Bayevskiy).

[Article by D. G. Makarov, V. P. Khmei'kov, V. A. Surovskoy and A. M. Pirogov, Moscow, Kosmicheskaya Biologiya i Meditsina, Vol. 6, No. 5, September-October 1972, pp. 79-84, submitted for publication 12 July 1971]

PROLONGED MONITORING OF HUMAN CARDIAC BIOELECTRIC ACTIVITY DURING GROUND EXPERIMENTS AND IN SPACE FLIGHT

UDC 612.172.4-06:659.78

11

USSR

KHMELOV, V. P.

"Effect of Protein Deficiency on the Elimination of 5-Hydroxy-indolacetic Acid in Rats Under Conditions of Hypokinesia and Overloading"

Moscow, V sb. Aktual'n. voпр. kosmich. biol. i med. (Current Problems in Space Biology and Medicine--collection of works), 1971, pp 280-281 (from RZh-Biologicheskaya Khimiya, No 21, Nov 71, Abstract No 21F1368)

Abstract: Feeding rats a diet of 3 percent protein over a 45 day period reduces the concentration of 5-hydroxyindolacetic acid in the urine by approximately 40 percent. Combination of a low-protein diet with hypokinesia leads to a further reduction in the concentration (by 55 percent). Combination of hypokinesia and accelerations (centrifuging once for 6-8 minutes at an overload of 7 units) against a background of protein deficiency causes less of an effect (by 20 percent), which the author attributes to adaptation processes in the organism in response to the effect of stress. Resume.

1/1

Antennas

USSR

UDC 621.396.677.8

NARBUT, V. P., KHMEI'NITSKAYA, N. S.

"Polarization Structure of Axially Symmetrical Mirror Antenna Radiation"

Moscow, Radiotekhnika i elektronika, No 10, 1970, pp 2047-2059

Abstract: Asserting that comparatively little research has been done on the polarization structure of noise in sharply directed antennas, the authors analyze this structure in axially symmetrical reflecting antennas by the method of geometrical diffraction theory. This method is much simpler and more graphic than the method of currents. It is explained and a formula is derived for computing the noise by that method. In their research into the polarization structure in parabolic antenna noise, the authors note that the formulas they obtain are not valid in the main lobe region of the directional diagram without additional transformations, and that, because of their use of an asymptotic solution of the diffraction problem, there is a zone of indeterminacy in the end lobe of the circular diagram. Results of experiments made to determine the structure of the noise polarization are also given.

1/1

Acc. Nr.: AP0046775

Ref. Code: UR 0113

USSR

UDC 621.43-713:629.113

MINKIN, M. L., Candidate of Technical Sciences, and KHMEI'NITSKIY, E. YE., NAMI
[Abbreviation unknown]

"A New Branch Standard for Thermostats With Solid Filler"

Moscow, Avtomobil'naya Promyshlennost' (Motor Vehicle Industry), No 1, 1970,
pp 26-27

Translation: The advantages of thermostats with solid filler and direct valve
stroke are presented, and initial data are substantiated. A description is given
of the basic contents of the branch standard ON 025 284-68 for these thermostats.
(1 illustration)

18 87

Reel/Frame

19790079

USSR

UDC 621.317.328

KHMEI'NITSKIY, F. A.

"Evaluating the Quality of a Short-Wave Communication Channel for Discret Signal Transmission"

Moscow, Elektrosvyaz', No 10, 1970, pp 18-27

Abstract: The author shows that the variations in signal level in real short-wave channels differ significantly from those variations which are normally accepted for calculation. An approximation close to real signal level variation can be achieved by taking into consideration those parameters of the ionosphere which are associated with transmission in the case of an actual transmission route. A method is given for estimating signal level variation which in turn is related to the parameters of the ionosphere (propagation model). A method is also given for evaluating channel quality along with calculations. The calculations are in agreement with many particularities of real short-wave channels. Original article: four figures, three tables, six formulas, and 17 bibliographic entries.

1/1

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USSR

UDC 547.75.07:543.51

ZHIGULEV, K. K., KHMEL'NITSKIY, R. A., GRANDBERG, I. I., and VYSOTSKIY, V. I., Moscow Agricultural Academy imeni K. A. Timiryazev

"Indoles. XXVII. Mass-spectrometry of Compounds with Eserine and Homoeserine Skeletons"

Riga, Khimiya Geterotsiklicheskih Soyedineniy, No 8, Aug 72, pp 1065-1069

Abstract: Mass-spectroscopical data on 12 derivatives of dinordesoxy-9-methyleseroline (I) and dinordesoxy-10-methylhomoeseroline (II) have been reported. The derivatives of (I) are somewhat more stable toward electronic bombardment than (II). Introduction of a methyl or methoxy group onto the benzyl ring or N_(a)-position increased the stability of the molecular ion.

The pyrrolidine or piperidine rings are the first to undergo fragmentation, so that the stability of molecular ions must be connected with the localization of the charge on the N_(b) nitrogen atom. Most probably the principal dissociation involves the breakdown of the ring, splitting off the methyl group, forming ions with a mass of 30. The most intensive peaks obtained from dissociative ionization correspond to the formation of pseudomolecular ions of 2,3-dimethylindole derivatives. A mechanism of the formation of regrouped pseudomolecular ions $RC_6H_4N^+H_2$ has been proposed.

1/1

- 43 -

USSR

UDC 543.51:547.743

KLYUYEV, N. A., KHEMELNITSKIY, R. A., NIKITINA, S. B.,
GRANDBERG, I. I.

"Mass Spectra and Structure of Some Pyrrolines"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 7, No 10, Oct 71,
pp 2038-2043

Abstract: The article describes results of a mass spectrometric study of the behavior of compounds of the pyrroline class under the action of electron impact. The following pyrrolines were studied: 2-methyl- Δ^1 -pyrroline, 2-ethyl- Δ^1 -pyrroline, 2-isopropyl- Δ^1 -pyrroline, 2-phenyl- Δ^1 -pyrroline and 1,2-dimethyl- Δ^2 -pyrroline. The mass spectra were obtained at a temperature of 2500°, accelerating voltage of 2 kv, cathode emission current of 1.5 and 1.0 ma and ionizing electron energies of 50, 30, 20 and 15 ev. Relative sensitivity coefficients and relative ionization cross-sections were determined. It was found that there is a linear relation between the number of carbon atoms in the alkyl substituent and the relative ionization cross-section, described 1/2

USSR

KLYUYEV, N. A., et al, Zhurnal Organicheskoy Khimii, Vol 7, No 10,
Oct 71, pp 2038-2043

by a regressive equation. It is suggested that in the excited
state the studied compounds have an enamine structure and their
decomposition path is the result of this form.

2/2

- 33 -

1/2. 014 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--ANALYTICAL CHARACTERISTICS OF A CYCLOIDAL TYPE MASS SPECTROMETER
MKH1203 -U-
AUTHOR--(05)--KUZMIN, A.F., KRIVTSOV, B.S., POLYAKOVA, A.A., RAFALSON, A.E.,
KHMELNITSKIY, R.A.
COUNTRY OF INFO--USSR
SOURCE--ZAVOD. LAB. 1970, 36(2), 243-5
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--MASS SPECTROMETER, ATOMIC MASS, QUANTITATIVE ANALYSIS, ERROR
ANALYSIS/(U)MKH1203 MASS SPECTROMETER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/1192 STEP NO--UR/0032/70/036/002/0243/0245
CIRC ACCESSION NO--AP0124846
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--30OCT70

IRC ACCESSION NO--AP0124846

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE APP. HAS BEEN DESIGNED FOR A PERIODIC ANAL. OF THE COMPN. OF LIQ. AND GASEOUS SAMPLE IN THE RANGE OF 2-150 AT. MASS UNITS WITH A VAPOR PRESSURE LARGER THAN OR EQUAL TO 30 MM HG AT 100DEGREES. ITS USE IS ADVANTAGEOUS IN THE ANAL. OF MICROADMIXTS. AND IN THE ANAL. OF MIXTS. OF POLAR COMPS.; HOWEVER, IT CAN BE USED ALSO FOR A RAPID ANAL. OF LIQS. AND FOR SOME KINDS OF ISOTOPIC ANAL. THE MKH1203 HAS A LOW BACKGROUND AND LOW SORPTION OF THE ANALYZED COMPS. ON THE INTERNAL SURFACE. TO PUMP OUT COMPS. WITH ORDINARY SORPTABILITY TO 0.01PERCENT OF THE INITIAL CONC., TAKES, 3 MIN AND COMPS. STRONGLY ADSORBED TO 0.2PERCENT OF INITIAL CONC., 15 MIN. THE SENSITIVITY FOR AR IS 10 NEGATIVE PRIME4 AND 0.05PERCENT IN RECORDING THE MASS SPECTRA BY MEANS OF A VACUUM TUBE POTENTIOMETER AND LIGHT BEAM OSCILLOGRAPH, RESP. THE RELATIVE REPRODUCIBILITY OF THE MASS SPECTRUM OF C SUB4 H SUB10 WITHIN 1 MONTH IS 1PERCENT. THE RELATIVE ANAL. ERROR DEPENDS ON THE COMPN. OF THE ANALYZED MIXT. AND VARIES WITHIN 1-5PERCENT AT THE COMPONENT CONC. OF LARGER THAN OR EQUAL TO 10 MOLE PERCENT. IN THE ANAL. OF MIXTS. CONTG. C SUB6 H SUB6, PHME, NONANE, TRICHLOROETHYLENE, AND ET SUB2 O, THE MAX. ERROR WAS SMALLER THAN 2PERCENT.

UNCLASSIFIED

Acc. Nr:

AP0047392

Abstracting Service:
GEOPHYSICAL ABST.

5/70

Ref. Code:

4R0065

KHMELNITSKIY R.A.

91892t Mass-spectrometric study of petroleum sulfides of 170-310° fractions of Arlan petroleum. Khmel'nitskiy, R. A.; Brodskii, E. S.; Chertkov, Ya. B.; Spirkin, V. G. (USSR). *Khim. Tekhnol. Topl. Masel* 1970, 15(1), 55-7 (Russ). The sulfides were sepd. by selective extrn. with an aq. H₂SO₄ soln. (Chertkov, Ya. B.; Spirkin, V. G.; Demishev, V. N., 1967). Their group compn. was detd. with a MKh-1303 spectrometer at an accelerating voltage of 2kV, ionizing-electron energy 50 eV, temp. of the ion source, analyzer, and inlet system 250°. The main sulfide fraction contained thioalkanes 6.4, alkylthiocyclanes 45.0, alkylthiobicyclanes 24.9, alkylthiotricyclanes 12.8, alkylcycloalkylsulfides 0.7, thiophenes 3.8, paraffinic-naphthenic hydrocarbons 4.3, and C₆H₄, indan, and Tetralin derivs. ≤2.5 mole %. The characteristics and compn. of the sulfides are tabulated. GGJR

REEL/FRAME

19790918

1/2 009 UNCLASSIFIED
TITLE—MASS SPECTRA OF PHENYLPYRIDINES -U-

PROCESSING DATE--09OCT70

AUTHOR--(05)-TERENTYEV, P.B., KHMELNITSKIY, R.A., KHRUMOV, I.S., KOST,
A.N., GLORIOZOV, I.P.
COUNTRY OF INFO--USSR

K

SOURCE--ZH. ORG. KHIM. 1970, 6(3) 606-10

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MASS SPECTRUM, BENZENE DERIVATIVE, PYRIDINE, AZO COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1583

STEP NO--UR/0366/70/006/003/0606/0610

CIRC ACCESSION NO--AP0112577

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0112577

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MASS SPECTRA WERE OBTAINED OF 2, 3, OR 4, PHENYLPYRIDINES, 2, METHYL, 5, PHENYLPYRIDINE, AND 2, 6, DIPHENYLPYRIDINE. THE POSSIBLE IONIC STRUCTURES OF LARGE IONIC FRAGMENTS WERE DEDUCED BY AN LCAO CALC. METHOD. THE PYRIDINE RING ISOMERIZES, DURING MASS SPECTROSCOPY TO AZO PRISMANE OR AZOBENZOVALENE TRICYCLIC STRUCTURES.

UNCLASSIFIED

USSR

UDC: 621.3.091.1

BAVYKIN, N. D., KHMEL'NITSKIY, YE. A.

"Angles of Departure and Arrival in Short Wave Communication Lines During the Transition Hours"

Moscow, Elektrosvyaz', No 2, 1971, pp 4-13

Abstract: Measurements of field intensity over a range of 2900 km to clarify short wave propagation conditions during the transition hours are described, the results of an analysis of the experimental data are given, and a simplified method for making engineering estimates of the median deviations in departure and arrival angles is described in this paper. An example to illustrate estimation of trajectory deviations from the symmetrical through predictable ionosphere parameters is also explained. The data obtained in these experiments indicated that the cause of the reduction in the received signal level is the variation in geometrical parameters of the ionospheric layer which lead to asymmetrical trajectory propagation. Field strength measurements were made with an RGD 62 1 transmitting antenna, a symmetrical dipole nondirectional

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USSR

BAVYKIN, N. D., et al, Elektrosvyaz', No 2, 1971, pp 4-13

receiving antenna, and a second receiver antenna of the BS2 type. The authors find that ionosphere deviations have a strong effect on the signal trajectory during the transition hours.

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USSR

UDC: 621.396

KONOPIEVA, Ye. N. and KHMEL'NITSKIY, Ye. A.

"Possible States of a Short-Wave Communication Channel According to Radio Wave Propagation Conditions"

Moscow, Elektrosvyaz', No 12, 1970, pp 19-24

Abstract: This paper considers the possibility of transmitting discrete signals with minimum error over short-wave communication lines of 3000 km. Although it is impossible at the present time to compute the trajectory of the signal propagation with certainty for most line lengths, it can always be ascertained for ranges of 1000-3000 km. This paper also presents experimental data concerning the frequency of appearance of the various models of radio wave propagation at the specified range as well as data for the number of cycles with and without discontinuities in each model. The data consists of measurements made over a number of years for signal level, noise, and the number of discontinuities over a line of about 2900 km. The equipment used RG65/4-1 antennas for the receiver and ES-2 antennas for the transmitter. The authors find that the frequency of appearance for any one model of radio wave propagation is independent of the radiated power or the noise level.

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1/2 043 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--RELATION BETWEEN EXPERIMENTAL VALUES OF MUTUAL CORRELATION
COEFFICIENTS FOR CHANGES IN SHORT WAVE SIGNAL LEVELS DURING SPACE
AUTHOR--(02)-KONOPLEVA, YE.N., KHMELNITSKIY, YE.A.
COUNTRY OF INFO--USSR
SOURCE--ELEKTROSVIAZ', VOL. 24, JAN. 1970, P. 20-26
DATE PUBLISHED-----70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., NAVIGATION
TOPIC TAGS--ELECTROMAGNETIC WAVE PROPAGATION, RADIO WAVE PROPAGATION,
IONOSPHERIC SCATTER COMMUNICATION, SPACE COMMUNICATION, ELECTROMAGNETIC
NOISE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1999/0391 STEP NO--UR/0106/70/024/000/0020/0026
CIRC ACCESSION NO--AP0122571
UNCLASSIFIED

2/2 043

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0122571

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTAL DETERMINATION OF THE MUTUAL CORRELATION COEFFICIENTS FOR SIGNAL LEVEL CHANGES DURING SHORT WAVE SPACE DIVERSITY RECEPTION OVER TWO MID LATITUDE PATHS ABOUT 3000 KM IN LENGTH. THE EXPERIMENTAL VALUES OF THE MUTUAL CORRELATION COEFFICIENTS ARE COMPARED WITH THE IONOSPHERIC PARAMETERS AND ARE CLASSIFIED ACCORDING TO RADIO PROPAGATION CONDITIONS. A ROUGH ESTIMATE IS OBTAINED FOR THE FREQUENCY OF OCCURRENCE OF THE DIFFERENT PROPAGATION MODELS USED IN ANALYZING THE NOISE STABILITY AND RELIABILITY OF SHORT WAVE COMMUNICATIONS.

UNCLASSIFIED

USSR

UDC 620.193

BRYNZA, A. P., KOSOLAPOVA, T. YA., KEMELOVSKAYA, S. A., FEDORUS, V. B., and SIMONOVA, YE. K., Dnepropetrovsk State University and Institute of Problems of Material Science, Academy of Sciences Ukrainian SSR

"Corrosion Resistance of Titanium Carbide Powders"

Kiev, Poroshkovaya Metallurgiya, No 8, 1971, pp 67-72

Abstract: The decomposition kinetics of titanium carbide were studied in the region of homogeneity in mixtures of sulfuric acid (from 0.5 to 10 geq/l) with hydrogen peroxide (from 1.08 to 6.44 geq/l) at 25-80°. The carbides were prepared in a laboratory vacuum furnace (10⁻³ mm Hg) with a slow temperature rise (for 30-40 minutes) to 1500-1600°, with subsequent exposure at this level for 2 hours. The mean particle size of carbide powder was 15 microns. In the corrosion testing, all carbide phases completely decompose when maintained in a solution containing 10 geq/l H₂SO₄ and 6.44 geq/l H₂O₂ for 120 hours at 25°. With temperature rise, the time required for total decomposition was reduced to 10 hours at 40°, 6 hours at 60°, and 2 hours at 80°. When the concentration of sulfuric acid was increased from 0.5 to 5 geq/l, the rate of dissolution of titanium carbides was reduced, and when the acid content was varied from 5 to 10 geq/l, the rate of decomposition did not depend on solution acidity. When the hydrogen peroxide content was increased, the rate of decomposition of the titanium carbides rose. When the carbon content in titanium

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BRYNZA, A. P., et al, Kiev, Poroshkovaya Metallurgiya, No 8, 1971, pp 67-72

carbide was increased, the decomposition rate declined. That is, the more defect-free the carbide is relative to carbon, the higher is its resistance in a mixture of sulfuric acid and hydrogen peroxide.

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USSR

UDC 539.23

BRYNZA, A. P., KHMELOVSKAYA, S. A., and ZHUNKOVSKIY, G. L., Dnepropetrovsk, Kiyev

"Investigation of Production Conditions and Some Properties of Carbide Coatings on Titanium"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 6, Nov/Dec 71, pp 80-83

Abstract: A study was made of the growth kinetics and phase composition of carbide diffusion coatings on titanium by vacuum saturation and of their corrosion resistance in solutions of sulfuric acid, hydrochloric acid, and nitric acid. The parameters of reaction diffusion of C into titanium were calculated and the temperature dependence of the diffusion coefficient $D=77.8 \cdot \exp(-81000/RT)$ cm²/sec and the optimum method (pressure $1 \cdot 10^{-2}$ mm Hg column and lower, saturation time 3-5 hrs at 1,300°C) for producing a qualitative carbide coating were determined. It was found that carbide coats produced in the filling of carbon black in vacuum are more corrosion resistant than coatings obtained in an similar charge in a hydrogen resistant which is a result of the high density and purity of the developing carbide layer. Three illustrations, 12 bibliographic references.

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USSR

UDC 593.374

ANDREYEV, L. V., KHMELOVSKIY, L. T., BOGATYR', G. P., PTAKHIN, Ye. A.,
Dnepropetrovsk

"The Problem of Stability of Cylindrical Shells Beyond the Limits of Elasticity"

Kiev, Prikladnaya Mekhanika, Vol 18, No 8, Aug 73, pp 38-44.

Abstract: Results are presented from experimental studies of the stability of cylindrical shells made of AMg6 alloy under axial compression and lateral external pressure with various R/h and R/L ratios. A comparison is presented with known theoretical solutions from the theory of small elastic-plastic deformations and the theory of flow. Good agreement is achieved with calculations based on a geometrically linear theory of deformations.

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USSR

UDC: 521.372.01-501.12

KOSTAREV, V. Ye., POBEREZHSKIY, Ye. S., KHAZAN, V. L., KHYROVA, N. P.

"On the Problem of Modeling a Linear Communications Channel With Distortions of Frequency Characteristics"

V sb. Raschety radiotekhn. skhem i proyektir. radioaparatury (Calculations of Radio Circuits and Design of Radio Equipment--collection of works), Omsk, 1970, pp 23-31 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6A92)

Translation: The authors consider a linear communications channel as a two-terminal pair. The only limitations imposed are on the gating pole or on the width of the signal spectrum. Analysis is carried out for three versions of the two-terminal pair: a network which introduces only amplitude distortions; a network which introduces only phase distortions; and a network which introduces distortions of both types. Models are constructed for all three types of two-terminal pair networks. The first network is a cascade connection of an inertialess link and a long line with taps to an adder through attenuators and phase shifters. In particular, the proposed method can be used to simulate momentary realization of a communications channel with random parameters. Four illustrations, bibliography of eight titles. N. S.

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USSR

UDC 389.6.539.125.5.07:621.039.564.2

ARABEY, B. G., BOCHIN, V. P., GARAPOV, E. F., LOMAKIN, S. S., PETROV, V. I.,
SAMOYLOV, P. S., KHEMYZOV, V. V.

"Standardization of Measurements of Neutron Flux Density in Nuclear Reactors"

Tr. Soyuz. NII Priborostr. [Works of Union Scientific Research Institute
for Instrument Building], 1972, No 17, pp 3-8, (Translated from Referativnyy
Zhurnal, Metrologiya i Izmeritel'naya Tekhnika, No 7, 1972, Abstract No
7.32.1364, from the Resume).

Translation: Problems of standardization of means and methods of measure-
ment of neutron field parameters in nuclear reactors in order to provide
unity and correctness of measurement of these parameters are discussed.
One means of standardization is the use of activation detectors. Recommen-
dations are presented for the composition of standard sets of activation
detectors. It is suggested that a "standard" source of thermal neutrons
based on the F-1 graphite reactor be used to calibrate detectors used for
continuous measurements in reactors. The parameters of the neutron field
in the reactor (arbitrary flux density, epithermal parameter, neutron
gas temperature) are measured using activation detectors with errors of
2.5-3%. The use of the source described can allow calibration of neutron
detectors with an accuracy of 4-7%.

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USSR

UDC 621.039.524.2.034.3

LOMAKIN, S. S., MORDOVSKAYA, T. S., PANFILOV, G. G., PETROV, V. I., SAMOYLOV, P. S., and KIRYZOV, V. V.

"Measuring the Effective Neutron Temperature in Uranium-Graphite Reactors"

Moscow, Atomnaya Energiya, Vol 29, No 1, Jul 70, pp 36-37

Translation: A brief description is given for the technique used in measuring the effective neutron temperature in uranium-graphite reactors. The effective neutron temperature was measured by the integral method in the F-1 graphite research reactor using natural uranium and in the Pervaya (first) Atomic Electric Power Plant reactor in Obninsk. Ceramic activation detectors made of lutecium and manganese in the form of tablets 8 mm in diameter were used. The Westcott formalism modified for the case of detectors of finite thickness was used to process the results. The detectors were calibrated in a graphite prism with a thermal neutron spectrum. The activity of the detectors was measured on a scintillation γ -counter with a NaI (Tl) crystal and a PP-9 scaler which has an integral discriminator by means of which the corresponding thresholds were established. The measured saturation activities of the detectors, the cadmium $1/2$

USSR

LOMAKIN, S. S., et al., Atomnaya Energoya, Vol 29, No 1, Jul 70, pp 36-37

ratio, and the calibration factor were used to determine the neutron temperature. The measurements in the F-1 reactor were taken in the center of the core. The neutron temperature T_{neutron} averaged with respect to four measurements with different pairs of lutecium-manganeses detectors was $348 \pm 10^\circ\text{K}$.

The measurements at the Pervaya Atomic Electric Power Plant were taken in an empty process tube; T_{neutron} was $393 \pm 12^\circ\text{K}$. On the basis of the experimental data obtained and the published experimental data on T_{neutron} for uranium-graphite systems, the empirical relation between the neutron temperature T_{neutron} and the temperature of the medium T_0 was refined:

$$T_{\text{neutron}} = T_0 \left(1 + A \frac{\Sigma_a(kT_0)}{\Sigma_s} \right),$$

where $A = 16.5$. The calculated value of A according to R. Coveqou for uranium-graphite systems is 11.

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1/2 028 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--THE INFLUENCE OF EXOGENIC SEROTONIN ON THE AGGREGATION OF BLOOD
PLATELETS AND SOME BLOOD COAGULATION INDICES IN EXPERIMENTAL ACUTE
AUTHOR--(02)-DOROFYEV, V.M., KHNYCHEV, S.S.
COUNTRY OF INFO--USSR
SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 49,
NR 6, PP 21-23
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--RADIATION SICKNESS, COBALT ISOTOPE, GAMMA RADIATION,
SEROTONIN, BLOOD PLATELET, BLOOD COAGULATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3004/0688 STEP NO--UR/0219/70/049/006/0021/0023
CIRC ACCESSION NO--AP0131287
UNCLASSIFIED