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BERSENEV, M. S., et al., Byulleten' eksperimental'noy biologii i meditsiny, No 8, 1972, pp 115-117

method of coherent storage /3/. However, the widespread use of SDC is limited due to their complexity and high cost. This, in turn, hinders the use of the SDC directly in the course of the experimentation and, consequently, in the determination of further experimental tactics in accordance with the results.

In this connection, it has become urgent to develop small analog analyzers for direct use during experiments. The special cathode-ray tube, the potentialoscope, may be used for this purpose /4/. This tube is capable of holding information for a long time and can therefore be used as an operative storage device.

The potentialoscope consists of a system of electrodes designed to form an electron beam and control its scanning over a signal plate covered by a fine dielectric layer (the target) and a barrier grid. If a varying potential is applied to the signal plate while the electron beam is simultaneously scanned, the potential at each point of the target is determined by the signal plate potential at the moment the electron beam passes through 2/8

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that point. As a result, a so-called potential relief, capable of
being stored for a long time, is formed on the target /5/. The
barrier grid reduces interaction of adjoining sections of the tar-
get and thus prevents blurring of the potential relief.

The LN-8 potentialoscope is used in the instrument we de-
veloped. Research /2/ has shown that, when properly operated, the
LN-8 provides a linear relationship between the recorded and in-
put signals with changes in the recorded signal amplitude of 10 to
60 V. This characteristic makes possible an undistorted reproduc-
tion of the amplitude characteristics of the signal to be investi-
gated within broad limits.

The functional block diagram of the instrument is shown in
Fig. 1. Potentials derived from the nerves, brain, or muscles,
pass through the recording amplifier, and are applied to the sig-
nal plate of the potentialoscope. The travel of the electron beam
along the horizontal is realized by a scanning block in synchron-
ism with the stimulator pulse applied to the object of the inves-
tigation. The responses to a single stimulus are arranged along
each line. After the line is scanned, the beam reads across the

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next line. In accord with the coherence condition, the responses
in the lines are arranged one underneath the other, and a poten-
tial relief is formed on the target which represents a function
of three variables: the biopotential amplitudes (the potential of
a given point on the target, the Z axis); the time from the moment
of the stimulus (the X axis); the number of the line (the Y axis).
For the readings, a sinusoidal voltage (the reading voltage) whose
frequency exceeds the band pass of the reading amplifier is ap-
plied to the vertical deflecting plates of the potentialoscope.
The electron beam, spread by this varying voltage in the vertical
direction over the whole target, passes once over the target in
the direction of the time axis with a velocity equal to the scan-
ning velocity in recording. With a sufficiently high reading
voltage frequency, the electron beam will pass relatively quickly
over the target in the transverse direction, successively pro-
ducing in each discrete vertical line the algebraic sum of the
potentials in the lines /1/. Thus, the statistically probable

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No 8, 1972, pp 115-117

bioelectric signals are realized in the reading at the load re-
sistance in the form of the averaged response, fixed by an oscil-
lograph with photographic recording. As a random process, the
noise is converted at the output of the instrument into a null or
the d-c component of the output signal, depending on its distribu-
tion law.

Figure 2 shows the composite potential of the C fiber ac-
tion obtained from the intact (no fibers removed) cord of the
tibial nerve, recorded directly after the amplifier (Fig. 2A),
and after averaging 150 responses by the potentialoscope (Fig. 2B).
In recording A, the original signal/noise ratio may be approximated
at 1:3, while in recording B, after averaging, it is 4:1. As a
result of the averaging, then, the signal/noise ratio increases 12
times. The obtained experimental data confirms that the increase
in the signal/noise ratio by using this instrument is subject to
the $\sqrt{n}$ law, where n is the number of averaged responses. If weaker
signals are to be detected, the number of averaged responses may be
increased by increasing the memory capacity of the instrument with
two or more potentialoscopes.

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BERSENEV, M. S., et al., Byulleten' eksperimental'noy biologii i meditsiny,
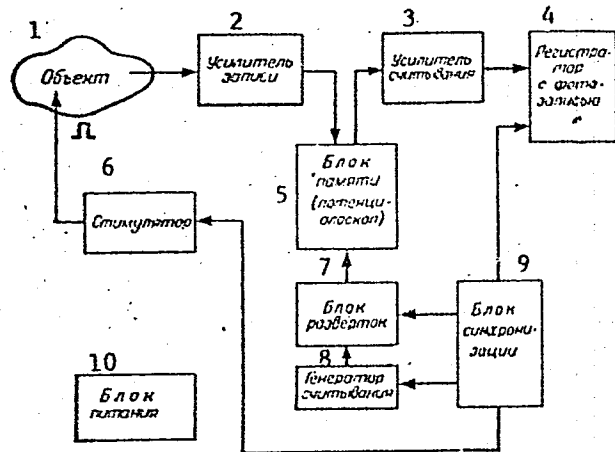No 8, 1972, pp 115-117

Fig. 1. Functional Block Diagram of the Instrument; Explanation given in the text.

(Key: 1) Object; 2) Recording amplifier; 3) Reading amplifier; 4) Recorder, with photographic recording; 5) Memory block (potential-oscope); 6) Stimulator; 7) Scanning block; 8) Reading Oscillator; 9) Synchronism block; 10) Power supply)

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BERSENEV, M. S., et al., Byulleten' eksperimental'noy biologii i meditsiny, No 8, 1972, pp 115-117

Fig. 2. Composite Potential of the Action of Slowly Conducting Fibers of a Cat's Tibial Nerve Before (A) and After (B) Averaging.

The distance between the stimulating and outlet electrodes is 82 mm. The calibration is 5μV (for A), 20μs (for A and B).

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BERSENEV, M. S., et al., Byulleten' eksperimental'noy biologii i meditsiny, No 8, 1972, pp 115-117

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2. Bersenev, M. S. and Gundarov, V. P., Novosti med. priborostroyeniya (Medical Instrument Design News) Moscow, No 2, 1971, p 34.

3. Kozhevnikov, V. A. and Mershcherskiy, R. M., Sovremennyye metody analiza elektroentsefalogrammy (Modern Methods of Electroencephalogram Analysis) Moscow, 1963.

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- 26 -

USSR

MALYARENKO, YU. YE., and KHAYUTIN, V. M., Institute of Normal and Pathological Physiology, Academy of Sciences USSR, Moscow, and Rostov Medical Institute

"Cardiovascular Reflexes Elicited by Stimulation of the Heart With Potassium Ions Under Conditions of Spinal Deafferentation and Intact Innervation"

Abstract: Stimulation of the cat heart with potassium chloride solution after bilateral extirpation of the stellate and next two ganglia of the sympathetic chain elicited pressor reflexes that resulted in a lowering of arterial pressure and bradycardia. The relationship between the intensity of bradycardia and hypotension at concentrations ranging from 8-10 mM/liter (reflex threshold) and 60 mM/liter was a linear one. Injection of atropine reduced the intensity of bradycardia by a factor of 2 to 3 and the magnitude of the depressor reflexes by half. In animals with intact cardiac innervation, potassium chloride elicited not only depressor and pressor reflexes but multiphasic reflexes as well. The nature of the reflexes was specific: stimulation of the afferent nerves of the heart invariably elicited only depressor reflexes, while stimulation of the spinal afferent ending generally elicited only pressor reflexes.
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KHAYZERUK, Ye.M.

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UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

2/70

243680 CABLE LAYING MACHINE digs trenches for cables
along an old cable. A track laying motor vehicle
pulls a plough. The couplingbetween the plough and the
towing motor is pneumatic and it is controlled by radio
signals. The level and the direction of ploughing are
determined by the relative position of the plough to the
cable.
23.3.68 as 1228413/29-14. YA.I.MARCHEVSKI et al(3.10.69)
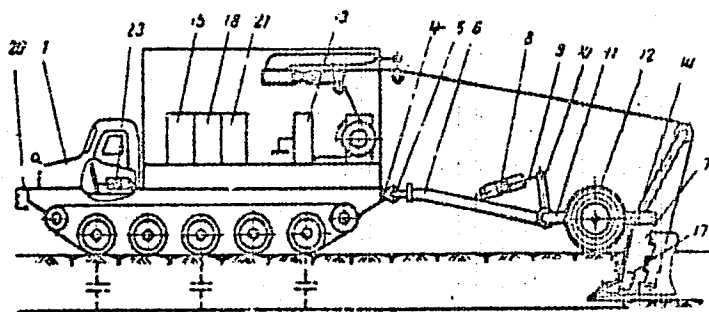bul 17/14.5.69. Class 21c. Int.Cl. H 02g.

AUTHORS: Marchevskiy, Ya. I., Furto, G. S., Fishgal, S. I.,
Balaban. A. S., Pil'ganchuk, P. N., Imereli, V. B., Stepanenko,
L. K., Parkhomenko, A. I., Min'kovskaya, S. M., Voznesenskiy, I. A.,
Vishnyakov, I. Ye., Zinoveyev, A. I., Razumovskiy, O. V., Khrulev,
V. V., Politova, A. Ye., Khayzeruk, Ye. M., Smirnov, V. I.,
Malakhova, V. M.

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10044234

19770734

TITLE--STUDY OF THE CHLORINATION OF FERRO TUNGSTEN IN A CHLORIDE MELT -U-

AUTHOR-(03)-ZELIKMAN, A.N., STEFANYUK, S.L., KHAZAN, A.Z.

COUNTRY OF INFO--USSR

SOURCE--IZVEST. V. U. Z., TSVETNAYA MET., 1970, (1), 69-74

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CHLORINATION, FERROTUNGSTEN, BIBLIOGRAPHY, MOLTEN CHLORIDE,
CHEMICAL KINETICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0533   STEP NO--UR/0149/70/000/001/0069/0074

CIRC ACCESSION NO--AP0124228
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0124228
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CHLORINATION OF FERRO W IN
NACL AND NACL FECL SUB2 MELTS WAS STUDIED. AT TEMP. ABOVE 750 DEGREESC
THE CHLORINATION PROCEEDED TO COMPLETION WITHOUT ANY RETARDATION OF THE
REACTION BY THE LOWER CHLORIDES OF W AND FE, THESE TENDING TO DISSOLVE
READILY IN THE MELT. ANALYSIS OF THE KINETICS OF THE REACTIONS IN
DIFFERENT SALT MELTS INDICATED THAT THE REACTION VELOCITY INCREASED
SHARPLY IN THE PRESENCE OF FECL SUB2.   ABOVE 800 DEGREESC CHLORINATION
TOOK PLACE BY WAY OF A DIFFUSION MECHANISM, THE VELOCITY DEPENDING ON
THE RATE OF FEEDING CL INTO THE MELT.

UNCLASSIFIED

USSR   UDC: 521.372.01-501.12

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

"On the Problem of Modeling a Linear Communications Channel With Distor-
tions of Frequency Characteristics"

V sb. Raschety radiotekhn. skhem i proyektir. radioapparatury (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 ampli-
tude distortions; a network which introduces only phase distortions; and
a network which introduces distortions of both types. Models are construct-
ed 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 communi-
cations channel with random parameters. Four illustrations, bibliography
of eight titles. N. S.
1/1

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USSR   UDC: 518.5:681.3.06

MAYERGOYZ, M. D., KHAZANKINA, S. P.

"Solution of a System of Nonlinear Algebraic and Transcendental Equations
by the Generalized Newton Method"

V sb. Mashiny dlya inzh. raschetov (Machines for Engineering Calculations--
collection of works), vyp. 4, Kiev, 1971, pp 3-7 (from RZh-Kibernetika,
No 12, Dec 71, Abstract No 12V965)

[No abstract]

1/1

USSR   UDC: 531.787

KOZLOV, O. V., POLENOV, B. V., KHAZANOV, B. I.

"On Measuring Atmospheric Pressure by Using Radioactive Emitters"

Tr. Soyuz. NII priborostr. (Works of the Union Scientific Research Institute
of Instrument Making), 1972, vyp. 17, pp 106-115 (from RZh-Metrologiya i
Izmeritel'naya Tekhnika, No 6, Jun 72, Abstract No 6.32.525)

Translation: The authors consider various methods of measuring pressure in
the range from 40 to 760 mm Hg by using radioactive emitters with respect
to mean free path and specific losses of energy of alpha particles, and with
respect to scatter of beta particles. The technical specifications are given
as well as possible fields of application of methods of this type. Three
illustrations, bibliography of ten titles.

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USSR   UDC: 621.375.014

GORN, L. S., ZHURINA, L. S., KHAZANOV, B. I.

"DC Amplifiers for the Microampere and Nanoampere Range"

Moscow, Pribory i Tekhnika Eksperimenta, No 2, Mar/Apr 72, pp 105-107

Abstract: The article describes construction of DC amplifiers which use
the 1UT221 integrated differential amplifier described by V. D. Kozlov
(Pribory i Tekhnika Eksperimenta, 1971, No 1, p 144) as the input element.
The proposed instruments can be used for measuring currents to 20 µA.
Also described are DC amplifiers based on a combination of FET and dis-
crete transistor for current measurements to 1 nA. Circuit diagrams are
given for both types of DC amplifier. Two figures, bibliography of one
title.

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USSR   UDC 539.125.4:535.853

OL'DEKOP, L. G., POLENOV, B. V., KHAZANOV, B. I.

"Low-Energy Proton Spectrometer"

Translation: A proton spectrometer is described that is designed for measuring spectral distributions of protons with particle energies from $1.8 \cdot 10^4$ to $1.8 \cdot 10^8$ part/sec·cm^2. A modulation shower with a collector is used as a detection unit in which protons passing the energy selection system are additionally deflected in the field of the electrostatic condenser in order to reduce noise from ultraviolet radiation and particles of a different type. The collector currents are recorded by a narrow-band ac amplifier with synchronous detection. 3 ill., 7 ref. Resume.

1/1

USSR   UDC: 539.1.07

GORN, L. S., KHAZANOV, B. I.

"Data Processing in Radiometric Equipment With Transmission of the Information Via Communications Channel"

Translation: The paper discusses the simplest methods of processing the results of measurements before transmitting them over a communications channel. Devices are classified by method of construction, and a brief description is given of the most typical devices of each type. Three illustrations, bibliography of twenty-one titles.

1/1

A70-24315 #   Study of the geoactive particles and photoelectrons by means of satellite 'Kosmos-261.' IV—Study of charged particles with a middle and high energy (Issledovanie geoaktivnykh korpuskul i fotoelektronov na sputnike 'Kosmos-261.' IV— Izmereniia zariazhennykh chastits srednikh i vysokikh energii). A. D. Boliungva, A. D. Verevkin, Iu. I. Gal'perin, L. S. Gorn, L. S. Zhurina, I. D. Ivanov, R. N. Isaeva, I. P. Karpinskii, R. A. Kovrazhkin, V. V. Temnyj, B. I. Khazanov, A. V. Shifrin, and F. K. Shuiskaia. Kosmicheskie Issledovaniia, vol. 8, Jan.-Feb. 1970, p. 126-135. 7 refs. In Russian.

Descriptions of the scintillation spectrometers for measuring the electrons with energy ranging from 20 to 150 keV and more, protons with energy ranging from 0.30 to 9 MeV. A load-screened Geiger counter for measuring the protons with energy above 50 MeV and rigid electrons is also described. The latitude-dependent intensity distribution of the intrusive electrons is determined together with the pitch distribution of the electron intensity in the auroral zone, and differential electron spectra.   Z.W.

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B. I.   KHAZANOV

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Acc. Nr.: *AP0042567*

Ref. Code: *UR 0293*

JPRS 50162

Measurements of Intermediate- and High-Energy Particles

(Abstract: "Measurements of Charged Particles of Intermediate and High Energies," by A. D. Bolyunova, A. D. Verevkin, Yu. I. Gal'perin, L. S. Gorn, L. S. Zhurina, I. D. Ivanov, R. N. Isayeva, I. P. Karpinskiy, R. A. Kovrazhkin, V. V. Temnyy, B. I. Khazanov, A. V. Shifrin and F. K. Shuyskaya; Moscow, Kosmicheskiye Issledovaniya, Vol VIII, No 1, 1970, pp 126-135) [Note: This is part of a sectionalized article "Study of Geoactive Corpuscles and Photoelectrons on the Satellite 'Kosmos-261'," Kosmicheskiye Issledovaniya, Vol VIII, No 1, 1970, pp 104-136]

This article describes the RIE-205 scintillation spectrometer for electrons of intermediate energies, the RIP-802 scintillation spectrometer for protons and the RIG-III lead-shielded Geiger counter. The RIE-205 instrument measured electrons in the ranges 20-45, 45-85, 85-120 and 120-150 keV and the total intensity of electrons with an energy greater than 150 keV (geometry factor $2 \cdot 10^{-3} cm^2 \cdot$sterad). The RIP-802 instrument measures protons in the ranges 0.30-0.45, 0.45-0.70, 0.70-0.95 and 0.95-9 MeV with a geometry factor of $1.5 \cdot 10^{-2} \cdot$sterad. The RIG-111 instrument measured

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protons with $E > 50$ MeV and hard electrons. In the radiation belts and auroral zones the instruments measured the fluxes and energy spectra of electrons and protons, their distribution by pitch angles and spatial-temporal characteristics. It was possible to determine the latitude varia-tion of the intensity of injected electrons, the pitch distribution of intensity for auroral zone electrons and the differential electron spectra. For example, the electron fluxes measured with the RIE-205 spectrometer can be assigned to the following groups: a) trapped electrons in the inner zone ($L \leq 2.5$) were registered for the most part in the region near the Brazilian anomaly; their flux for an energy $E > 150$ keV attained 10^8 parti-cles/$cm^2 \cdot sec$, and was highly dependent on pitch angle; a pronounced maximum was observed for pitch angles 90°; b) trapped electrons in the outer zone $2.5 \leq L \leq 7$, also with a maximum intensity for pitch angles of 90°; in many cases quasitrapped particles were registered in the region of in-variant coordinates $h_{min} \leq 100$ km with intensities up to $2 \cdot 10^6$ particles/$cm^2 \cdot sec \cdot sterad$; c) sporadic hard electrons injected into the atmosphere in the middle latitudes; in these cases the mean energy was usually ~ 100 keV and the particle flux attained 10^3 particles/$cm^2 \cdot sec$; d) electrons of in-termediate and high energies injected into the atmosphere in the high latitudes; they are frequently observed near the auroral zone.

19760546

KHAZANOV, B. I.

Acc. Nr.: __AP0042568__

Measurement of Low-Energy Electrons

(Abstract: "Measurement of Low-Energy Electrons," by Yu. I. Gal'perin,
N. V. Dzhordzhio, I. D. Ivanov, L. P. Karpinskiy, E. L. Lein, T. M.
Mulyarchik, B. V. Polenov, V. V. Temnyy, N. I. Fedorova, B. I. Khazanov,
A. V. Shifrin and F. K. Shuyskaya; Moscow, Kosmicheskiye Issledovaniya,
Vol VIII, No 1, 1970, pp 108-119)
[Note: This is part of a sectionalized article "Study of Geoactive Cor-
puscles and Photoelectrons on the Satellite 'Kosmos-261'," Kosmicheskiye
Issledovaniya, Vol VIII, No 1, 1970, pp 104-136]
     A spectrometer for low-energy electrons, operating in the energy
range 30 eV-15 keV, is described. Electrons undergo energy selection in
a cylindrical capacitor and then are accelerated to 17 keV and are regis-
tered by a scintillation counter with two photomultipliers operating in
a coincidence circuit. The instrument field of view is circular, the
aperture angle is ±3.5°, the geometry factor is 2·10⁻³ cm².sterad and the
energy resolution is ΔE/E = 0.19. In the first range (30-150 eV) energy
scanning is done smoothly by applying a sawtooth voltage; in the second
analysis it is done smoothly at three fixed energies — 1, 4.5 and 15 keV.
The instrument can be switched from one regime to another by command from
                                                                 12

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the earth. The paper gives the first results of measurements on the "Kos-mos-261" satellite. The instruments measured the equilibrium energy spectrum of fresh photoelectrons at different latitudes for different pitch angles. Soft auroral electrons with energies from 30 eV to approximately 1 keV were registered both in the "second" zone of auroras and in the main zone of auroras in which electrons with energies 4.5 and 15 keV were also very intensive even during magnetically quiet times. On many revolutions of the satellite about the earth, passing approximately along the auroral oval, with transition from the midnight to the morning sectors there is a structureless "background" of electrons with an almost constant intensity and slowly changing angular distribution. The energy flux of these electrons is approximately 1 erg/cm^2·sec. Near the midnight sector and with transition from the midnight to evening sector the fluxes of auroral electrons are far more irregular, with strong peaks, particularly at about 4.5 keV. No measureable electron intensities were discovered in the middle and low latitudes in the keV range. The upper limit of the energy flux in the quiet atmosphere is approximately $<1.5 \cdot 10^{-2}$ erg/cm^2·sec. An exception is the equatorial region of the ionospheric anomaly, where as earlier (on the "Kosmos-5" satellite) there was sporadic registry of soft electrons.

19760548

USSR

UDC 539.3

LEONOV, V. I., KHAZANOV, Kh. S.

"Calculating Curved Circular Plates for Normal Concentrated Effects"

Tr. Kuybyshev. aviats. in-t (Works of Kuybyshev Aviation Institute), 1972, No. 63, pp 22-32 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V192)

Translation: The loading of circular panels cut from a cylindrical shell by a normal concentrated force in the center and by a normal force applied through a circular rigid inclusion is discussed. A fundamental solution in a form proposed by the authors and a solution of the homogeneous equation for a hollow cylindrical shell are used. Calculations are given for a wide range of the parameters characterizing the geometry of the panel and the inclusion. Authors' abstract.

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USSR   UDC 539.3

LEONOV, V. I., KHAZANOV, Kh. S.

"Fundamental Solution of the Equation of a Hollow Cylindrical Shell in
Polar Coordinates"

Tr. Kuybyshev. aviats. in-t (Works of Kuybyshev Aviation Institute), 1972,
No. 63, pp 16-21 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V147)

Translation: A fundamental solution of the equation for a hollow cylindrical
shell corresponding to the action of a normal concentrated force on the shell
is constructed in polar coordinates. The solution is contained in the form
of a trigonometric series in terms of the angular coordinate. The asymptotic
behavior of functions involved in the solution is investigated. Series for
the forces and displacements of the points of the middle surface of the shell
corresponding to the fundamental solution are given. 5 ref. Authors'
abstract.

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USSR

SAVEL'YEV, L. M., KHAZANOV, KH. S.

"Integrating the Equation of a Flat Cylindrical Shell in Polar Coordinates"

Translation: The equation of a flat cylindrical shell relative to a complex function is investigated (Vlasov, V. Z., Obshchaya teoriya obolochek i yeye prilozheniya v tekhnike (General Theory of Shells and Its Applications in Engineering), Moscow, Gostekhizdat, 1949) in polar coordinates. A set of particular solutions of the homogeneous equation corresponding to different forms of self-balanced load applied along the edge of the circular cut is sought. Solutions for the case of self-balancing loads and loads leading to a moment relative to the diameter of the circular cut lying in the plane of the cross section of the cylinder and normal to its axis were given previously (Savin, G. N., Guz', O. N., Dopovidi AN UkrSSR, 1964, No. 11, pp 1456-1459: RZhMekh, 1965, 8V106). The boundary conditions for other edges of the shell besides the circular cut are not discussed. 8 ref. O. B. Lozhkin.

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USSR

UDC 629.78.015.4

KHAZANOV, Kh. S.

"Stressed State of Cylindrical Envelope Loaded by Torque Through a Rigid Circular Washer and a Supporter Circular Facing"

Tr. Kuybyshev. Aviats. In-t. [Works of Kuybyshev Aviation Institute], No 48, 1971, pp 3-14, (Translated from Referativnyy Zhurnal, Raketostroyeniye, No 2, 1972, Abstract No 2.41.174 from the Resume).

Translation: The problem is studied when a force is applied to the lateral surface of a cylindrical envelope, the vector of which is perpendicular to the plane passing through the axis of the envelope and the center of the washer. It is assumed that the torque is balanced by forces on the ends of the envelope. Calculations have shown that in this case significant bending stresses arise in the envelope along the line of the junction with the washer. Their value may be significantly reduced if the envelope near the washer is reinforced with a facing. The case of a circular facing of constant thickness is studied. 11 Figures; 5 Biblio. Refs.

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UNCLASSIFIED   PROCESSING DATE--16OCT70
TITLE--IMUNOLOGICAL STRUCTURE OF TULA POPULATION IN RESPECT TO MEASLES AT
DIFFERENT PERIODS OF THE YEAR -U-
AUTHOR-(04)-SILICH, V.A., KHAZANOV, M.I., ZHDANOVA, G.L., SEVEROV, A.M.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 5,
PP 109-115
DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--IMMUNOLOGY, HEMAGGLUTINATION INHIBITION TEST, MEASLES

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/0150   STEP NO--UR/0016/70/000/005/0109/0115

CIRC ACCESSION NO--AP0114546
UNCLASSIFIED

CIRC ACCESSION NO--AP0114546   UNCLASSIFIED   PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IMMUNOLOGICAL STRUCTURE OF TULA
POPULATION IN RESPECT TO MEASLES WAS STUDIED WITH THE AID OF
HEMAGGLUTINATION INHIBITION REACTION. OVER 3,000 UNSELECTED CASES FROM
VARIOUS AGE GROUPS WERE EXAMINED IN MARCH AND IN DECEMBER, 1966. THERE
WAS NOTED A REGULARITY COMMON TO BOTH SEASONS: THE NUMBER OF POSITIVE
REACTIONS INCREASED FROM 5-14PERCENT AT THE AGE OF 1-2 YEARS TO THE
MAXIMAL IN SCHOOLCHILDREN AND ADULTS EQUAL TO 89PERCENT IN MARCH, AND
54PERCENT IN DECEMBER.   IN DECEMBER (THE TIME OF INTENSIVE ELEVATION OF
MEASLES INCIDENCE IN TULA) THE PERCENTAGE OF POSITIVE HEMAGGLUTINATION
INHIBITION REACTIONS WAS MUCH LESS THAN IN MARCH. A FALL IN THE LEVEL
OF IMMUNOLOGICAL REACTIONS IN DECEMBER COULD BE ATTRIBUTED TO THE
DEPRESSIVE EFFECT OF NONSPECIFIC SEASONAL FACTORS ON THE GENERAL
IMMUNOLOGICAL REACTIVITY OF THE ORGANISM, AND ALSO TO REDUCTION OF THE
CIRCULATION OF MEASLES VIRUS DURING THE PRECEDING PERIOD OF LOW MEASLES
INCIDENCE.   ONE OF THE CAUSES OF ELEVATION OF MEASLES INCIDENCE DURING
THE AUTUMN WINTER PERIOD IS POSSIBLY A REDUCTION OF THE IMMUNITY LEVEL
TO MEASLES AMONG THE POPULATION.   FACILITY: TSENTRAL'NYY
INSTITUT EPIDEMIOLOGII.

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USSR   UDC 612.453.014.49(575.4)

KHAZANOV, M. M., IVANOVA, G. N., and KRAVETS, V. A., Laboratory of Endocrinology
Institute of Human Morphology, Academy of Medical Sciences USSR and Biochemistry
Laboratory, Moscow Oblast stet Scientific Research Clinical Institute imeni
M. F. Vladimirskiy

"The Effect of Arid Zone Conditions (Turkmenia) on the Functional State of the
Adrenal Cortex of Healthy Persons"

Abstract: Urinary excretion of 17 hydrocoxycorticosteroids and 17-ketosteroids
was determined in 10 healthy persons who had resided in areas of moderate climate
and were called to military service in the southern region of Turkmenia. Ten ad-
ditional healthy subjects who had lived in the middle zone and were called to
military service in their native area served as controls. No significant differ-
ences were noted between the two groups in the basal level of 17 hydroxycorti-
costeroid or 17 ketosteroid excretion. In persons living in hot climate for 3, 8,
and 15 months however, a statistically significant reduction of 17-hydroxycorti-
costeroid and 17-ketosteroid excretion was noted in response to the administration
of ACTH.

1/1

USSR   UDC: 621.317.733

BUDNITSKAYA, Ye. A., NOVIK, A. I., SMOLYAR, Yu. A., TUCHIN, R. D., FESHCHEN-
KO, N. A., KHAZANOV, V. M.

"Some Circuits for Temperature Compensation of AC Bridges"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 1 (Re-
ports of the All-Union Scientific and Technical Conference on Radio Engineer-
ing Measurements. Vol. 1), Novosibirsk, 1970, pp 19-21 (from RZh-Radiotekhnika,
No 12, Dec 70, Abstract No 12A351)

Translation: The authors discuss the general principles of temperature com-
pensation of AC bridges. A simplified transformer bridge circuit with
temperature compensation of the reference specimen is given by way of exam-
ple. Two illustrations. N. S.

1/1

USSR   UDC 678.06-419.8:677.521.01:53

ASLANOVA, M. S., NATRUSOV, V. I., ROGINSKIY, S. L., and KHAZANOV, V. Ye.

"Study of the Effect of Some Factors on the Strength of Fiberglass During Compression by the Method of Mathematical Planning of the Experiment"

Moscow, Plasticheskiye Massy, No 2, 1973, pp 60-63

Abstract: The effect of some physico-mechanical properties of fiberglass and the binder on the strength during compression of fiberglass was studied by means of the mathematical planning of an experiment. Regression equations are reported for the maximum strength of the fiberglass during compression as functions of the fiber diameter, modulus of resilience of the binder and the fiber and adhesive strength of the binder in relationship to the glass fiber. On the basis of the analysis carried out it was possible to optimize the values of basic variables and to determine their qualitative and quantitative effects on the strength of fiberglass. It was established that it is possible to increase the strength of fiber-glass during compression by using enlarged fibers with a diameter of 18 mc.

1/2   022   UNCLASSIFIED   PROCESSING DATE--18SEP70
TITLE--STRUCTURAL FEATURES OF VISCOSE TEXTILE THREADS OBTAINED BY VARIOUS
   METHODS -U-
AUTHOR-(03)-KHAZANOVA, A.S., FINGER, G.G., MOGILEVSKIY, YE.M.

COUNTRY OF INFO--USSR

SOURCE--KHIM. VOLOKNA 1970, (1), 30-2

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--TEXTILE, RAYON, MECHANICAL STRESS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/1823   STEP NO--UR/0183/70/000/001/0030/0032

CIRC ACCESSION NO--AP0100397
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0100397   UNCLASSIFIED   PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT. THE STRUCTURE OF VISCOSE (I) YARN,
PREPD. BY CONTINUOUS, SEMICONTINUOUS, AND CENTRIFUGAL METHODS UNDER
IDENTICAL PROCESSING CONDITIONS, WAS STUDIED BY MEASURING THE ISOMETRIC
STRESS. THE STRESS IN A VISCOSE YARN DEPENDED ON RECOVERY FROM EXTENSION
AND DRYING. THE PRESENCE OF 2 MAX. ON A STRESS TEMP. CURVE FOR A I
YARN, PREPD. BY A CONTINUOUS METHOD, SUGGESTED THE PRESENCE OF 2
STRUCTURAL MODIFICATIONS IN THE AMORPHOUS REGIONS OF THE FIBERS.

UNCLASSIFIED

Acc. Nr: AP0043869   Ref. Code: UR 0016

DYNAMICS OF IMMUNE RESPONSE IN MICE FOLLOWING ADMINISTRATION OF PERTUSSIS MONOVACCINE

Khazanova, L. Ye.; Stanislavskiy, Ye. S.;
Khromacheva, R. P.; Sandulova, S. L.

The authors studied the relationship of the level of various classes of specific immuno-globulins in the blood and resistance of vaccinated mice to experimental pertussis meningo-encephalitis in various schemes of administration of the antigen.

Experiments were carried out on mongrel and inbred (CBA abd C57BL) mice. Agglutina-tion and passive hemagglutination reactions were used for detection of Ig M- and Ig G-anti-bodies. Single immunization of mice with corpuscular pertussis vaccine caused a weak response (according to the data of antibody production). Administration of high subtoxic doses of the vaccine was followed by preponderant synthesis of Ig M-antibodies. Mice immunized one were resistant against meningoencephalitis, in the absence of antibodies detectable in the blood. Second administration of pertussis vaccine to mice had a marked stimulating effect on the synthesis of antibodies, particularly of Ig G. However, the level of specific resistance failed to show considerable change or reduction.

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REEL/FRAME
19770293

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AP0043869

As a result of vaccination intact mice of C57BL species, highly sensitive to pertussis, acquired the capacity to elaborate specific resistance; less sensitive mice of CBA line were incapable of doing so.
Blood antibody level of mice failed to correlate with their resistance against pertussis meningoencephalitis.

2/2   19770294   DI

UDC 669.017:620.18

USSR

KARSANOV, G. V., KURDYUMOVA, G. G., MIL'MAN, Yu. V., PONOMAREV, Yu. N., SARZHAN, G. F., TREFILOV, V. I., FIRSTOV, S. A., KHAZANOVA, T. B., and YUSHKO, V. G., Moscow, Kiev

"Investigation of the Structural Condition and Mechanical Properties of a Two-Phase Alloy Containing Chromium and Nickel"

Abstract: The structure of a chromium alloy containing 34.4 wt % Ni was investigated by methods of electron-microscopy of thin foils and X-ray and metallographic analyses, after being subjected to various thermal and thermo-mechanical treatments. The investigation data are compared with mechanical bending test data and analyzed from the standpoint of dislocation concepts and ideas of the character of the electronic structure of transition metals. Reference is made to microphotographs of the structure of the hardened alloy Cr - 34.4 Ni and its structural changes resulting from annealing at different temperatures and to diagrams showing effects of annealing at 900°C on mechanical properties, lattice parameter, hardness, and relative quantities of α- and γ- phases. The probability is indicated of increasing the strength

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USSR

KARSANOV, G. V., et al., Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 71, pp 67-74

characteristics of the investigated alloy at the expense of precipitation strengthening. Five illustr., 12 biblio. refs.

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UDC 669.295.018.9(088.8)

USSR

TURKINA, A. N., ODOYEVSKIY, L. S., KHAZANOVA, T. P., KARSANOV, G. V.,
ANOSHKIN, N. F., TSISTYAKOV, Ye. P., PAVLOV, A. G., TRUBIN, A. N., and
TETYUKHIN, V. V.

"Master Alloy for Production of High-Strength Titanium Alloys"

Translation: A master alloy for the production of high-strength Ti alloys,
containing Mo, V, and Al. To increase the quality of the ingots produced,
the alloy includes Cr and Fe with the following relationships of components
(in %): Mo 32-34, V 32-34, Al 18-22, Cr 6-8, Fe 5-7. The master alloy can
be produced either by direct smelting of the metals in an open induction
furnace or by an aluminothermal method in a furnace.

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KHAZANOVA, T. P.

STUDY OF THE STRUCTURE AND TEMPERATURE OF THE BRITTLE-DUCTILE TRANSITION OF SOME ALLOYS OF THE Cr-Ti-V-B SYSTEM

One of the prospective groups of heat-resistant materials developed at this time is dispersion-hardened low-alloy chrome alloys [1-3]. Along with good high-temperature properties, these alloys must have plasticity at close to room temperatures. This depends on the content of alloying elements and the structure of the alloy.

In this paper the goal was to study the effect of the titanium concentration on the structure and temperature of the brittle-ductile transition of hot-extruded bars of alloys of the Cr-Ti-V-B system in the initial and heat-treated states. The titanium concentration in alloys varied from 0.35 to 1.5 percent, and the vanadium and boron content were constant and amounted to 1.5 and 0.05 percent, respectively.

Samples 10 × 10 × 15 mm cut from bars obtained by hot extruding of ingots were used for the structural studies. The samples were heated in the TVV-4 furnace in an argon atmosphere for 5, 15, 25 and 50 hours at 1,100, 1,200 and 1,400 degrees. After completion of isothermal holding the samples were cooled with the furnace. The structure was studied by means of light and electron (UEMV-100V) microscopes. The metallographic microsections and thin foils were prepared in an electrolyte with the following composition: 86 ml of concentrated H_3PO_4, 51 ml of concentrated H_2SO_4, and 100 g of CrO_3. The electron microscope study was performed on single-stage carbon replicas with extracted particles and on self-supporting foils prepared by the procedure of [4]. The phase analysis by means of calculating the electronograms taken from the particles extracted in the replica was performed by the standard procedure of [5]. In addition, a phase x-ray micrographic analysis was performed with respect to the debyegrams of the previously electrolytically deposited second phase powder. The transition temperature from the brittle state to the plastic

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UDC: 621.375.121

LEKISHVILI, K. M., AZIDZIGURI, A. A., KHAZARADZE, O. L., GEDEVANISHVILI, G. S., ANDREYEVSKIY, YU. S., PEREGUDOV, V. P., Tbilisi Department, Electrotechnical Scientific Research Institute

"A Transistorized Wide-Band Nanosecond Pulse Amplifier"

Abstract: A wide-band nanosecond pulse amplifier is described with a gain of 40 DB, a frequency band of 10-120 MHz, nonuniformity of no more than 1.5 DB in frequency response, sensitivity of 0.5 mV, signal-to-noise ratio of 25, input impedance of 75 ohms, and output impedance of 50 ohms. The proposed amplifier may be used in time-interval selector circuits, time-amplitude converters, nuclear radiation detectors (where it is used as a preamplifier), time and amplitude devices, etc.

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USSR

KHAZARADZE, R. YE., and PAKELIANI, M. M.

"Study of the Effect of Tannine-Catechine Complex on the Deposition of Strontium-90 and Calcium-45 in the Bones of Animals"

Translation: Tannine-catechine complex (pure total of catechines obtained from a compound preparation of yellow tea dye) may be used as a protective agent against the deposition of Strontium-90 both in short term and chronic penetration into an organism. However, in case of chronic penetration, it is necessary to add calcium.

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UNCLASSIFIED   PROCESSING DATE--23OCT70
TITLE--THE CHEMICAL METHOD OF SPECIFIC DEGRADATION OF RNA WITH SELECTIVELY
   REMOVED BASES. 3.FISSION OF PHOSPHOESTER BOND IN RIBOSE,2, AND
AUTHOR-(05)-TURCHINSKIY, M.F., GUSKOVA, L.I., KHAZAI, I.K., BUDOVSKIY,
   E.I., KOCHETKOV, N.K.
COUNTRY OF INFO--USSR

SOURCE--MOLEKULYARNAYA BIOLOGIYA, 1970, VOL 4, NR 3, PP 428-434

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY

TOPIC TAGS--RNA, CHEMICAL DECOMPOSITION, AMINE DERIVATIVE, AMINE CATALYST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/0187   STEP NO--UR/0463/70/004/003/0428/0434

CIRC ACCESSION NO--AP0120885
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0120885

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AMINE CATALYZED FISSION WAS
STUDIED OF THE PHOSPHOESTER BOND IN RHE RIBOSE,2(3), PHOSTATE, THE
COMPOUND MODELLING INTERNUCLEOTIDE LINKAGE IN RNA WITH REMVOED BASE. IT
WAS SHOWN THAT RIBOSE,3,PHOSPHATE WITH PHOSPHOESTER BOND IN BETA
POSITION OT HE GLYCOSIDE CENTER WAS ONLY SPLIT IN THE PRESENCE OF THE
PRIMARY AMINES. THE ABILITY OF AMINES INVESTIGATED TO CATALYZE THE
CLEAVAGE OF THIS BOND DECREASES IN A SEQUENCE: P,ANISIDINE IS GREATER
THAN OR EQUAL TO ANILINE APPROXIMATELY O,AMINOBENZOIC ACID GREATER THAN
BENZYLAMINE APPROXIMATELY EQUAL TO LYSINE GREATER THAN ETHYLENEDIAMINE
GREATER THAN P,AMINO BENZOIC ACID APPROXIMATELY EQUAL TO SULPHANYLIC
ACID GREATER THAN BETA ALANINE APPROXIMATELY EQUAL TO METHYLAMINE. IN
THE PRESENCE OF P,ANISIDINE UNDER MILD CONDITIONS (PH 5.30DEGREES, 5
HRS) THE RAPID SPECIFIC FISSION OF THE PHOSPHOSTER BOND OCCURS BOTH IN
RIBOSE,3,PHOSPHATE AND IN DEURIDYLIC RNA. PHENYLHYDRAZINE CAUSES RAPID
SPLITTING OF RIBOSE,2,PHOSPSHATE BUT NOT OF RIBOSE,3,PHOSPHATE.
FACILITY: INSTITUTE OF CHEMISTRY OF NATURAL PRODUCTS, ACADEMY OF
SCIENCES, USSR, MOSCOW.

USSR

PSHENICHNIKOV, A.M., DMITRIYEV, V.F., KHAZATSKIY, V.E., Candidates of Technical Sciences, and KLIMENKO, V.I., Engineer

"New Telemechanical Systems for Constructing Information and Control Systems"

Abstract: Two series of telemechanical systems have been developed under the leadership of TsNIIKA [State All-Union Central Scientific Research Institute of Complex Automation] to transmit data and commands among physically separated facilities: the Nart-67 series and APD series. Nart-67's serve continuous-output control systems; APD's, discrete output.

In the Nart-67 series the TM-100, serving relatively slow processes (dispatcher control of pipelines, gasfields, irrigation systems), connects a control post with up to 20 check points. Transmitting speed is 50 bauds. Two parameters are sent per second in cyclic telemetry. Telesignalization lag when an installation's status changes does not exceed 25 seconds. Remote control commands are sent in 4 seconds. Range is up to 2,000 km. Basic telemetry error equals 1.6 percent. Probability of receiving a false message is 10^{-8}; a command, 10^{-12}. The TM-100 is made at the ZTA [Telemechanical Apparatus Plant] at Nal'chik.

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PSHENICHNIKOV, A.M., et al., Moscow, Pribory i Sistemy Upravleniya, No 12, Dec 1970, pp 1-3

The TM-300, serving intensive industries, such as mining, metallurgy, and chemicals, connects a control post with up to 25 check points over two-wire line at distances up to 220 km. Telemetry transmission speed is 25 parameters per second; telesignalization is sent in 0.6 second, remote control commands in 0.3 second; basic telemetry error is 1.6 percent for digital, 2.5 percent for analog data. The TM-300 is produced at the ZTA.

The TM-500, which provides a higher degree of dispatcher control to power associations at unlimited range, connects the control post with check points by high-frequency multiplexing. Time for sending telemetry and telesignalization at 50 bauds is 4 seconds, or 0.7 second at 300 bauds. Switching to a backup channel is automatic. The TM-500 prototype was made under the code name "Stimul" at the TsNIIKA Experimental Plant. Many Stimul sets are used in the power system to good economic effect.

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PSHENICHNIKOV, A.M., et al., Moscow, Pribory i Sistemy Upravleniya, No 12,
Dec 70, pp 1-3

The TM-200 (Rayon), developed at the Automation Institute (Kiev), pro-
vides regional dispatcher control of pipelines, irrigation systems, and
municipal services.

The TM-600 (Nefte), which serves dispersed gasfields, was developed by
research and planning institutes which specialize in complex automation of the
petroleum and gas industries.

APD equipment comprises four groups, each meeting a different type of
need.

With the first APD series, discrete production data is collected in de-
partments or shops and transmitted, preferably by keyboard, to a post where it
is concentrated and given initial processing. Data transmitting speed can
vary from 3 to 7 characters per second. Data is sent over nonmultiplexed wire
lines at distances up to 15 km. Validity ordinarily is no greater than 10^{-5}
per character.

With the second APD series, automatically prepared data is sent from point
of initial collection and processing over telephone or telegraph lines to the

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PSHENICHNIKOV, A.M., et al., Moscow, _Pribory i Sistemy Upravleniya_, No 12, Dec 70, pp 1-3

computing centers of large combines, dispensing with the need for small, ineffective computing centers. Transmitting speed is 5-8 characters per second by telegraph, 15-25 or 80-120 by telephone line. Either commutated or noncommutated lines can be used. The data should go directly into the computer or, in case of computer outage, onto punched tape. Validity of not less than 10^{-6} per character is required.

The third APD group exchanges data among computing centers, allowing better use of the computer pool and raising reliability. Two types of equipment can be involved, depending on the amount of machine time spent on raising reliability. Speeds of 100-140 or more characters per second and validity of not less than 10^{-7} per character are required.

The fourth APD group, intended for mass servicing (such as automated sales of train or plane tickets, data-handbook service), works with a computer in real time on a question-and-answer mode, using either telephone or telegraph lines. Validity is similar to that of the second APD group.

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The APD-MM, for example, belonging to the third APD group, connects BESM-4 computers. "Shuffling" with steps equal to word length reduces the machine time required to raise validity (no more than 2 percent). The Hamming Code is used to detect and correct errors.

The APD-3M is intended for radial communication with computers where data volume is small. Transmission speed is 80-120 characters per second, modulation speed is 1200/600 bauds. Validity is 10^{-6} per character where message distortion probability is 10^{-3}. It has decision feedback.

The APD-1U, intended for mass servicing, works in real time in a question-and-answer mode and has decision feedback characterized by identical speeds in a semiduplex channel. Message protection is provided, ensuring validity of 10^{-7} per character. Speed is 1200/600 or 50/75 bauds.

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KHAZATSKIY, V. Ye.

data link systems

All-Communications/
4th DATA LINK SYSTEMS

TECHNICAL FACILITIES OF THE SIRENA-1 DATA LINK SYSTEM

[Article by Candidates of Technical Sciences V. N. Silayev, O. I. Bazilenko, V. I. Bubnyak, Yu. F. Bubennov, V. Ye. Khazatskiy, and Engineers Fedony, Moscow, Pribory i Sistemy Upravleniye, Russian, No 4, April 1973, pp 1-4]

The rational organization of a data link in geographically scattered systems of the type Sirena [1] largely determines the economic effectiveness of the entire system.

A data link combines into one system the peripheral subdivisions [2] and the technological data processing center (DPC) [3]. The link is a set of channels and technical facilities that provide a high communication channel utilization coefficient, reliable transmission and processing of data and direct multichannel communications. Accordingly, the technical facilities of a link are divided into three groups: data traffic concentration facilities (DTC); data exchange reliability group and multichannel communications group.

Means of Concentrating Data Flows

The purpose of facilities of this group is to ensure economically efficient utilization of uncommutated channels K_c for a given subscriber servicing quality. The prerequisites for extensive application of various data traffic concentration methods is a data link were formulated in [1].

According to the criterion $\phi = l_j/l_j$ of the ratio of distances between the sources ($1-n$) and the concentrator K and between the concentrator and DPC, the following methods of traffic concentration may be used (Figure 1): local concentration ($l_j << l_j$; $l_i < 100$ m); central traffic concentration ($l_j << l_j$; $l_j < 100$ m); concentration of data from geographically scattered points ($l_j = l_j$; l_j, $l_j >> 100$ m). The technical facilities of DTC may be based on the utilization of the principles of commutation of either the channels or the traffic.

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[I - USSR - F]

1/2   028   UNCLASSIFIED   PROCESSING DATE--20NOV70
TITLE--CHEMISTRY OF ORGANIC OXIDES. XXXVI. ADDITION OF THIOLS AND SELENOLS
  TO ISOBUTYLENE OXIDE -U-
AUTHOR-(02)-KHAZEMOVA, L.A., ALBITSKAYA, V.M.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(5), 935-8.

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC OXIDE, THIOL, UV LIGHT, CATALYST, SODIUM, BORON
  FLUORIDE, CHEMICAL REACTION MECHANISM, ORGANOSELENIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1325   STEP NO--UR/0366/70/006/005/0935/0938

CIRC ACCESSION NO--AP0134999
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0134999
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT.   THE ADDN. OF ETSH, PHSH, PRSEH, OR
PHSEH TO ISOBUTYLENE OXIDE CATALYZED BY NA OR UV LIGHT GAVE ONLY THE
NORMAL ADDN. PRODUCTS, SUCH AS ME SUB2 C(OH)CH SUB2 SET. THE ADDNS.
CATALYZED BY BF SUB3. ET SUB2 O GAVE 1:2.5 NORMAL, ABNORMAL ADDN.
PRODUCTS, AT 20DEGREES AND A 1:1 PRODUCT MIST. AT 35DEGREES. THE UV
LIGHT CATALYZED ADDNS. PROCEED BY A FREE RADICAL MECHANISM.
FACILITY: LENINGRAD. TEKHNOL. INST. IM. LENSOVETA, LENINGRAD, USSR.

UNCLASSIFIED

USSR

KHAZEN, E. M.

"Reduction of Data and Information Estimates for Increasing Risk in Problems of Sequential Analysis and Optimal Control"

Upravlyayemyye Sluchayn. Protsessy i Sistemy [Controlled Random Processes and Systems -- Collection of Works], Kiev, 1973, pp 275-286 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V137, by Ya. Kogan).

Translation: Information estimates are given for increasing risk for the case of reduction from a sufficient transitive statistics to a Markov statistics. The case when the condition of transitiveness is broken in reduction is studied in particular detail.

1/1

USSR

KHAZEN, E. M.

"Methods of Optimal Statistical Decisions in Problems of Recognition, Information Processing and Control"

Izbr. Tr. Vses. Mezhvuz. Simpoz. po Prikl. Mat. i Kibernet. Gor'kiy, 1967 [Selected Works of All-Union Inter-University Symposium on Applied Mathematics and Cybernetics. Gor'kiy, 1967 -- Collection of Works], Moscow, Nauka Press, 1973, pp 232-237 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V148, by the author).

Translation: A study is made of the construction of sequential decision rules, asymptotic decision rules and the problem of optimal control of processes of observation and search. Certain problems of recognition and filtration are solved.

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USSR

BENENSON, Z. M., KHAZEN, E. M.

"Measures of Information in Problems of Recognition of Hypotheses"

Tr. IV Vses. Soveshch. po Avtomat. Upr. 1968. Teoriya Avtomat. Upr. [Works of Fourth All-Union Conference on Automatic Control], 1968. The Theory of Automatic Control], Moscow, Nauka Press, 1972, pp 179-184 Discussion 256-262 (Translated from Referativnyy Zhurnal, Kibernetika, No 3, Moscow, 1973, Abstract No 3 V190 by the authors).

Translation: Estimates are produced, relating the losses of information and risk increment in construction of successive decision rules for differentiation of multiple, complex hypotheses under conditions of incomplete information. The construction of optimal decision rules for recognition of hypotheses considering limitations on the "memory volume" and requirements for stability of realization is studied.

1/1

KHAZEN, I. M).

Aerospace medicine

The board held seven meetings during the past year and discussed various aspects of the organization and planning of the section's work; particular attention was given to the founding of an All-Union Society of Aerospace Biology and Medicine. Participants at 11 sessions of the section heard and discussed 42 reports on various aspects of aerospace medicine. A report by E. S. Kotova presented extensive experimental data on the further study of the physiological mechanisms of acceleration taking into account the specific conditions of space flights. The author presented convincing data indicating phase changes in vascular tone and also on the caliber of retinal arteries and veins during accelerations. In the immediate aftereffect period the speaker observed residual hypertension, which was then replaced by hypotension. The of retinal veins on the fifth, eighth and eleventh days after the experiment. mic artery exhibited hypertension on the caliber of retinal arteries evidence of a prolonged aftereffect period.

A report by V. I. Zorile was devoted to studies of the effect of acceleration on the performance of a pilot-operator. In a centrifuge experiment, the author employed a combination of systematic procedures adequate for the peculiarities involved in modeling some types of flight activity under ground conditions. This made it possible to obtain interesting data. The most important information obtained by the researchers was that there is a considerable change in the quality of implementation of a mission against a background of exposure to radial and Coriolis accelerations. The use of anti-g equipment in a number of experiments and various kinds of pharmaceuticals enables the author to suggest ways to increase a flier's performance when exposed to an overload.

Aviation practice and the future development of space navigation make essential a further study of the etiology and pathogenesis of motion sickness and the question arises of determining on a sound scientific basis the most effective means for its prevention and treatment. The matter requires discussion of different aspects of vestibular selection and the expert examination

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Pharmacology and Toxicology

USSSR

UDC 541.69+547.572+547.636.4

KHAZHAKYAN, L. V., LUK'YANENKO, N. L., ALIYEV, R. K., and GEVORKYAN, G. A.,
Institute of Fine Organic Chemistry imeni A. L. Mndzhoyan, Academy of Sciences
Armenian SSR, Yerevan

"The Constants of Association of Some Aminoketones with Phenol and the
Physiological Activity of These Compounds"

Abstract: By using IR spectroscopy, the constants K of association of the
physiologically active aminoketones $p\text{-}ROC_6H_4\text{-}C(O)\text{-}CH(Ph)\text{-}CH_2N(CH_2)_5$ (I),
$p\text{-}ROC_6H_4\text{-}C(O)\text{-}CH(Ph)\text{-}CHN(CH_2)_4$ (II), and $Ph\text{-}C(O)\text{-}CH(C_6H_4OR\text{-}p)\text{-}CHN(CH_2)_4$ (III)
with phenol were determined. For compounds I-III, both the value of K and
the analgesic activity increased with an increasing size of R from Me to Bu
and then decreased at $R = Am$. In compounds IV derived from $Ph\text{-}C(O)\text{-}OCH_2\text{-}$
$\text{-}CH_2R$, where R is $N(CH_2)_4$ or $N(CH_2)_5$, that contained two aloxy groups in the
2 and 6 or 2 and 4 positions of the phenyl ring, increasing of the size of
the alkoxy groups in the o-position to the ester group reduced the value of
1/2

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K. Even if an alkoxy radical was present in the p-position of the phenyl in
IV, the value of K decreased instead of increasing as in the case of I-III.
This was due to steric hindrance. The values of K were higher for compounds
I-II, in which the electron density was displaced from the alkoxy group to the
CO group over a conjugated system, than for compounds III, in which displace-
ment occurred because of an inductive effect. Beginning with the Am group,
steric hinderance   in I-III interfered with the formation of phenol associa-
tion products. As a result of the decreased tendency to form association
products, both K and the physiological activity decreased. The preparation
of the compounds used in the study and their properties are described by
Gevorkyan et al in Arm. Khim. Zh., 24, 32, 1971; 24, 333, 1971. Determina-
tions of the physiological activity were carried out at the Laboratory of
Analgesics and Hypnotics under the direction of S. N. Asratyan.

USSR   UDC 547.752+547.785.5

KARAGEZYAN, K. S., KHAZHAKYAN, L. V., GRIGORYAN, R. T., and TATEVOSYAN, G. T.,
Institute of Fine Organic Chemistry imeni A. L. Mndzhoyana, Academy of
Sciences Armenian SSR (Yerevan) "Indol Derivatives. XXXVI. Derivatives of 3-
(β-benzimidazolyl-2') ethyl indols"

Abstract: The compounds 2-methyl-3-(β-benzimidazolyl-2')- and 2-methyl-3-
(β-methyl-β-benzimidazolyl-2')-ethylindol were prepared for possible use in
the pharmaceutical industry. The synthesis of intermediates is given together
with melting points, calculated and experimentally determined composition, and
IR and UV spectral data.

1/1

Nitrogen Compounds

USSR   UDC 542.91+547.853.3

KHAZHAKYAN, L. V., KRAMER, M. S., AVOYAN, R. S., AROYAN, A. A., Institute of
Analytical Organic Chemistry im. A. L. Mindzhoyan of the Armenian SSR Academy
of Sciences (Yerevan)

"Pyrimidine Derivatives. XXVII. Study of the Tautomerism in Some Substituted
5-(p-alkoxybenzyl)pyrimidines"

Abstract: Infrared spectrascopy was used to study the structure of 5- and 6-
(p-alkoxybenzyl)pyrimidines, potentially tautomeric compounds. Data are pre-
sented indicating an amino structure for 2-methyl-4-amino-5-(p-alkoxybenzyl)-
6-methylpyrimidines, a keto structure for 4-hydroxypyrimidine, a diketo
structure for the uracil derivatives with some amount of the hydroxy con-
figuration along with the basic dihydroxy configuration and mercapto-hydroxy
structure for 2-mercapto-4-hydroxy-5-(p-alkoxybenzyl)-6-methylpyrimidines.
The presented article is only a summary of a report, the complete text is
available at the All-Union Institute of Scientific and Technical Information,
Registration No 3361-71, 18 August 1971.

1/1

1/2   023   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--THE CLINICAL PICTURE AND X RAY DIAGNOSIS OF COMPLICATED
   DIVERTICULOSIS OF THE LARGE INTESTINE -U-
AUTHOR-(04)-KHASPEKOV, G.E., BRAYTSEVA, M.D., GAZETOV, B.M., KHAZHINSKAYA,
   G.M.
COUNTRY OF INFO--USSR

SOURCE--KLINICHESKAYA MEDITSINA, 1970, VOL 48, NR 6, PP 103-107

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--GERONTOLOGY, LARGE INTESTINE, DIGESTIVE SYSTEM DISEASE,
   CANCER, SURGERY, RADIOLOGY, INTESTINAL OBSTRUCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1931   STEP NO--UR/0497/70/048/006/0103/0107

CIRC ACCESSION NO--AP0129280
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0129280

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DIVERTICULOSIS OF THE LARGE INTESTINE IS COMMONLY OBSERVED IN PERSONS OVER 50 YEARS OLD.   IN ITS ORIGIN A LEADING ROLE IS PLAYED BY INCREASE OF THE INTRAINTESTINAL PRESSURE AGAINST THE BACKGROUND OF CONGENITAL OR ACQUIRED WEAKNESS OF THE INTESTINAL MUSCULAR LAYER. THE CLINICAL PICTURE OF THE DISEASE IS NOT CHARACTERISTIC. COMPLICATIONS ARE NUMEROUS AND VARIED. THE AUTHORS COMMIT TO PAPER PERSONAL OBSERVATIONS OF COMPLICATIONS OF DIVERTICULOSIS BY PERFORATION, INTESTINAL OBSTRUCTION, FISTULAS, THE DEVELOPMENT OF MALIGNANT RUMORS. THE PAPER CONTAINS A DETAILED CLINICO ROENTGENOLOGICAL PICTURE OF THE DISEASE AND DISCUSSES PROBLEMS OF THE SURGICAL TREATMENT.   FACILITY: RENTGENOLOGICHESKOYE OTDELENIYE TSENTRAL'NOY KLINICHESKOY BOL'NITSY IM SEMASHKO, MINISTERSTVA PUTEY SOOBSHCHENIYA SSSR I KURS PROKTOLOGII TSENTRAL'NOGO INSTITUTA USOVERSHENSTVOVANIYA VRACHEY.

124952t Effect of the magnetic treatment of water on the concentration of dissolved oxygen. Klassen, V. I.; Shafeev, R. Sh.; Khazhinskaya, G. N.; Koryukin, B. M.; Stetskaya, S. A. (Inst. Goryuch. Iskop., Moscow, USSR). Dokl. Akad. Nauk SSSR 1970, 190(6), 1391-2 [Phys. Chem] (Russ). The effect of passing H_2O through 10 magnetic fields on the effective concn. of O, C_0, in soln. was detd. After 5 min, C_0 increased. This increase was most pronounced when the initial C_0 was lowered by bubbling N through the H_2O. Increasing the period between the end of the magnetic treatment and the addn. of pyrogallol lowered C_0.   GBJR

REEL/FRAME
19891576

USSR

UDC   531.36

KHAZIN, L. G.

"Problems of Stability of the Equilibrium Position of Hamiltonian Systems, and Resonances"

Tr. 5-y Mezhdunar. konferentsii po nelineyn. kolebaniyam, 1969. T. 2 (Works of the Fifth International Conference on Nonlinear Oscillations, 1969. Vol. 2), Kiev, 1970, pp 501-506 (from RZh-Mekhanika, No 10, Oct 71, Abstract No 10A204)

Translation: The author considers the problem of stability of the equilibrium position of an autonomous Hamiltonian system of equations assuming that the quadratic part of the Hamiltonian is indefinite and that the eigenvalues $\pm\beta_1, \ldots, \pm\beta_n$ of the linearized system of equations are purely imaginary.

The system has resonance if $\sum_1^n k_\alpha \beta_\alpha = 0$, k_α are integers. The number $k = \sum_1^n |k_\alpha|$ is called the order of the resonance.

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USSR

KHAZIN, L. G., Tr. 5-y Mezhdunar. konferentsii po nelineyn. kolebaniyam, 1969, Vol. 2, Kiev, 1970, pp 501-506

It is shown that 1) the equilibrium position of a system having third-order resonance is unstable in the Birkhof sense in this order; 2) when order three resonance is present in the system, instability of the equilibrium in the third order implies Lyapunov instability.

In addition, the author studies the problem of stability of an abbreviated (model) system derived from the initial system by dropping terms of higher than fourth order, assuming that it has fourth order resonance. A necessary and sufficient condition for the stability of this system is pointed out. It is shown that when the sign of inequality in the latter system is reversed, the equilibrium position is unstable in the Lyapunov sense in virtue of the complete initial Hamiltonian system. V. P. Rubanovskiy.

2/2

Veterinary Medicine

KHAZIPOV, N. Z., and TYURIKOVA, R. N., Kazan' Veterinary Institute, Kazen'

"Biosynthesis of Proteins and Ribonucleic Acids in Cells During the Propagation of the Virus of Foot-and-Mouth Disease"

Abstract: The biosynthesis of RNA and proteins during culturing of the virus of foot-and-mouth disease on a culture of PP cells was investigated. Growth of the virus was accompanied by an inhibition of the formation of cell protein. The virus-specific protein that was isolated had no effect on the synthesis of PP cell protein; the inhibiting effect, which also involved suppression of the synthesis of ribonucleic acids in the cells, was associated with the virus genome rather than virion proteins. On infection of a culture of chick embryo fibroblast cells, which are insensitive to the virus, the inhibitor could be isolated from both the cytoplasm and nuclear fractions. The isolated inhibitor had the characteristics of a protein. It suppressed the synthesis of protein in the chick embryo fibroblast cells, while the formation of cell RNA on infection of these cells with the virus was not affected. In the presence of actinomycin D, which inhibited to 96% the synthesis of cell RNA, synthesis of RNA was induced by the virus took
1/2

USSR

KHAZIPOV, N. Z., and TYURIKOVA, R. N., Veterinariya, No 5, May 73, pp 65-67

place.   In infected PP cell cultures, emetine fully suppressed the synthesis
of virus RNA by acting on the formation of cell protein.   Guanidine complete-
ly inhibited the synthesis of virus RNA in these cultures by blocking
directly its formation.

2/2

USSR

GUBIN, V. Ye., ISUPOV, Yu. G., ORESHINA, M. D., KHAZIYEV, N. N., SHEMYAKINA, G. N.

"Free Convection in a Horizontal Cylinder"

Translation: Free, unstable convection in an infinite horizontal circular cylinder is studied. The wall temperature of the cylinder is maintained constant and differs from the temperature of the fluid. The temperature difference and size of the cavity are assumed sufficiently great that convection occurs in the boundary-layer mode. The problem is solved on the assumption of quasistability of the process: it is considered that the structure of the flow is determined at a given moment in time by the instantaneous temperature difference between the walls and the fluid and is independent of the rate of change of temperature with time.

The equations for planar, stable convective motion in the boundary layer approximation are solved by the Karman-Polhausen method. Laminar and turbu-

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USSR

lent flow modes are studied. The velocity and temperature are approximated by polynomials. The Reynolds analogy is used in the turbulent case. The solution of the nonlinear systems of equations for the velocity and thickness of the boundary layer is produced by the method of power series using a longitudinal coordinate. Furthermore, an analytic solution in the area of large Prandtl numbers is found in the laminar case. The boundary layer characteristics and heat flow through the surface of the cylinder are calculated.

Results are presented from an experimental study performed using two models with diameters of 30.5 and 97.5 cm and lengths of 15 and 27 cm respectively. The working fluids were gasoline and distilled water. Processing of the experimental data produced on heat transfer produces the dependence $N = 0.340 \, (GP)^{0.25}$ in the laminar case and $N = 0.092 \, (GP)^{0.40}$ in the turbulent case (Nusselt number N and Grashoff number G defined through diameter of cylinder and temperature difference between wall and fluid; P is the Prandtl number). Heating time of the fluid is estimated.

2/2

USSR

ORESHINA, M.D., SAVEL'YEVA, L.I., KHAZIYEV, N.N., SHEMYAKINA, G.N. (Ufa)

"Free Convection of a Fluid With an Initial Vertical Density Gradient, With Heating on the Side"

Abstract: Some results of experimental research on free convection in solutions with nonuniform density with respect to height are presented. It is shown that in the presence of a vertical density gradient and side heating, the convective motion in solution is of a cellular character. The relationship of the height of individual cells to the temperature pressure and the density gradient is ascertained. 2 figures, 5 bibliographic entries.

1/1

USSR

UDC   621.378.32:539.2

PERSMAN, I. A., KHAZOV, L. D.

"Photoelectric Phenomena Which Develop on the Surface of a Transparent Dielectric Subjected to Laser Emission"

Moscow, Kvantovaya Elektronika, No 2, 1971, pp 74-79

Abstract: An investigation was made of the photocurrents which arise on the surface of a transparent dielectric in air when exposed to laser emission with a flux density several times below the threshold energy which corresponds to sparking. Fatigue of the photocurrent was observed with repeated exposure of the same section of the surface to a beam of constant density, the photocurrent signal being restored when the flux density was increased. It is shown that the signal recorded was photoemissive. Preliminary repeated exposure of the surface to a laser flash of subthreshold intensity causes almost no increase in the luminous strength of the surface. An explanation of the observed phenomena is proposed. The amplitude of the first-flash photocurrent is strongly dependent on the quality of the surface finish, and in this sense correlates with destruction thresholds. Six figures, one table, bibliography of 8 titles.
1/1

1/2   032   UNCLASSIFIED   PROCESSING DATE---20NOV70
TITLE--DEPENDENCE OF THE BREAKDOWN THRESHOLD OF A TRANSPARENT DIELECTRIC
   ON LASER PULSE DURATION -U-
AUTHOR-(04)-NESTEROV, L.A., POPLAVSKIY, A.A., FERSMAN, I.A., KHAZOV, L.D.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL TEKHNICHESKOI FIZIKI, VOL. 40, MAR. 1970, P. 651-653

DATE PUBLISHED------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--LASER PULSE, DIELECTRIC BREAKDOWN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/1256   STEP NO--UR/0057/70/040/000/0651/0653

CIRC ACCESSION NO--AP0115273
                           UNCLASSIFIED

CIRC ACCESSION NO--AP0115273
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTAL DETERMINATION OF THE
  ENERGY DENSITY THRESHOLD FOR LASER INDUCED SURFACE BREAKDOWN OF A
  TRANSPARENT DIELECTRIC AT GIVEN LASER PULSE DURATIONS AND BEAM
  DIAMETERS. AN EQUATION RELATING THESE FACTORS IS DERIVED FOR PULSE
  DURATIONS RANGING FROM 2 MICROSEC TO 20 NSEC AND SAMPLE DIAMETERS FROM
  8.7 TO 340 MICRONS. THE EQUATION IS ALSO APPROXIMATELY ACCURATE FOR
  GIANT PULSE EMISSION OF ABOUT .001 SEC IN DURATION AND FOR INTERNAL
  BREAKDOWN OF THE MATERIAL. IT IS SUGGESTED THAT THE DEPENDENCE OF
  THRESHOLD POWER ON PULSE DURATION IS DUE TO THERMAL DIFFUSION FROM THE
  IRRADIATED ZONE.

UNCLASSIFIED

USSR

UDC 629.841.621.643.2/3

RASHIDOV, T., KHOZHMETOV, G., and KHAZRATKULOV, M., Institute of Mechanics and of Earthquake Resistance of Buildings imeni M. T. Urazbayeva, Academy of Sciences UzSSR

"Earthquake Resistance of Complex Systems of Underground Buildings for an Elastic-Viscous Model of the Interaction of Buildings With the Ground"

Abstract: A theoretical investigation was made of the vibrations of a complex node of an underground pipe-line laid in an elastic-viscous (relaxing) ground, with accounting for the rotation inertia of the node. As a result of studying the vibrations of pipe-lines with a complx node and consisting of independent pipe sections on both sides of the complex node, at I_x and $I_y \neq 0$, for rigid butt-joining and the case of an elastic-viscous model of pipe-ground interaction, a system of differential equations was derived with constant coefficients. The system describes the motions of complex systems of underground buildings under the action of seismic forces. A program was developed for solving this system with the help of an electronic digital computer. Sixteen formulas, five bibliographic references.
1/1

USSR

ANDRONIKASHVILI, E. L., ROYNISHVILI, Ye. Yu. and KHECHINASHVILI, N. N., Institute of Physics, Academy of Sciences, Georgian SSR, Tbilisi

"Calorimetric Study of the Possibility of Phase Transformations in Biological Tissues at Low Temperatures"

Abstract: The dependence of specific heat on temperature was studied in calf liver and frog muscle by the method of low temperature calorimetry at $-196°C$ to $+10°C$. Using a preparation of liver and muscle in Earl's solution and glycerine of various concentrations, it is possible to extend significantly the interval of crystallization, and to displace the onset of crystallization of water, however no low-temperature phase transformations were noted in these experiments.

1/1

USSR   UDC 612.85:62-50

KHECHINASHVILI, S. N., KEVANISHVILI, Z. Sh., and KADZHAYA, O. A., Tbilisi
Institute for the Advanced Training of Physicians

"Investigation of Induced Auditory Potentials in Human Cerebral Cortex by
Means of an Electronic Computer"

Abstract: Cerebral cortical potentials, induced by sound stimuli, were re-
corded by monopolar electrodes, amplified and averaged by an electronic com-
puter, and analyzed. A single sound induces two deflections, with a negative
peak in 100 msec and a positive peak in 185 msec. The amplitude is greatest
at a stimulation rate of one sound per 5 sec. With increasing stimulation
rate, the amplitude decreases, to become indiscernible at a stimulation rate
of three sounds per sec. The contralateral response is greater than the
ipsilateral. A threshold stimulus produces only the contralateral response.
Upon delivery of paired stimuli to one ear, the second response is weaker.
However, when the first stimulus is delivered to the other ear, no reduction
occurs in the second response. In individuals with impaired hearing, all
induced action potentials are weaker.
1/1

USSR

KHEGAI, F.

UDC 515.2/.8

"Geodesic Lines of a Discretely Linear Framework"

Translation: Geodesic lines of a discretely linear framework were studied and their properties were explained on the basis of a geometric interpretation of the equilibrium mechanics of a flexible filament.

Author's summary

1/1

KHEGAZI, S. KH.

NAVTRASPEC / TRANSPEC

DEPARTMENT OF THE NAVY
NAVAL INTELLIGENCE SUPPORT CENTER
TRANSLATION DIVISION
4301 SUITLAND ROAD
WASHINGTON, D.C. 20390

CLASSIFICATION: UNCLASSIFIED

APPROVED FOR PUBLIC RELEASE, DISTRIBUTION UNLIMITED

TITLE: Application of the Method of Finite Elements to the
Calculation of Ship Structures

Ispol'zovanie metoda konechnykh elementov dlya rascheta
sudovykh perekrytiy

AUTHOR(S): Toschev, V. A., Khokhurin, I. Ya., and Khegazi, S. Kh.

PAGES: 12

SOURCE: Sudostroyeniye, No. 6, 1971
Pages 11-15

ORIGINAL LANGUAGE: Russian

TRANSLATOR: DM

NISC TRANSLATION NO. 3420

APPROVED [signature]

DATE 18 March 1971

USSR   UDC 547.458.5

YEVDAKOV, V. P., KHORLINA, I. M., and KHELEMSKAYA, N. M.

"The Use of Amides of Trivalent Phosphorus Acids in the Synthesis of
Polygalacturonic Acid Amides"

Abstract: It was shown that amides of phosphorus acids may be used in the
conversion of carboxyl and ester groups of acid polysaccharides into amides.
This reaction is not accompanied by phosphorylation of the polysaccharide
hydroxyl group to any noticeable degree. Varying the reaction conditions --
time, temperature -- the N,N-diethylamides of polygalacturonic acid may be
obtained with the desired degree of amide content, from 10 to 85%.

1/1

KHELEMSKIY, E. I.

COLLEN

SO: JPRS 53382
19 Jun 71

UDC 612.886.014.47

EVALUATING VESTIBULAR TOLERANCE

[Article by R. R. Galle, B. V. Ustyushin, L. N. Gavrilova and E. I. Khelemskiy, Moscow, Aviakosmicheskaya Meditsina i Biologiya, Russian, Vol 5, No 1, 1971, pp 65-71]

Abstract: This paper gives an analysis of clinical symptoms, somatic (nystagmus and equilibrium function) and autonomic (systemic and retinal hemodynamics) components of vestibular responses of 54 healthy male test subjects examined using the Coriolis acceleration test. It also describes an approach to be used in evaluating human tolerance to vestibular stimulation. With this approach the test subjects can be classified as tolerant and intolerant to vestibular stimuli. Vestibular intolerance is suggested by the development of third-degree vestibular-autonomic reactions. With respect to the time of appearance and level of manifestation of the responses, it is suggested that three degrees of vestibular tolerance and three degrees of vestibular intolerance be discriminated, each of which can be characterized by certain clinical and physiological reactions. This approach to vestibular evaluations can be used in screening various types of personnel.

Evolution of the methods for expert evaluation of tolerance to vestibular effects is inseparably related to the development of means for motion. Whereas in the 1930's-1940's it was the so-called otolithic reaction (OR) and a test in which swings which was most important and which entirely satisfied the requirements which at that time were imposed on flight personnel (V. I. Voyachek, 1946; K. L. Khilov, 1936), as a result of improvements in aviation and particularly with the development of space flight, methods for investigating tolerance to Coriolis acceleration are now assuming increasingly greater importance. Most researchers feel that tests revealing accumulation of Coriolis accelerations are more informative and more valuable for prognostic purposes than any other vestibular tolerance tests (S. R. Anekatova;

- 99 -

KHELEMSKIY, M. Z., CHEPEGINA, F. D., and BOLDYREV, B. G.

"Application of Thiosulfonate Esters in the Control of Decay of Root Crops During Storage"

Translation: Eighteen compounds were studied under laboratory conditions to determine the physiological effects of RSO_2SR' on stored root crop decay. The highest fungicidal activity against Botrytis cinerea and Fusarium betae was exhibited by $EtSO_2SCCl_3$ and $PrSO_2SCCl_3$, and against Phoma beta, by $MeSO_2SMe$, $EtSO_2SEt$, $EtSO_2SBu$, and $PrSO_2SPr$. These compounds diluted 1:5000 still had fungicidal activity but did not have a toxic effect on the sugar beets.

1/1

USSR   UDC 536.46:533.6

ZARKO, V. Ye., MIKHEYEV, V. F., ORLOV, S. V., KHELEVNOY, S. S., CHERTISHCHEV, V. V.

"On the Characteristics of the Ignition of Gun Powder by a Hot Gas"

V sb. Goreniye i vzryv (Combustion and Explosion -- Collection of Works), Moscow, "Nauka", 1972, pp 34-37 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B933)

Translation: Combustion characteristics are investigated under conditions of conductive and convective heat transfer from a hot gas and the limits of applicability of the thermal theory are determined. The objects of investigation were nitroglycerine gun powder and compressed nitrocellulose. It is shown that there exists a region of condition in which ignition is determined preferentially by the parameters of the solid-phase reactions for substances with a complex reaction mechanism (in the solid and gas phases). The preponderance of gas-phase reactions is achieved under conditions of conductive heating by a rise in pressure (due to ballasting of the reaction mixture by inert gas); under conditions of convective heating it is due to intense escape of gaseous products of

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USSR

ZARKO, V. Ye., et al, Goreniye i vzryv, Moscow, "Nauka", 1972, pp 34-37

the decomposition of the high-speed gas flow. The second method of heating is less suitable for the study of nitroglycerine gunpowders and other explosives, the melting temperature (softening, liquefication) of which is lower than the ignition temperature. 5 ref. Authors' abstract.

2/2

1/2   031   UNCLASSIFIED   PROCESSING DATE--09OCT70
TITLE--CYTOCHEMICAL PECULIARITIES OF RIBONUCLEOPROTEIDS AND OF THE
    DESOZYRIBONUCLEOPROTEID COMPLEX IN THE NUCLEOLES OF RETICULAR CELL
AUTHOR-(03)-SHABADASH, A.L., KHESIN, YA.YE., KHEMCHYAN

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN'EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69, NR
    4, PP 107-110
DATE PUBLISHED------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CYTOLOGY, DNA, LEUKEMIA, PRIMATE, HISTOCHEMISTRY, BIOLOGIC
    STAIN, RNA, THYMUS GLAND, METHYLENE BLUE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/1653
                              STEP NO--UR/0219/70/069/004/0107/0110
CIRC ACCESSION NO--AP0106399
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0106399
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN STABILE LINES OF RETICULAR
CELLS (APE'S TONSILS AND THE BLOOD OF MAN WITH MONOCYTIC LEUKEMIA)
HISTOCHEMICAL INVESTIGATIONS DISCLOSED FIVE FRACTIONS OF THE
RIBONUCLEOPROTEID NUCLEOLAR STRUCTURES, ANALOGOUS TO THOSE DESCRIBED
EARLIER BY SHABADASH ET AL. IN NERVE CELLS.   WHEN STAINED WITH METHYL
BLUE THE ISOELECTRIC POINTS OF THE FRACTION I CORRESPOND TO PH-2.5, II,
TO PH 2.7-3.2; III AND IV, TO 3.5-3.8; V, TO PH 4.0-4.5.   CHRYSOMALINE
(THE INHIBITOR OF THE DNA DEPENDENT RNA SYNTHESIS) OR ETHIONINE (THE
INHIBITOR OF THE PROTEIN SYNTHESIS) ARE CAUSATIVE IN MAKING THE FIRST
THREE FRACTIONS DISAPPEAR.   ETHIONINE PRODUCES THE GREATEST IMPACT ON
THE IV FRACTION, THIS POINTING TO A HIGH PROPORTION OF PROTEINS
CONTAINED IN IT.   RELATIVELY RESISTANT IS THE V FRACTION, THE COMPLEX OF
RNA WITH DNA OF THE HETEROCHROMATIN TYPE, THIS CORRELATING WITH RECENT
BIOCHEMICAL INVESTIGATIONS OF THE THYMUS CELL NUCLEI.   THE DESCRIBED
NUCLEOLAR COMPONENTS ARE, EVIDENTLY, TYPICAL FOR DIVERSE CELLS AND CAN
BE ELIMINATED EXPERIMENTALLY THROUGH AN ORIENTED ACTION.

USSR

UDC 621.371.332.1

KHMELEVTSOV, S. S., and TSVYK, R. SH.

"Fluctuations in Intensity and Incidence Angles of Light Waves in Space-Limited Collimated Beams in a Turbulent Atmosphere"

Tomsk, Izvestiya VUZ -- Fizika, No 9, 1973, pp 108-112

Abstract: The purpose of the experiments described in the present paper is to determine the incident angles and fluctuations in intensity in collimated laser beams under various geometrical conditions. It is asserted that the question of what effects the spatial limitations of a collimated light beam have on the variations of its parameters with the beam propagated in a turbulent atmosphere has not been given sufficient experimental study. The measurements were made over a range of 500-7000 m. For a range of 1360 m, with the radiation emitted from and returning to the source, the altitude of the beam was 0.5-1.5 m above the smooth surface of the Tom' river valley, the profile of which is sketched. Over the longer ranges, the beam was maintained at an altitude of 10-30 m above rugged terrain. The radiation source was a helium-neon laser operating at a 0.63 μ wavelength and power output of 10 w, with axial oscillation. The experimental data characterizing the change in dispersion of the fluctuation of the intensity in the transition from
1/2

USSR

KHMELEVTSOV, S. S., and TSVYK, R. SH., Izvestiya VUZ -- Fizika, No 9, 1973, pp 108-112

spherical to unbounded plane waves shows that the dispersion level is between the fluctuation levels for the spherical and plane waves.

2/2

1/2   025   UNCLASSIFIED   PROCESSING DATE--11SEP70
TITLE--EXPERIMENTAL DETERMINATION OF LATERAL THRUST COEFFICIENTS FOR DRY,
LOOSE, FIBROUS GASKET PACKING -U-
AUTHOR--DOMASHNEV, A.D., KHEMLNIKER, V.L.

COUNTRY OF INFO--USSR

SOURCE--KHIM. NEFT. MASHINOSTR. 1970, (2) 1-2

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--SEAL, GRAPHITE, MOLYBDENUM DISULFIDE, PACKING MATERIAL,
LAMINATED MATERIAL, ASBESTOS/(U)TCHZ LAMINATED GRAPHITE, (U)AM50 PACKING
MATERIAL, (U)AG50 GASKET

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/1137   STEP NO--UR/0314/70/000/002/0001/0002

CIRC ACCESSION NO--AP0107626
                          UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0107626

ABSTRACT/EXTRACT--(U) GP-0- THE COEFF. OF LATERAL THRUST (K) WAS DETD.
FOR THE FOLLOWING MATERIALS: MOS SUB2 (NATURAL MOLYBDENITE) (K EQUALS
0.46); TCHZ LAMINATED GRAPHITE (K EQUALS 0.36); AM50 PACKING CONTG. MOS
SUB2 50; LONG FIBERED SERPENTINE ASBESTOS 45, AND AL POWDER 5PERCENT (K
EQUALS 0.38); AG 50 ASBOGRAPHITE GASKET CONTG. 50PERCENT GRAPHITE (K
EQUALS 0.31); AND AS DRY ASBESTOS CORD (K EQUALS 0.27).   AN OUTLINE OF
THE SPECIAL APP. USED FOR THE DETNS., AND CURVES SHOWING THE DEPENDENCE
OF THE LATERAL THRUST ON THE AXIAL THRUST FOR THESE MATERIALS ARE GIVEN.

UNCLASSIFIED

104091h Ultrasonic absorption in ethylene glycol, glycerol, and diethylene glycol. Berdyev, A. A.; Khemrayev, B.; Seidov, A. (Fiz.-Tekh. Inst., Ashkhabad, USSR). *Izv. Akad. Nauk Turkm. SSR, Ser. Fiz.-Tekh., Khim. Geol. Nauk* 1970, (1), 98–101 (Russ). The ultrasonic absorption of ethylene glycol (I), glycerol (II), and diethylene glycol (III) was studied at 5–40° with the frequencies, ν, at 20–1000 MHz. The quantities detd. were the absorption coeff. of the ultrasound, α, measured by the impulse method, as well as the ultrasound velocity, v, the viscosity, η, and the d., d. Thus, the values found at 30° were as follows [compd., d, η in P, v in m/sec, and Stokes absorption characteristics $(\alpha/\nu^2)_s \times 10^{-17}$ in $cm^{-1} sec^2$ are given]: I, 1.1034, 0.15, 1645, 81; II, 1.2468, 2.57, 1904, 797; III, 1.1095, 1.78, 1568, 1093. The spectrum of relaxation times was broad at the frequencies and temps. studied. The use of the method of reduced variables for I and III shows the temp.-frequency dependence to be identical for all relaxation times.   C. Parkanyi

REEL/FRAME
19801545

AZIMOV, S. A., MYALKOVSKIY, V. M., NURITDINOV, Kh., RAGULMULOV, M. S.,
ABDULLAYEV, A. M., BEYSEMBAYEV, R. U., GAVRILIN, Ye. V., TALIPOV, D. A.,
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"Study of the Characteristics of High-Energy Interactions of Pions and
Nucleons"

Abstract: Experimental data obtained at the Kum-Bel' High-Altitude
Station of the Physicotechnical Institute of the Academy of Sciences
Uzbek SSR are reported. The station is 3200 m above sea level. The
setup contains three series of wide-gap spark chambers with effective
areas of 2 m² placed above and below the target. The Cerenkov spectro-
meter with total absorption and an ionization calorimeter with an area of
10 m² were used to measure the primary energy E_0. Up to the present time
experimental data obtained over 630 hours of operation of the device have
been processed, with a high-voltage pulse being supplied to the electrodes of
the spark chambers. Showers with an energy of > 200 Gev generated in the target
were selected for analysis. The following ratio was obtained for the number
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AZIMOV, S. A., et al., Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 36, No 8, Aug 72, pp 1626-1631

of primary charged N_c and neutral N_n particles: $N_c/N_n = 2.3 \pm 0.3$; this shows that the proportion of charged particles is ~34% of all nuclear active particles, thus making it possible to study pion-nuclear collisions by comparing the characteristics of the interaction of charged and neutral primary particles. A weak functional dependence between the inelasticity coefficient $\langle K_{\pi^o} \rangle$ and the atomic number of the target nucleus and a strong functional dependence between this coefficient and the nature of the primary particles were obtained for interactions of hadron with $E_0 > 200$ Gev. $\langle n_s \rangle$ is almost a logarithmic function of E_0. The average multiplicity in the interaction of pions with neutrons in paraffin is identical within the experimental limit. A considerable azimuthal effect was observed for the angular distribution of secondary particles. The azimuthal effect has its greatest value for showers with $n_s = 8$-15, or a multiplicity close to average.

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ABDULLAYEV, A. M., AZIMOV, S. A., BEYSEMBAYEV, R. U., BELITSKIY, M. T.,
MULLIZHANOV, E. ZH., MYALKOVSKIY, V. M., TALIPOV, T. A., TILLAYEV, T.,
UMEROV, R., KHEN, E., and YULDASHBAYEV, T. S.

"Study of Characteristics of Inelastic Interactions of Cosmic-Ray Particles
in the 10^{11} to 10^{12}-ev Energy Range"

Abstract: Experiments that were performed at the high-altitude test station
(3,200 m.) at Kum-Bel' in Uzbekistan are described. The purpose of the exper-
iments was to investigate the angle of arrival and the energy characteristics
of interactions of pions and nucleons with light and heavy nuclei at 2×10^{11}
to 2×10^{12} ev and the mechanism of generating muons at energies above 2×10^{12}
ev. Equipment consisted of spark chambers, located above and below the target
(paraffin wax, carbon, and iron), a Čerenkov spectrometer of full absorption,
and an ionization calorimeter. This complex method of measurements was found
convenient for use in various modes of operation. A detailed description of
various parts of the installation and their disposition is given in the paper.

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Joint operation of ionizing calorimeters and spark chambers is normally difficult because of the need for high voltage on the calorimeter electrodes, combined with the time lag of the input pulse from the spark chambers, amounting to over 20 microseconds. This difficulty was avoided in the present experiments by storing pulses in memory cells, with the subsequent input of a high-voltage pulse of about 120 kv. Operation was controlled by a master-pulse, prior to which all parts of the equipment were kept inoperative.

Results of 200 hours of the joint operation of a Cerenkov spectrometer and ionizing calorimeter, with graphite used as the target, have been processed so far. For analysis, showers with energy above 1.5×10^{11} ev were selected, 130 of them having been observed. The ratio of charged to neutral nucleons were determined and, from it, the fraction of charged pions of the total nucleus-active stream of particles. The inelastic coefficient for the formation of π^0-mesons was computed from the experiments related to the interaction of neutral particles with nuclei of graphite.

It is concluded that the combination of ionizing calorimeter with Cerenkov spectrometer of full absorption for the simultaneous determination of energy of primary particles made it possible to determine the fraction of

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ABULLAYEV, A. M., et al., Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol. 35, No 10, Oct 71, pp 2065-2068

energy supplied by the ionizing particles η, since a Cerenkov spectrometer measures only the energy emitted by relativistic particles. It was found that for the mean energy of primary particles of 350 Gev the energy part lost on nuclear fissions in the spectrometer, with CCl_4 as the light emitter, is η = 0.25,

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USSR   UDC 621.382.3

KARYAKINA, N.V., POLIKARPOV, E.D., KHENKIN, E.A.

"Investigation Of The Noise Characteristics Of Planar Transistors"

V sb. Poluprovodn. pribory i ikh primeneniye (Semiconductor Devices And Their
Application--Collection Of Works), Issue 24, Moscow, "Sov.radio," 1970, pp
52-58 (from RZh--Elektronika i yeye primeneniye, No 4, April 1971, Abstract No
4B234)

Translation: The results are presented of an experimental investigation of the
noise characteristics of planar transistors, and a comparison is made with the
noise characteristics of transistors produced without using planar technology.
6 ill. 1 ref. Author's abstract.

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USSR   UDC   669.725:621.785.7:539.31

LOKSHIN, I. KH., KHENKIN, M. L. and LEVINA, N. K.

"Changes in the Resistance of Beryllium to Microplastic Deformations With Aging"

Moscow, Metallovedeniye i termicheskaya obrabotka metallov, No 3, 1972, pp 54-55

Abstract: This study concerns the effect of aging on the elastic limit and relaxation resistance of beryllium produced by sintering the powder with a particle diameter of 56µ. The experimental materials included both techni-cal-grade hot-formed and distilled extruded beryllium; the iron content in the latter was by almost one order of magnitude lower than in the technical-grade while the aluminum contents were equal. Both the technical and distilled beryllium specimens exhibited their maximum resistance to micro-plastic deformation after aging at 500° and 400°C, respectively. The effect of aging and precipitation hardening in beryllium appears to be a function of its iron content. (2 illustrations, 5 bibliographic references).

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USSR   UDC 669.725:620.172.2

KHENKIN, M.L., LOKSHIN, I.KH., LEVINA, N.K., and AKOPOV, I.A.

"Increasing the Resistance of Beryllium to Microplastic Deformations by Thermocyclic Treatment

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 7, 1971, pp 50-52

Abstract: A study was made of a method of improving beryllium's resistance to microplastic deformations by using a stabilizing treatment (t ts o) consisting of several cycles of cooling (-50°, -72°, and -196°C) followed by low-temperature heating (+100° and +400°C). The results show that the relaxation stability increases 2 times with a temperature interval from -50° to +100°C, and increases further with an increasing temperature interval. The efficiency of treatment with an increasing number of cycles, practically speaking, does not increase after three cycles. Macrostresses also decrease with increasing relaxation stability. The observed increase in beryllium resistance to microplastic deformations is explained by processes of highspeed relaxation of microstresses occurring at thermal cycling in overstressed microvolumes and by stabilization of thin structure in these volumes. It is assumed that the effect of the described treatment may be obtained on other metals and alloys with hexagonal lattice.
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USSR   UDC: 519.1

KHENKIN, V. E.

"On Hamiltonian Cycles in Some Classes of Generalized Petersen Graphs"

Novosibirsk, Upravlyayemyye sistemy--sbornik (Controllable Systems--collection of works), vyp. 10, 1971, pp 48-61 (from RZh-Kibernetika, No 5, May 73, abstract No 5V491 by Yu. Voloshin)

Translation: The paper deals with the problem of existence of Hamiltonian cycles in generalized Petersen graphs $G(n,k)$ for the case of mutually simple parameters n, k. The principal results are formulated in terms of the concept of the characteristic $\lambda(G)$ of graph G defined as follows:

$$\lambda(G) = \begin{cases} S, \text{ where } S \text{ is the lowest possible number such} \\ \text{that there exists in graph G a system of S simple} \\ \text{cycles of even length which are disjoint with re-} \\ \text{spect to vertices and cover all vertices of G;} \\ 0, \text{ if the cycle system described above does not} \\ \text{exist in G.} \end{cases}$$

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