USSR   UDC: 519.21

YUDITSKAYA, P. I.

"Asymptotic Behavior of the Maximum of a Gaussian Field"

Teoriya veroyatnostey i mat. statist. Mezhved. nauch. sb. (Probability
Theory and Mathematical Statistics. Interdepartmental Scientific Col-
lection), 1970, vyp. 3, pp 240-247 (from RZh-Kibernetika, No 7, Jul 71,
Abstract No 7V148)

Translation: A real Gaussian separable homogeneous and isotropic field
$\xi(x)$ is considered, where x is a point in n-dimensional Euclidean space
R_n, it being assumed that $M\xi(x)=0$, $D\xi(x)=1$. In R_n, a singly connected
closed region E_1 of unit Lebesgue measure is isolated, E_R being under-
stood to mean the region obtained from E_1 as a result of the mapping
$x \to kx$, where k is a scalar. Making certain natural assumptions, the
author establishes (almost certainly) the existence of a number $K_0(\omega)$
such that

$$\left| \max_{x \in E} \xi(x) - \sqrt{2 \ln k^n} \right| < \frac{m_1 \ln \ln k^n}{\sqrt{2 \ln k^n}}.$$

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YUDITSKIY, A. I.

Radar

MULTIFILTER DETECTION CIRCUIT USING A PHASE AUTOCORRELATOR

G. A. Volkov, candidate of Technical Sciences
A. I. Yuditskiy, A. S. Zvenit, Engineers

UDC 629.7.058.7.001

Pages 200-216

The system for detecting radar signals with an unknown parameter, for example, a doppler shift, is constructed as a set of filters matched with all possible values of the signal parameter; the output voltages of the filters are compared in the decision circuit, where each other in the system of in-equal-to-and, as is shown, for example, in reference [1], the system of in-null-hypothesis test. If the parameters are continuously distributed in some interval, the system is unrealizable since the number of filters becomes infi-nite.
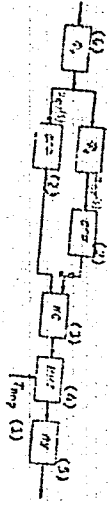
Figure 1. Block diagram of the phase autocorrelator

Key: 1. Tthresh
      2. Jfilter
      3. coincidence cascade
      4. Integrator
      5. threshold device
      6. filter

However, in reference [2] it was demonstrated that quasioptimal con-struction of the detection system by replacing an infinite number of cascade by a finite number of ... the threshold signal/noise ratio when the signal reaches of correct detection p ... a function of the ... the signal and the central filter frequency are of significant interest for the construction of such a system.

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YUDITSKAYA, P. I., Teoriya vero... stey Mat. statist. Mezhved. nauch. sb., 1970

when $k > K_0(\omega)$, where $m_1 = 2 + \varepsilon$ when $n = 2$ and $m_1 = \varepsilon + (n + 1)/2$ when $n \geqslant 3$ ($\varepsilon > 0$). M. Shur.

USSR

VOLKOVA, G. A., YUDITSKIY, A. I., PRONIN, A. S.

Translation: The paper gives an analysis of the operation of a phase auto-correlator when the frequency of the received signal does not coincide with that of the filter tuning. A relation is found for the probability of correct detection as a function of the difference between the signal frequency and the central matching frequency of the filter. This relation is used as a basis to show that a multifilter system can be constructed with the use of a phase autocorrelator. Three illustrations, bibliography of four titles. Resumé.

1/1

YUDITSKIY

USSR

AKUSHSKIY, I.Ya., YUDITSKIY, D.I.

UDC 681.3

"Redundancy in Non-Positional Systems"

Abstract: The possibility of constructing correcting codes in a system of residual classes is studied. The correcting capabilities of codes with one and two test bases are studied. It is demonstrated that it is possible to test not only an individual number but also the result of a number of rational operations. The possibility of correction of errors using a single test base by gradual localization of errors during the process of calculation (method of alternative sets) is demonstrated. On the basis of statistical modeling it is concluded that for a system of bases with a range of 10^{10} the mean number of operations required to localize the point of error is 4-5. The problem of applying a system of residual classes to increase the viability of both individual machines and multimachine complexes is discussed.
1/1

USSR

UDC 681.3

AKUSHSKIY, I.Ya., YUDITSKIY, D.I.

"Organization of Detection and Correction of Errors in Computers in Non-positional Systems"

Tsifrov. Modeli i Integriruyushch Struktury [Digital Models and Integrating Structures -- Collection of Works], Taganrog, 1970, pp 308-318 (Translated from Referativnyy Zhurnal Matematika, No 11, 1970, Abstract No 11V471 by the Authors)

Abstract: Correcting codes in a system of residual classes with one test base are studied. It is suggested that the method of zeroing of a number be used for testing, allowing the number of the interval in which the number is located to be determined unambiguously. If the result of zeroing is other than zero, this indicates that there is an error present.

The result of zeroing allows possible values of errors to be determined for each base. Due to determination not only of the location but also of the value of possible errors, an average of three operations is sufficient to localize an error. An example of correction of a single error by a correcting code with one test base is presented.

1/1

USSR

YUDITSKIY, M. I.

"Planning of Regression Experiments When Their Are Errors in the Variables"

Avtomatiz. Nauch. Issled. i Tekhn. Podgotovki Proiz-va [Automation of Scientific Research and Technical Preparation of Production -- Collection of Works], Kiev, 1973, pp 55-69 (Translated from Referativnyy Zhurnal Kibernetika, No 9V144)

Translation: The linear regression model $y = x^T\theta + \epsilon$ is studied, where y, θ, ϵ, x are the vectors of the measurements, unknown parameters, random errors and independent variables respectively. It is considered that variables x are random independent variables and $Ex_i = 0$, $Dx_i = \sigma^2$, but, in contrast to most works on this subject, it is assumed that after experimentation the values of independent variables x_i can be precisely measured. Under these assumptions, when the number of independent variables is not over 2, it is easy to find the mean values of variables maximizing certain characteristics of least-squares-method estimates for θ if the mean values of (x_i) do not exceed a certain constant.

1/1   M. Malyutov

YUDITSKIY, M. I.

"Random Walks With Absorption"

Translation: A study was made of Bernoullian random walks on a straight
line and on a circle with a partially (i.e., with a probability $r < 1$) and
with temporarily partially absorbing screens (i.e., with absorption for only
some finite time) at each point.

1/1

USSR

YUDKIN, F.

"A Rival of the Legendary Ginseng"

Sverdlovsk, Ural, No 11, 1970, pp 77-79

Abstract: The root of the ginseng plant has been known for its remarkable medicinal effects in the Far East for centuries. Plants of this family grow in East Asia, including Eastern Russia. In particular, at northern latitudes of up to 52°, one finds the thorny eleutherococcus, a species of Araliaceae to which ginseng belongs. Paradoxically the pharmacological significance of this particular species had not been recognized until the middle of this century. Since then intensive research has shown that one hectare of land planted with eleutherococcus can yield up to 5 tons of root, up to 2 tons of stalks, and up to half a ton of leaves. All these parts of the plant are medicinally active, and in 1969, 100 tons of root extract were produced in the Soviet Union, which is equivalent to 2 million monthly human doses. The strongly stimulating material has found recommended use in the raising of poultry, since it has been found that it acts as a substance capable of normalizing disturbances produced by stress in the animal organism. Stress may arise under a variety of conditions (love, illness, physical and psychic

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USSR

YUDKIN, F., Ural, No 11, 1970, pp 77-79

traumas, even during ordinary overwork). Stress is a protective reaction and helps the body, but any stress is to some extent accompanied by harmful after-effects. The effect of eleutherococcus on sperm production in bulls was studied also, and its beneficial stress-releasing effects were established.

Extraction and Refining

USSR

UDC: 669.71.41

YUDKIN, S. A., DUBODELOV, V. I.

"Influence of Technological Factors on the Process of Refining of Aluminum in Magnetodynamic Installations"

MGD v Metallurgii i Liteyn. Proiz-ve [MHD in Metallurgy and Foundry Production -- Collection of Works], Kiev, 1972, pp 30-35 (Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No 8G178, by G. Svodtseva).

Translation: There is interest in the use of electromagnetic installations of magnetodynamic type for the refining of Al and its alloys. The essence of the method is that active contact between metal and flux is provided by repeated continuous feed of melt under the influence of electromagnetic forces. Primary Al type A8 was refined with a triple flux (30% $NaCl$ + 23% Ba_3AlF_6 + 47% KCl).

The first series of experiments was designed to define an efficient flux state, the second -- to determine the optimal modes of circulation of the metal in the installation with injection of flux. The velocity of the stream causing the optimal movement of metal in the bath was 0.2 m/sec. The content of Al_2O_3

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USSR

Yudkin, S. A., Dubodelov, V. I., MGD v Metallurgii i Liteyn. Proiz-ve, Kiev, 1972, pp 30-35.

in the optimal liquid flux refining mode was decreased by 4 to 5 times (from 0.05 to 0.0125-0.01%). During the next 40 minutes after completion of the active stage of the process of refining, the quantity of Al_2O_3 in the metal increased to 0.02-0.03%, then stayed at this level. The slight increase in Al_2O_3 content can be explained by separation of Al_2O_3 particles from the oxide film formed on the surface of the metal after removal of flux by the circulation streams of metal in the bath. 5 figures, 5 biblio. refs.

2/2

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USSR   UDC: 669.715.046.54/55

YUDKIN, S. A., DUBODELOV, V. I., POLISHCHUK, V. P.

"Refining of Aluminum Alloys in Induction Channel Furnaces"

Moscow, Tsvetnyye Metally, No 8, Aug 73, pp 45-47.

Abstract: A system is developed for protection of the channel of induction furnaces from overgrowth. The optimal purification of aluminum alloys using active fluxes was observed at 720-730° C, with a flow rate of the stream at the nozzle of 0.22-0.25 mm/sec, using T-shaped fittings 0.30-0.32 m/sec.

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USSR   UDC: 620.18.539.4.019.3:621.791   (1)

MALAN'IN, Yu. M., KAVERINA, S. N., RZHEVSKAYA, I. Ya., SHULEPOV, V. I.,
YUDKOVSKIY, S. I., Moscow

"Study of Various Zones in a Welded Joint in Molybdenum by Methods of Internal
Friction and Electron Microscopy"

Abstract: It is demonstrated that the high probability of formation of
cracks in the zone around a welded seam in molybdenum results from the
disappearance of the cellular structure of the metal during welding, the
sharp drop in solubility of interstitial impurities and the separation of
carbide particles, around which significant local phase hardening occurs.

1/1

USSR

KISELEVA, M. V., KIYANOVSKIY, M. P., KNYAZYUK, V. S., LYAKHOVA, L. N., YUDOVICH, L. A.

"Forecasting the Critical Frequencies of the F2 Region"

V sb. Ionosfer. vozmushcheniya i ikh vliyaniye na radiosvyaz' (Ionospheric Disturbances and Their Effect on Radio Communications -- collection of works), Moscow, Nauka Press, 1971, pp 74-99 (from RZh-Radiotekhnika, No 1, 1972, Abstract No 1A333)

Translation: A study was made of the time and space correlations between the deviations of the critical frequencies of the F2 region from the normal values ($\Delta f_0 F2$) with respect to ionospheric data for the year of the maximum (1958) and minimum (1964) solar activity. The results with respect to the time correlation are reduced to the following: 1) for middle latitudes, the time stability is greater on days with negative disturbances and least of all on days with positive disturbances; in the equatorial latitudes, on the contrary, the time stability is greatest on days of positive disturbances; 2) in the summer the stability is greater than in the winter; 3) during the day the stability is somewhat higher than at night; 4) during the year of the maximum the stability is higher on the average than during the year of the minimum. The stability

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USSR

KISELEVA, M. V., et al., Ionosfer. vozmushcheniya i ikh vliyaniye na radiosvyaz',
Moscow, Nauka Press, 1971, pp 74-99

interval (the time period when the correlation coefficient $\rho \geq 0.5$) is highest
at latitudes of 40-60°. It drops at latitudes of 10-30° and again increases
at the equatorial stations but appreciably less. The time correlation offers
the possibility of extrapolation with respect to time in the middle latitudes,
especially under conditions of negative disturbance. For the most favorable
cases, the correlation equations are compiled for this purpose. A study of
the spatial correlation confirmed a strong decrease in the correlation coeffi-
cient ρ with distance with respect to longitude and especially with respect to
latitude. The spatial correlation is somewhat higher during negative distur-
bances during the years of maximum solar activity; during the day it is greater
than at night. There are 6 illustrations, 8 tables and an 18-entry bibliography.

2/2

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UNCLASSIFIED   PROCESSING DATE--20NOV70

1/3   031
TITLE--CHANGE IN N,H, PROFILES DURING POSITIVE IONOSPHERIC DISTURBANCES
DURING YEARS OF MAXIMUM AND MINIMUM SOLAR ACTIVITY -U-
AUTHOR-(04)-GONCHAROVA, YE.YE., ZEVAKINA, R.A., LAVROVA, YE.V., YUDOVICH,
L.A.
COUNTRY OF INFO--USSR

SOURCE--MOSCOW, GEOMAGNETIZM I AERONOMIYA, VOL X, NO 3, 1970, PP 547-549

DATE PUBLISHED-------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES, ASTRONOMY, ASTROPHYSICS

TOPIC TAGS--IONOSPHERIC DISTURBANCE, F LAYER, IONIZATION, AURORA, SOLAR
ACTIVITY, GEOMAGNETIC STORM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0526   STEP NO--UR/0203/70/010/003/0547/0549

CIRC ACCESSION NO--AP0132725
                    UNCLASSIFIED

2/3   031
CIRC ACCESSION NO--AP0132725

ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT. A STUDY WAS MADE OF CHANGE IN H(H)
PROFILES IN THE LATITUDE RANGE 80DEGREESN-12DEGREESS DURING TWO POSITIVE
DISTURBANCES OBSERVED DURING THE PERIOD OF THE MAXIMUM OF SOLAR ACTIVITY
24-28 FEBRUARY 1958 AND DURING THE PERIOD OF THE MINIMUM 14-15 JANUARY
1964. BOTH DISTURBANCES WERE OBSERVED BEFORE SMALL MAGNETIC STORMS.
SIMULTANEOUSLY WITH AN INCREASE IN IONIZATION IN THE F REGION THERE WAS
INCREASED ABSORPTION IN THE AURORAL ZONES. THE STUDY WAS MADE USING
HOURLY N(H) PROFILES FOR WASHINGTON, TALARA, HUANCAYO, IBADAN, AND
SINGAPORE, SUPPLEMENTED BY DATA FOR ALERT, BAKER LAKE, CHURCHILL, SP-5,
KHEYS ISLAND, DIKSON, MURMANSK, MOSCOW, AND ALMA ATA. COMPARISON OF
N(H) PROFILES FOR DISTURBED AND QUIET PERIODS INDICATED THAT DURING
POSITIVE DISTURBANCES THE ELECTRON CONCENTRATION INCREASES AT ALL
ALTITUDES IN THE F REGION AND TO THE GREATEST DEGREE NEAR THE IONIZATION
MAXIMUM. DURING THE NIGHTTIME AND MORNING HOURS THE GREATEST IONIZATION
INCREASE OCCURS IN THE HIGH LATITUDES, WHEREAS DURING THE DAYTIME IT IS
IN THE EQUATORIAL LATITUDES. N SUBMAX AND N FOR THE MOST PART HAVE
SIMILAR CHANGES. AN INCREASE IN IONIZATION OCCURS IN THE FORM OF BURSTS
WITH AN AVERAGE DURATION OF THREE OR FOUR HOURS. WITH A CONSIDERABLE
INCREASE IN N SUBMAX AND N (UP TO 80PERCENT) THE GEOMETRIC PARAMETERS H
SUBM, H SUB05 AND T CHANGE FOR THE MOST PART IN NORMAL LIMITS (PLUS OR
MINUS 20PERCENT) AT ALL LATITUDES. THESE PARAMETERS EXHIBIT AN
APPRECIABLE INCREASE ONLY WITH AN INCREASE IN MAGNETIC ACTIVITY.

3/3   031
CIRC ACCESSION NO--AP0132725
ABSTRACT/EXTRACT--AN INCREASE IN IONIZATION BELOW N SUBMAX DOES NOT OCCUR
AS A RESULT OF VERTICAL REDISTRIBUTION OF IONIZATION, BUT DUE TO
ADDITIONAL IONIZATION OF THE F REGION, PROPAGATING TO GREAT ALTITUDES.
THIS INCREASE IN IONIZATION CAN OCCUR OVER A GREAT PART OF THE EARTH OR
IN LIMITED REGIONS, PRIMARILY IN THE HIGH LATITUDES. ON QUIET DAYS THE
HIGHEST N VALUES WERE OBSERVED IN THE EQUATORIAL LATITUDES AND IN THE
AURORAL ZONE, WHEREAS DURING A POSITIVE DISTURBANCE THEY WERE OBSERVED
IN THE POLAR REGION. THE MAXIMUM INCREASE IN IONIZATION IN THE POLAR
REGION INDICATES A CORPUSCULAR NATURE OF POSITIVE DISTURBANCES. THIS
CORPUSCULAR RADIATION, LIKE THE PROTONS RESPONSIBLE FOR PCA, PRODUCES AN
INCREASE IN THE ELECTRON CONCENTRATION IN THE IONOSPHERE WITHOUT A
SUBSTANTIAL CHANGE IN THE GEOMAGNETIC FIELD AND IONOSPHERIC HEATING.
THESE STREAMS POSSIBLY CONSIST OF LOW ENERGY PROTONS AND ELECTRONS.
    FACILITY: INSTITUTE OF TERRESTRIAL MAGNETISM, IONOSPHERE AND RADIO
WAVE PROPAGATION.

UNCLASSIFIED   PROCESSING DATE--02OCT70

1/3   024
TITLE--CYCLIC VARIATIONS OF THE A SUB0 AND N PARAMETERS IN THE LATITUDE
DEPENDENCE OF MIDDAY F2 LAYER IONIZATION, MIDDAY IONIZATION OF THE F2
AUTHOR-(02)-BESPROZVANNAYA, A.S., YUDOVICH, L.A.

COUNTRY OF INFO--USSR

SOURCE--ARCTIC AND ANTARTIC SCIENTIFIC RESEARCH INSTITUTE AND INSTITUTE OF
TERRESTRIAL MAGNETISM, IONOSPHERE AND RADIO WAVE PROPAGATION; MOSCOW,
DATE PUBLISHED-------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES, ASTRONOMY, ASTROPHYSICS

TOPIC TAGS--F LAYER, IONIZATION, VERTICAL SOUNDING, SOLAR ACTIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/1664   STEP NO--UR/0203/70/010/002/0336/0338

CIRC ACCESSION NO--AP0109657
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0109657

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ANALYTICAL FORMULA FOR
DESCRIBING THE GEOGRAPHIC DISTRIBUTION OF MIDDAY IONIZATION OF THE F2
LAYER IS (SHOWN ON MICROFICHE) WHERE M SUBIK IS EQUAL TO THE RATIO OF
THE FOURTH POWER OF THE COSINES OF SOLARZENITH ANGLE AT THE ENDS OF THE
MAGNETIC LINE OF FORCE PASSING THROUGH A PARTICULAR POINT WITH
COORDINATES I (IN LATITUDE) AND K (IN LONGITUDE). THE PARAMETERS A SUB
O AND N ARE FOUND EMPIRICALLY. DATA FROM THE WORLD NETWORK OF VERTICAL
SOUNDING STATIONS IN THE NORTHERN HEMISPHERE WERE USED IN COMPUTING THE
A SUBO AND N PARAMETERS FOR 1958-1964. THE ANALYSIS REVEALED THAT THERE
ARE SUBSTANTIAL CYCLIC CHANGES IN THE AO AND N PARAMETERS WITH A
LATITUDE DEPENDENCE OF MIDDAY IONIZATION OF THE F 2 LAYER. THE RADIO
EMISSION FLUX AT LAMBDA EQUALS 10.7 CM CORRELATES BETTER WITH
PHOTOIONIZING RADIATION THAN WITH SPOT NUMBER. LINEARITY OF THE
DEPENDENCE IS NOT IMPAIRED EVEN DURING THE PERIOD OF HIGH SOLAR
ACTIVITY. COMPARISON OF DATA FOR 1958 AND 1964 REVEALED THAT IN
RELATIVE UNITS THE AMPLITUDE OF THE ANNUAL VARIATION REMAINS CONSTANT
WITH TRANSITION FROM YEARS OF MAXIMUM TO MINIMUM ACTIVITY, ALTHOUGH IN
ABSOLUTE VALUE IT DECREASED BY HALF DURING THIS PERIOD. THE EXPONENT N
IN THE FORMULA IS FOR THE COSINE OF SOLAR ZENITH ANGLE. THE NATURE OF
ITS CHANGES DURING THE CYCLE IS DIFFERENT FOR DIFFERENT SEASONS. DURING
MARCH AND DECEMBER N INCREASES WITH A DECREASE IN SOLAR ACTIVITY WHEREAS
IN JUNE AND SEPTEMBER IT DECREASES. IN YEARS OF MAXIMUM SOLAR ACTIVITY
THERE ARE LOW N VALUES DURING WINTER AND A MARKED INCREASE IN N WITH AN
INCREASE IN SOLAR DECLINATION FOR BOTH HEMISPHERES. IN WINTER THE N
VALUES IN YEARS.

UNCLASSIFIED

3/3   024   UNCLASSIFIED   PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0109657

ABSTRACT/EXTRACT--OF THE MINIMUM ARE GREATER THAN DURING YEARS OF THE
MAXIMUM. THE REVERSE IS TRUE FOR SUMMER.

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UNCLASSIFIED

1/2   018   UNCLASSIFIED   PROCESSING DATE--09OCT70
TITLE--INTERNATIONAL SUMMER SCHOOL ON IONOSPHERIC PHYSICS -U-

AUTHOR-(02)-DANILOV, A.D., YUDOVICH, L.A.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, GEOMAGNETIZM I AERONOMIYA, VOL X, NO 2, 1970, P 380

DATE PUBLISHED-------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES, BEHAVIORAL AND SOCIAL SCIENCES

TOPIC TAGS--IONSOPHERIC P YSICS, AERONOMY, UPPER ATMOSPHERE, CHARGED
PARTICLE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/0388   STEP NO--UR/0203/70/010/002/0380/0380

CIRC ACCESSION NO--AP0114677
UNCLASSIFIED

CIRC ACCESSION NO--AP0114677   UNCLASSIFIED   PROCESSING DATE--09OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN INTERNATIONAL SUMMER SCHOOL ON IONSOPHERIC PHYSICS WAS HELD AT SOCHI DURING THE PERIOD 3-16 SEPTEMBER 1969. THE SCHOOL WAS ATTENDED BY REPRESENTATIVES OF THE SOVIET UNION AND THE SOCIALIST COUNTRIES. OUTSTANDING SPECIALISTS IN THE FIELDS OF EXPERIMENTAL AND THEORETICAL IONOSPHERIC RESEARCH PRESENTED LECTURES. A. D. DANILOV GAVE A REVIEW OF CURRENT PROBLEMS IN AERONOMY, INCLUDING ATMOSPHERIC COMPOSITION, CHEMICAL REACTIONS AND INTERACTION OF RADIATION PROCESSES WITH THE UPPER LAYERS OF THE ATMOSPHERE. G. S. KVANON-KHOLODNYY GAVE A REVIEW OF EXPERIMENTAL DATA ON VERTICAL DISTRIBUTION, TIME OF DAY, SEASON, AND SOLAR ACTIVITY FOR ION COMPOSITION, TEMPERATURE AND EFFECTIVE RECOMBINATION COEFFICIENT. V. M. POLYAKOV PRESENTED A DETAILED EXAMINATION OF TRANSFER PROCESSES WHICH ON A GLOBAL SCALE AFFECT THE IONOSPHERIC DISTRIBUTION OF CHARGED PARTICLES.

UNCLASSIFIED

AP0042377..

one another only in activity. During disturbances associated with proton
flares there are the same changes in the F region as during other distur-
bances. This indicates that the low-energy solar plasma ejected during
proton flares is not significantly different from the plasma of other
corpuscular streams except that it is propagated at a greater velocity
and possibly has a stronger magnetic field because it causes disturbances
of greater activity.

19760336

1/2   021   UNCLASSIFIED   PROCESSING DATE---20NOV70
TITLE--RELATION BETWEEN NONLINEAR POLARIZABILITY TENSOR OF MOLECULES AND
   THE GREEN LAG FUNCTIONS OF THE APPLIED ELECTROMAGNETIC FIELD -U-
AUTHOR-(03)-SOKOV, O.G., SHEKHTER, L.SH., YUDOVICH, M.V.

COUNTRY OF INFO--USSR

SOURCE--OPT. SPEKTROSK. 1970, 28(2), 228-31

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--TENSOR, TENSOR ANALYSIS, NONLINEAR EFFECT, MAGNETIC
   POLARIZATION, MOLECULE, GREEN FUNCTION, ELECTROMAGNETIC FIELD,
   MATHEMATIC EXPRESSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1782   STEP NO--UR/0051/70/028/002/0028/0231

CIRC ACCESSION NO--AP0112768
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0112768
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POSSIBILITY IS INVESTIGATED OF
  APPLYING THE DZYALOSHINSKII AND PITAEVSKII (1959) METHOD FOR CALG. MOL.
  POLARIZABILITY TENSORS.   EXPRESSIONS ARE DERIVED FOR THE TENSORS OF
  LINEAR AND NONFUNCTIONS OF THE APPLIED ELECTROMAGNETIC FIELD.

UNCLASSIFIED

Hydraulic and Pneumatic

USSR

YUDOVICH, V. I., Rostov-na-Donu

"Occurrence of Autooscillations in a Liquid"

Moscow, Prikladnaya Matematika i Mekhanika, Vol 35, No 4, 1971, pp 638-655

Abstract: A study was made of the occurrence of autooscillations on transition of the Reynolds number (or another parameter determining the stationary move- ment of the viscous incompressible liquid) through the critical value. The method of Lyapunov-Shmidt [Vaynberg, et al., Teoriya vetvleniya resheniy nelineynykh uravneniy, Moscow, Nauka Press, 1969; Krasnosel'skiy, et al., Priblizhennoye resheniye operatornykh uravneniy, Moscow, Nauka Press, 1969] was used in the study.

The a priori estimate of the frequencies of possible autooscillatory conditions is established, and it is proved that the branch point of the cycle can only be the critical value of the parameter. Additional conditions under which the cycle actually occurs are discovered. A theorem which is an analog of the Krasnosel'skiy theorem on bifurcation points [Krasnosel'skiy, Topolo- gicheskiye metody v teorii nelineynykh integral'nykh uravneniy, Moscow, Gostekh- izdat Press, 1956] is proved. Under the conditions of this theorem the

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USSR

existence of autooscillatory periodic motion is established on the basis of analyzing certain linearized equations independently of the form of the non-linear terms. A second theorem is proved resulting in a more detailed study of the cycles, their numbers and analytical properties as functions of the parameter under consideration. The proofs of the two theorems are based on the most general properties of the Navier-Stokes equations, and they are easily generalized to a broad class of ordinary differential equations in a Banach space containing various problems for equations of the parabolic type, the equations of convection, magnetohydrodynamics, and so on.

2/2

USSR

MARKMAN, G. S., YUDOVICH, V. I.

"Conditions of Instability of Purely Rotary Periodic Flows of an Ideal Fluid"

Mat. Analiz i ego Pril. T. 3. [Mathematical Analysis and its Applications, Vol 3 -- Collection of Works], Rostov-na-Donu, Rostov University Press, 1971, pp 59-69, (Translated from Referativnyy Zhurnal, Mekhanika, No 10, 1972, Abstract No 10 B524, by V. Kh. Izakson).

Translation: Purely rotary flows of an ideal incompressible fluid between rotating cylinders are studied:

$$\vartheta = \{0, \vartheta_\tau(r, t), 0\}, \ \vartheta_\tau(r, t) = \int_0^t F(r, \tau)d\tau + \varphi(r)$$

$F(r, \tau)$ is a T-periodic function of τ, satisfying the condition

$\int_0^T F(r, \tau)d\tau = 0$. $\varphi(r) \rightarrow$ is an arbitrary function of r. The method of small oscillations is used to establish that for instability of these flows, it is sufficient that the conditions

1/2

USSR

MARKMAN, G. S., YUDOVICH, V. I., Mat. Analiz i ego Pril. T. 3., Rostov-na-
Donu, Rostov University Press, 1971, pp 59-69.

be satisfied, where r_1, r_2 are the radii of the cylinders.

2/2

1/2   036   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--THERMODYNAMIC AND SPECTRAL PROPERTIES OF P-NITROPHENOL IN AQUEOUS
   ELECTROLYTE SOLUTIONS -U-
AUTHOR-(04)-NIKOLSKIY, B.P., YUDOVICH, YE.YE., PALCHEYSKIY, V.V., SPEVAK,
   V.N.
COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(3), 709-11

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--THERMODYNAMIC CHARACTERISTIC, SPECTRUM, PHENOL, ORGANIC NITRO
   COMPOUND, ELECTROLYTE, ENTHALPY, ENTROPY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0723   STEP NO--UR/0076/70/044/003/0709/0711

CIRC ACCESSION NO--AP0119630
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0119630
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PARTIAL ENTHALPY AND ENTROPY OF
  DISSOLN. OF P-O SUB_2 NC SUB_6 H SUB_4 OH DECREASED WITH INCREASING CONCN.
  OF ELECTROLYTE. THE DECREASE OF THE ENDOTHERMIC CONTRIBUTION TO DELTAH
  DEPENDED ON THE ELECTROLYTE, KBR GREATER THAN KCL GREATER THAN NACL
  GREATER THAN LICL.   THUS, THE DECREASE WAS LARGER THE LESS HYDRATED THE
  IONS OF THE ELECTROLYTES. THE ENERGY OF THE 1ST ELECTRONIC TRANSITION
  DECREASED WITH INCREASING CONCN. OF ELECTROLYTE AND THE EFFECT OF
  CREASED WITH INCREASING CONCN. OF ELECTROLYTE AND THE EFFECT OF
  ELECTROLYTES ON THE ENERGY VARIED IN THE ABOVE ORDER.   FACILITY:
  LENINGRAD. GOS. UNIV. IM. ZHDANOVA, LENINGRAD, USSR.

UNCLASSIFIED

USSR   UDC: 517.9:539.3

MOROZOV, N. F., YUDOVIN, M. E.

"On the Nature of Convergence of Bubnov-Galerkin Approximations in the Problem of Vibration of a Nonlinear Cylindrical Surface"

Tr. Leningr. tekhnol. in-ta tsellyulozno-bum. prom-sti (Works of the Leningrad Technological Institute of the Cellulose and Paper Industry), 1970, vyp. 25, pp 219-222 (from RZh-Matematika, No 5, May 71, Abstract No 5B519)

Translation: The authors study convergence of a sequence of Bubnov-Galerkin approximations to the unique generalized solution $u(x,t) \in W_2^{2,1} \begin{bmatrix} 0 \leqslant x \leqslant \pi \\ 0 < t < T \end{bmatrix}$ of the indicated problem which satisfies the identity

$$\int_0^T \int_0^\pi [-u_t \Phi_t + u_{xx} \Phi_{xx} - [\Phi - K(u)\Phi] \, dx \, dt = 0,$$

where $K(u) = e^{\ast} \int_0^\pi u_x \, dx \cdot u_{xx}$ and $\Phi(x,t)$ is a smooth function which vanishes on $t \in [T - \delta; T], \delta > 0$.

1/2   It is shown that the Bubnov-Galerkin approximations $u^{(n)} = \sum_{i=1}^n u_i^{(n)}(t) z_i(x),$

MOROZOV, N. F., YUDOVIN, M. E., Tr. Leningr. tekhnol. in-ta tsellyulozno-bum. prom-sti, 1970, vyp. 25, pp 219-222

where $v_i(x)$ are eigenfunctions of the operator $\frac{d^4}{dx^4}$ in $L_2[0,\pi]$, and $u_i^{(n)} = \int_0^\pi u v_i(x)\,dx$ converge to the solution $u(x,t)$ with respect to the norm in space $W_2^{2,1}$ $[0 \leqslant x \leqslant \pi,$ $0 < t < T]$. This implies convergence of $u^{(n)}(x,t)$ to $u(x,t)$ with respect to the cross sections $t = $ const in the norm $W_2^2 [0 \leqslant x \leqslant \pi]$.   V. Belov.

2/2

- 8 -

USSR

LEBEDEVA, K. V., and YUDOVSKAYA, T. K.

"Juvenile Hormone Analogues and the Possibilities of Their Utilization in Plant Protection

Abstract: A review with 113 references covering the compounds with pronounced juvenile hormone activity of the insects. The active compounds are subdivided in seven structural groups; biological activities of each group are reported. Some structure-activity generalizations have been made: the chain length in acyclic terpenoids should be at least 13-16 carbon atoms long; when an aromatic ring is present, the side chain should contain at least 8 carbon atoms. Changes at the terminal carbon atoms of the molecules have the most pronounced effect on the activity; as a rule the 2,3-double bond present in these compounds should be trans-oriented.

1/1

- 20 -

UDC 632.951+612.018

USSR

LEBEDEVA, K. V., and YUDOVSKAYA, T. K., All-Union Scientific Research Institute of Chemical Means for Plant Protection

"The Search for Insecticides With Juvenile Hormone Activity"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 9, No 5, 1971, pp 31-33

Abstract: Information given in the non-USSR literature on the constitution, mode of action, and synthesis of compounds with juvenile hormone activity is reviewed from the standpoint of prospects of application of these compounds in the control of insect pests (62 references)

1/1

Devices

USSR

UDC 621.327.534.15.032.43(088.8)

MANSUROV, A.KH., OSKOLKOV, I.N., SAZHIN, L.I., TROFIMOV, V.V., YUDOVSKIY, B.Z.
[Vses. n.-i. kinofotoin-t--All-Union Scientific-Research Camera Institute]

"Device For Ignition Of Xenon Lamps"

USSR Author's Certificate No 311430, filed 13 Apr 70, published 6 Oct 71 (from RZh:Elektrotekhnika i energetika, No 5, May 1972, Abstract No 5V190P)

Translation: A device is proposed for ignition of xenon lamps, which contains a rectifier made with a thyristor, with a control circuit consisting of a RC network [tsepochka] with a switching diode. The rectifier is supplied from a supplementary winding of the power transformer of the rectifier. In order to accomplish control of the process of ignition of the lamps, an increase of their lifetime, and a decrease of the overall size of the device, the rectifier is connected in series with a supplementary winding of the transformer in the ignition circuit [tsep'] of the xenon lamp. For supply of the control circuit an auxiliary rectifier is used, connected to the power transformer, at the output of which the RC network is connected. 1 ill. Ye.I. Afanasyeva.

1/1

YEZHOV, I. I., YUDYTS'KYY, Ya, A.

"Concerning the Constructive Synthesis of a Markov Trajectory"

Translation: The two-dimensional Markov sequence $\{\xi_n \, \tau_n\}$ is considered in which the first component assumes no more than a denumerable set of values, while the second increases. A random process is constructed whose values are equal to ξ_n between the times τ_n and τ_{n+1}. Conditions are indicated which it is necessary and sufficient to impose on the transitional probabilities of a two-dimensional Markov sequence in order that the process synthesized in accordance with this sequence be a stochastically continuous Markov chain.

1/1

UDC 621.397

USSR

YUDZON, O. I.

"Use of Superorthicons for Transmitting Images of Rotating Objects"

Translation: This article contains an investigation of the basic characteristic features of operation of superorthicons in TV stroboscope equipment. Recommendations are made with respect to selecting the superorthicon which is most suitable for operation in this equipment.

1/1

USSR   UDC: 8.74

BRYABIN, V. M., YUFA, V. M.

"Design of Syntax Analyzers for Conversational Systems"

Translation: A method of describing the grammar of a natural language
is considered as well as a scheme for converting the grammar into a
syntax analyzer for a specific computer. The formal syntax and semantics
of the metalanguage are presented. An intermediate language is proposed
which describes the flowchart of the translator for the conversational
system. The metadescription is transformed to the translator body for
the specific computer in two stages by special programs in LISP language
with the use of macro-operators in the assembler language.

1/1

YuF ARKIN   V. Ya.

3

Acc. Nr.: AP0042566   Ref. Code: URO293

Gamma Quanta with Energy Greater than 50 MeV in Cosmic Radiation

(Abstract: "Measurements of Fluxes of Gamma Quanta with Energies Greater
than 50 MeV in Primary Cosmic Radiation on the 'Kosmos-208' Artificial
Earth Satellite," by L. S. Bratolyubova-Tsulukidze, N. L. Grigorov, L. F.
Kalinkin, A. S. Melioranskiy, Ye. A. Pryakhin, I. A. Savenko and V. Ya.
Yufarkin; Moscow, Kosmicheskiye Issledovaniya, Vol VIII, No 1, 1970, pp
136-139)   The artificial earth satellite "Kosmos-208" carried a telescope of
Cerenkov counters with radiators of Plexiglas and lead glass, surrounded
by a scintillator for protection against the background of charged parti-
cles, for measuring the fluxes of cosmic γ-quanta with energies greater
than 50 MeV. There is a dependence between the counting rate of γ-quanta
and geographic latitude, probably related for the most part to imitations
of γ-radiation by charged particles. The article gives the values of the
total intensities of γ-quanta for the high and equatorial latitudes. The
latter data, interpreted as the upper limits of the fluxes of primary
γ-rays, are $(1.0{+}0.4)\cdot10^{-4}$, $(6{+}3)\cdot10^{-5}$ and $(1.0{+}1.0)\cdot10^{-5}$ $(cm^2 \cdot sec \cdot$
sterad$)^{-1}$ for $E\gamma \geqslant 50$, 90 and 146 MeV respectively. Within the limits
of error these results agree with the data obtained using the artificial
satellite OSO-III.

Reel/Frame   12   A
1976044

BREDIKHIN, M. Yu., IL'CHENKO, A. M., MASLOV, A. I., SKIBENKO, A. I., SKIBENKO, Ye. I., and YUFEROV, V. B.

"Investigating Conditions for the Formation of a Dense Plasma in Electron Beam Injection Into a Magnetic Trap"

Abstract: The continuation of an earlier article by the same authors (Ukrainian Physical Journal, 14, 1969, p 1167), this paper describes experimental work they performed to study the conditions of plasma formation with a density of $10^{14}-10^{15}$ cm^{-3} in a corkscrew-shaped magnetic trap into which an electron beam interacting with a neutral gas was injected. The experiments were performed with the VGL-2 equipment, in which the magnetic field is generated by two solenoids cooled with liquid nitrogen. Maximum magnetic field intensity is 21 kilogauss. A diagram of the VGL-2 together with details of the equipment's operation and the experimental method is given. Oscillograms showing the development of the beam-plasma discharge are reproduced, and curves of the growth time of plasma density as a function of electron beam current and the time rate of change of plasma density in the ionization of a neutral gas are plotted.

1/1

USSR   UDC 533.916

BREDIKHIN, M. Yu., IL'CHENKO, A. M., MASLOV, A. I., SKIBENKO, A. I.,
SKIBENKO, Ye. I., YUFEROV, V. B.

"Study of a Dense Plasma Formed by an Electron Beam in a Magnetic Trap"

Translation: An experimental study of the possibility of the formation of
a dense plasma in the interaction of a high-energy electron beam with a
neutral gas in a magnetic field of helical configuration is described.
The introduction of a neutral gas into the interaction region in the form
of a supersonic jet made it possible to produce the necessary pressure drop
without applying special differential pumping systems. Conditions for the
exponential rise in plasma density as a function of the parameters of the
beam-plasma discharge were determined. It was concluded on the basis of
the experiments that it is possible to form a plasma with a density of
$5-7 \cdot 10^{14}$ cm^{-3} with a supersonic jet of neutral gas.

1/1

YuFEROV, V.M.

FEATURES OF HEAT-RESISTANT STEEL RECRYSTALLIZATION

UDC 699.14.018.44:548.53

[Article by V. M. Yuferov and Ye. Ya. Leninskaya, All-Union Scientific Research and Design Engineering Institute of the Pipe Industry; Minsk, Izvestiya Akademii Nauk Belorusskoy SSR, Seriya Fiziko-Tekhnicheskikh Nauk, Russian, No 2, 1972, signed to the press 26 November 1971, pp 97-101]

The process of recrystallization of supersaturated solid solutions possesses features associated with the effect of second-phase particles on structural changes in metal during deformation as well as on nucleation centers of recrystallization and their subsequent growth /1, 2/. Recrystallization of deformed supersaturated solid solutions is accompanied by their decomposition associated with precipitation of a second phase /3/. Usually these dispersed precipitations shift the start of recrystallization into the region of higher temperatures /4/. However, not only the presence of the second phase but also the degree of its dispersity, tendency to coalescence, and dissolution in a specific temperature interval renders an effect on the kinetics of recrystallization /5/. In certain cases, growth of nuclei in the recrystallization of an alloy is not only not retarded, but, conversely, is significantly accelerated under conditions of coalescence and dissolution of the second phase in the specified temperature interval /6/. This phenomenon is characteristic for certain complexly alloyed steels with intermetallide strengthening which, in comparison with other high-alloy non-aging steels, manifest an increased tendency toward grain growth at a temperature above 1050-1150 C.

Investigation of this feature of recrystallization of a complexly alloyed steel was carried out in this work.

Pipes measuring 16x1 and 17x0.5 mm and made of steels 0Kh16N36B7RUR (EP150) and 0Kh20N45B (EP350) were used as the material.

- 1 -

[I - USSR - I]

Transformation and Structure

UDC 669.1.017.3:669.14.018.8

USSR

YUFEROV, V. M., and LEZINSKAYA, YE. YA

"Structural and Phase Transformations of Deformation Martensite in 1Kh15N9SZB Steel"

Kiev, Metallofizika, No 32, 1970, pp 82-85

Translation: An investigation was made of 1Kh15N9SZB (EP302) stainless steel. The substitution in this steel, as compared with steel 1Kh18N9B, of 3% chromium with the same amount of silicon leads to a considerable decrease in the stability of the steel austenite, whose martensite deformation point (M_d) reaches +150°C.

The cold rolling of 1Khk5N9SZB steel below the M_d point is accompained by the formation of deformation martensite, the amount of which reaches 70-80%. On heating the deformed steel over the 450-700° range the process of transformation of defor- mation martensite into austenite occurs, its speed during iso- thermal holding changing in time. The formation of austenite in the $\alpha \rightarrow \gamma$ transformation is accompanied by cold phase hard-

1/2

USSR

YUFEROV, V. M., and LEZINSKAYA, YE. YA., Metallofizika, No 32, 1970, pp 82-85

ening and it acquires a fragmented structure inherited from the deformation martensite.

2/2

- 73 -

UDC 699.14.018.44:548.53

USSR

YUFEROV, V.M., and LEZINSKAYA, Ye.Ya., All-Union Scientific Research,Design and Technological Institute of the Pipe Industry

"Peculiarities of the Recrystallization of Heat-Resisting Steel" Minsk, Izvestiya Akademii Nauk, BSSR, Seriya Fiziko-Tekhnicheskikh Nauk, No 2, 1972, pp 37-40

Abstract: The effect of the intermetallic phase on recrystallization processes of dispersion-hardening steel EP 150 (steel OKh16N36MBTYuR) was investigated under conditions of usual furnace heating, electrocontact heating, and induction heating. The heating temperature dependence of the tensile strength and the average conventional grain diameter of the EP 150 steel is shown in comparison with steel EP 350 (OKh20N45B). It was found that coagulation and dissolution of the Ni_3Ti-type intermetallic phase in the recrystallization process of the cold-deformed EP 150 steel contributes to a vigorous growth of grain and increasing graining difference in the 1050-1100°C temperature range. A more small-grained and homogeneous steel structure results by induction heating. To eliminate the different graining of the structure of cold-deformed heat-resisting and dispersion hardening steels, higher deformation degrees and increased heating rates of the metal by thermal treatment have to be applied. Two illustr., seven biblio. refs.

1/1

USSR   UDC 669.1.017.3:669.14.018.44:621.771.016.2

YUFEROV, V. M., and LITINSKIY, YU. D., All-Union Scientific Research Pipe
Institute (Dnepropetrovsk)

"Phase Transformations in Martensite-Ferrite Steels in the Process of Hot
Torsion Deformation"

Kiev, Metallofizika, No 39, 1972, pp 80-84

Abstract: The effect of hot torsion deformation on the structural and phase
transformations in heat-resistant martensite-ferrite steels, taking place
directly in the deformation site, was studied. Hot torsion of 8-mm-diameter
samples was accomplished at 750-1275°C every 25 and 50° with subsequent prompt
quenching. It was established that plastic deformation by torsion facilitates
the alpha-gamma transformation, which leads to a decreased amount of ferrite
and increased quantity of austenite in the steel in comparison with the equilib-
rium state at atmospheric pressure. The intensity of this effect is diminished
with increased twisting temperature. It was shown that two-phase steels are
found in the metastable state in the process of hot torsion as a result of phase
transformations taking place, the realization of which is determined by the
magnitude of shear and tangential stresses and no increased pressures in the
deformation site. 1 table, 2 figures, 16 bibliographic references.

1/1

79440m   Electron paramagnetic resonance study of free radical products of the reaction of ninhydrin with amino acids, peptides, and proteins. Yuferov, V. P.; Froncisz, Wojciech; Kharitonenkov, I. G.; Kalmanson, A. E. (Dep. Biophys., D. I. Ivanovskii Inst. Virol., Moscow, USSR). Biochim. Biophys. Acta 1970, 200(1), 160-7 (Eng). EPR was used to study free radical products formed in the reaction of ninhydrin with amino acids and peptides. The EPR spectra of free radicals were characteristic of various amino acids and N-terminal amino acids of peptides. The anals. of these spectra showed that their hyperfine structure was produced by interaction of the unpaired electron with one N nucleus and protons which were a part of structure of the free radical products. The yield of free radicals depended on pH of the medium and on the amt. of H_2O and O in the reaction mixt. Specificity of spectra permits use of EPR to identify amino acids and N-terminal amino acids in peptides.
RCCP

ACS

1/1

2

TITLE--CONSTRUCTION OF A GAS LIQUID CHROMATOGRAPH FOR ANALYZING LOW
STABILITY AND DIFFICULTLY 3OLATILIZABLE COMPOUNDS -U-

AUTHOR--RUDENKO, B.A., KUCHEROV, V.F., YUFIT, S..S

COUNTRY OF INFO--USSR

SOURCE--ZAVOD. LAB. 1970, 36(1), 109-11

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--GAS CHROMATOGRAPHY, ACETAL, ACETYLENE HYDROCARBON, CHEMICAL
LABORATORY APPARATUS, ESTER, CHEMICAL STABILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0240   STEP NO--UR/0032/70/036/001/0109/0111

CIRC ACCESSION NO--AP0106896
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0106896
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A GAS LIQ. CHROMATOGRAPH,
CONSTRUCTED FOR THE ANAL. OF LOW STABILITY AND HIGH,B.P. COMPDS. SUCH AS
ACETALS, ORTHOESTERS, POLYALKOXY, POLYENIC, AND POLYACETYLENIC COMPDS.,
IS DESCRIBED. THE VAPORIZER, THE COLUMN, AND THE COMMUNICATION SYSTEM
IS MADE OF GLASS. THE LENGTH OF THE COLUMN CAN BE VARIED FROM 20 TO 350
CM. THE APP. IS EQUIPPED WITH A FLAME IONIZATION DETECTOR MADE ALSO OF
GLASS WITH THE ELECTRODES MADE OF PT OR NI. THE DETECTOR SENSITIVITY
WAS 10 PRIME4 TO 10 PRIME5 MV ML-MG.

UNCLASSIFIED

Acc. Nr: AP0044594

Ref. Code: UR0497

PRIMARY SOURCE: Klinicheskaya Meditsina, 1970, Vol 48,
Nr 1 , pp 21-26

BLOOD STREPTASE IN THE DIAGNOSIS OF RHEUMOCARDITIS
IN PATIENTS SUFFERING FROM CARDIAC FAILURE
AT REMOTE POSTOPERATIVE PERIODS

I. S. Golubev, S.Ye. Yufit, A. V. Plyashina

Summary

The authors describe the clinico-laboratory signs of rheumocarditis in 34 patients with rheumatic cardiac diseases at remote periods after the operation. By means of clinico-laboratory confrontations the authors stress the importance of the new test in the diagnosis of rheumocarditis. The authors are of the opinion that the streptase titer is a valuable auxiliary diagnostic test in the complex investigation of patients with active rheumocarditis, especially in its torpid course. One could assess the effectiveness of treatment by changes of the streptase titer in patients suffering from active rheumocarditis.

REEL/FRAME
19771270

1/2   011   UNCLASSIFIED   PROCESSING DATE--20NOV70
TITLE--MECHANISM OF METAL ION ADSORPTION ON CARBOXYLIC CATION EXCHANGERS.
VI. ADSORPTION OF COPPER AND NICKEL IONS ON SG,1 RESINS -U-
AUTHOR-(04)-YURYAKOVA, N.K., NAZAROV, P.P., CHUVELEVA, E.A., CHMUTOV,
K.V.
COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(3), 720-3

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CATION EXCHANGE RESIN, ADSORPTION, COPPER COMPLEX, NICKEL
COMPLEX, CARBONYL RADICAL, STABILITY CONSTANT/(U)SG1 ION EXCHANGE RESIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1211   STEP NO--UR/0076/70/044/003/0720/0723

CIRC ACCESSION NO--AP0128629
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0128629   UNCLASSIFIED   PROCESSING DATE--20NOV70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INTERACTION OF 0.019 AND
0.038M CU(NO SUB3) SUB2 AND 0.0196M NI (CLO SUB4) SUB2 WITH THE CATION
EXCHANGER SG,1 (PK SUBDISSOCN. 5.4 AND 5.52 IN NANO SUB3 AND NACLO SUB4
SOLNS., RESP.) WAS STUDIED BY MEASURING THE PH OF THE SG,1 SUSPENSION
AND EXTENT OF CU PRIME2 POSITIVE AND NI PRIME2 POSITIVE ADSORPTION AFTER
THE ADDN. OF VARIOUS AMTS. OF ALKALI. BOTH OF CU PRIME2 POSITIVE NI
PRIME2 POSITIVE FORM A COMPLEX WITH 2 CARBOXYL GROUPS. CU IS MORE
FIRMLY COMPLEXED, WITH A STABILITY CONST. K SUB2 TIMES 10 PRIME
NEGATIVE5 EQUALS 0.93 AND 1.2 FOR THE CONCNS. 19 AND 38 MM-1., RESP.,
WHILE NI HAS K SUB2 EQUAL 0.013 TIMES 10 PRIME5 AT THE STUDIED CONCN.
    FACILITY: INST. FIZ. KHIM., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 621.762:669.018.95

NAZARENKO, N. D., YUGA, A. I., VLASKO, N. I., TRESVYATSKIY, S. G.,
KOLESNICHENKO, L. F., Institute of Problems of Material Sciences, Academy of
Sciences UkrSSR

"Influence of Metal Fillers on Friction Properties of Sital 3"

Kiev, Poroshkovaya Metallurgiya, No 7, Jul 73, pp 51-54.

Abstract: An earlier work showed that the material called Sital 3, consisting
of the oxides SiO_2, Al_2O_3, TiO_2, B_2O_3, MgO and fluorides, can be used for the
manufacture of parts for friction couples. The authors believe that intro-
duction of metal fillers, causing intensive heat transfer from the contact
zone into the depth of the material and formation of separating films on the
surface of the material, could significantly improve the efficiency of Sital 3.
Studies were performed in which from 10 to 90 wt. % metal powder was intro-
duced to the material. The curve of coefficient of friction as a function of
percent content of copper filler shows a minimum at 30-40%. The introduction
of about 30% copper powder allows the material to be used for vacuum opera-
tion, which is impossible with pure Sital.

1/1

- 35 -

USSR

UDC 531.44:669.35

BELOBORODOV, I. I., KOLESNICHENKO, L. F., NENAKHOV, A. V., and YUGA, A. I., Institute of Problems of the Materi... Science of the Academy of Sciences UkrSSR

"Investigation of Antifriction Properties of Bronze-Base Materials"

Abstract: The technology of the production of bronze-base metalloplastic antifriction materials with a high content of solid lubricant is described. The antifriction properties were studied on specimens with a highly porous (50%) bronze shell, produced from Cu (90%) and Sn(10%) powders and impregnated with a mix of fluoroplast-4 with 30% graphite. The results of investigations carried out in air at a sliding rate of 6 m/sec and loads of up to 60 kg/cm^2 show that materials with 50% porosity based on non-spherical powders possess a high fatigue life independent of the presence of a solid lubricant surface layer. The antifriction properties of materials with 30% porosity based on spherical powders do not deteriorate when the surface layer is eliminated. Metalloplastic materials based on non-spherical powders with a higher content of solid lubricant are recommended for working under conditions of friction without lubrication. Four figures, one table, five bibliographic references.
1/1

Acc. Nr.: _AP0046764_

USSR

UDC 621.791.927:669.35.6

ILYUSHENKO, V. M., SEDOV, V. YE., MAMYKIN, E. T., YUGA, A. I.

"Antifriction Properties and Wear Resistance of Hard-Faced Tin-Lead Bronze"

Kiev, Avtomaticheskaya Svarka (Automatic Welding), No 1, 1970, pp 28-31 (from Avtomaticheskaya Svarka, No 1, 1970, p 79)

Translation: This article contains a study of the wear resistance and coefficient of friction of hard-faced tin-lead bronze. The optimal composition of the antifriction alloy for manufacturing bimetal highly loaded bearings is selected. There is 1 table, 5 illustrations and a 5-entry bibliography.

Reel/Frame
19790068

Physiology

UDC 523:612.015.3:611.85

USSR

LAPAYEV, E. V., PAVLOV, G. I., SIDEL'NIKOV, I. A., UDALOV, Yu. F., YUGANOV, Ye. M., and CHELNOKOVA, N. A.

"The Effect of Linear and Angular Accelerations on Some Metabolic Indices"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 4, 1970, pp 515-520

Abstract: Exposure of human subjects to linear and angular accelerations produced definite shifts in protein and vitamin metabolism. Some of the shifts were quite specific to vestibular stimulation — decrease in transaminase activity, increased excretion of amino acids with decreased excretion of total nitrogen, and relative increase in content of the replaceable acids and amino acids involved in transamination reactions in the blood (aspartic and glutamic acids, glutamine, alanine). The shifts were more pronounced after Coriolis accelerations than after linear accelerations.

1/1

1/2   039   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--PROBLEM OF NORMALIZING HIGH INTENSITY NOISES --U-

AUTHOR-(03)-YUGANOV, YE.M., KRYLOV, YU.V., KUZNETSOV, V.S.

COUNTRY OF INFO--USSR

SOURCE--KOSMICHESKAIA BIOLOGIIA I MEDITSINA, VOL. 4, JAN.-FEB. 1970, P.
38-41
DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--WHITE NOISE, AUDITION, BLOOD PRESSURE, SPACE FLIGHT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/0288   STEP NO--UR/0453/70/004/000/0038/0041

CIRC ACCESSION NO--AP0120977
------------------------------UNCLASSIFIED------------------------------

CIRC ACCESSION NO--AP0120977
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE EFFECTS OF 500 HZ
   114-116 AND 125-126 DB NOISE ON THE AUDITORY THRESHOLDS, BLOOD PRESSURE
   AND THE TIME OF RESPONSE TO LIGHT STIMULI IN A GROUP OF 64 MALE
   SUBJECTS, COVERING A TOTAL OF 152 TESTS. UNFAVORABLE EFFECTS OF 125-126
   DB NOISE ON THE CARDIOVASCULAR SYSTEM AND AUDITORY AND VISUAL ANALYSORS
   ARE ESTABLISHED. NOISE LEVELS OF 114-116 DB ARE ACCEPTED AS PERMISSIBLE
   DURING THE ACTIVE PHASES OF SPACE FLIGHTS.

UNCLASSIFIED

2.

USSR   UDC 613 693 (02)

ISAKOV, P. K., IVANOV, D. I., POPOV, I. G., RUDNYY, N. M., SAKSONOV, P. P.,
and YUGANOV, Ye. M.

Teoriya i Praktika Aviatsionnoy Meditsiny (The Theory and Practice of
Aviation Medicine), Moscow, "Meditsina," 1971, 396 pp.

Translation: Annotation: This monograph elucidates theoretical and practical
questions of aviation medicine. It presents brief information on the physio-
logy, hygiene, pharmacology, toxicology, radiology, internal medicine, surgery,
psychology, and other disciplines which make up the theoretical basis of
aviation medicine. Questions of the medical flight examination for flight
personnel, medical checks on flight safety, evacuating sick and wounded
persons by air, and medical support for various types of aviation are con-
sidered.

The book is intended for aviation doctors and students at academies and
aviation institutes and faculties.

Preface

The development of aviation medicine began with the introduction of aircraft
into practical use. At the present time, representatives of practically all
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ISAKOV, P. K., et al., Teoriya i Praktika Aviatsionnoy Medi siny (The Theory and Practice of Aviation Medicine), Moscow, "Meditsina," 1971, 396 pp.

medical specialization devote attention to questions of aviation medicine. Furthermore, biologists and psychologists participate extensively in developing the scientific propositions which are used in aviation medicine.

In comparison with other occupations, flying activity involves a very high degree of action by various extreme factors on the organism. Even a slight emergency, similar to one which on the ground could be eliminated without danger to the crew, may end in disaster in the air if a set of special measures is not envisioned. For this purpose, aviation doctors participate in evaluating each new type of airplane, beginning with its design and ending with flight testing, and they conduct medical and psychological selection of candidates for flight schools. All activity by flight personnel is under constant observation by aviation doctors who regulate the flying load and participate in evaluating the pilot's readiness to perform the flight assignment.

In this book the first attempt is made to show, along with a presentation of the theoretical aspects of aviation medicine, the possibilities for applying this knowledge in the aviation doctor's practice.

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ISAKOV, P. K., et al., Teoriya i Praktika Aviatsionnoy Meditsiny (The Theory and Practice of Aviation Medicine), Moscow, "Meditsina," 1971, 396 pp

The authors made no attempt to present all questions of aviation medicine without exception. In order to carry out such an attempt at the present time, a multi-volume publication would be needed. This refers particularly to the clinical aspects of aviation medicine. The specific etiological condition for the development and course of deviations in health caused by flight factors, analyzing the possibility of performing flights after suffering diseases, and the system and methods for medical monitoring of the state of health of flight personnel are all clinical aspects of aviation medicine which are elucidated in appropriate publications and, naturally, are treated in a limited manner here.

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ISAKOV, P. K., et al., Teoriya i Praktika Aviatsionnoy Meditsiny (The Theory and Practice of Aviation Medicine), Moscow, "Meditsina," 1971, 396 pp.

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ISAKOV, P. K., et. al., Teoriya i Praktika Aviatsionnoy Meditsiny (The Theory and Practice of Aviation Medicine), Moscow, "Meditsina," 1971, 396 pp.

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ISAKOV, P. K., et al., Teoriya i Praktika Aviatsionnoy Meditsinay (The Theory and Practice of Aviation Medicine), Moscow, "Meditsina," 1971, 396 pp.

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USSR

ISAKOV, P. K., et al., Teoriya i Praktika Aviatsionnoy Meditsiny (The Theory
and Practice of Aviation Medicine), Moscow, "Meditsina," 1971, 396 pp.

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USSR

ISAKOV, P. .K., et al., Teoriya i Praktika Aviatsionnoy Meditsiny (The Theory
and Practice of Aviation Medicine), Moscow, "Meditsina," 1971, 396 pp.

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ISAKOV, P. K., et al., Teoriya i Praktika Aviatsionnoy Meditsiny (The Theory and Practice of Aviation Medicine), Moscow, "Meditsina," 1971, 396 pp.

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USSR

ISAKOV, P. K., et al., Teoriya i Praktika Aviatsionnoy Meditsiny (The Theory and Practice of Aviation Medicine), Moscow, "Meditsina," 1971, 396 pp.

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ISAKOV, P. K., et al., Teoriya i Praktika Aviatsionnoy Meditsiny (The Theory and Practice of Aviation Medicine), Moscow, "Meditsina," 1971, 396 pp.

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UNCLASSIFIED   PROCESSING DATE--02OCT70

TITLE--KINETICS OF THE GROWTH OF GAMMA PHASE PARTICLES IN NICKEL,
CHROMIUM, TUNGSTEN AND MOLYBDENUM ALLOYS WITH VARIOUS ALUMINUM TITANIUM

AUTHOR-(02)-SOROKINA, YU.G, YUGANOVA, S.A.

COUNTRY OF INFO--USSR

SOURCE--METALLOVED. TERM. OBRAB. METAL. 1970, (3), 8-12

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--GRAIN GROWTH, ALLOY PHASE TRANSFORMATION, ALLOY COMPOSITION,
METAL AGING, NICKEL BASE ALLOY, METAL DIFFUSION, TUNGSTEN CONTAINING
ALLOY, MOLYBDEUM CONTAINING ALLOY, HARDNESS, PARTICLE SIZE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/1937   STEP NO--UR/0129/70/000/003/0008/0012

CIRC ACCESSION NO--AP0108266
                        UNCLASSIFIED

2/2   031
CIRC ACCESSION NO--AP0108266
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE GROWTH OF THE LINEAR
DIMENSIONS OF GAMMA PRIME PHASE PARTICLES DURING AGING OF ALLOYS OF NI
BASE AND CONTG. W AND MO IS DESCRIBED BY THE SAME EQUATIONS AS THE
GROWTH IN ALLOYS WITHOUT THESE ELEMENTS. THE INTRODUCTION OF W AND MO
INCREASES THE NO. OF GAMMA PRIME PHASE PARTICLES ON THE SURFACE AND
SLOWS DOWN THE GROWTH RATE. A SIMILAR EFFECT IS OBSD. WHEN ALLOYING
WITH TI. THIS EFFECT IS ASSOCD. WITH THE DIFFUSIONAL MOBILITY OF THE
INTRODUCED ELEMENTS AND WITH THE DEGREE AND SIGN OF THE DEFECTS ON THE
GAMMA PHASE, GAMMA PRIME PHASE BOUNDARY. AT EQUAL AGING TIMES THE NO.
OF GAMMA PRIME PHASE PARTICLES DECREASES WITH THE INCREASE OF THE AL-TI
RATIO.   AN INCREASE IN THE HARDNESS OF THE ALLOYS DURING AGING AT
750DEGREES IS OBSD. WHEN THE GAMMA PRIME PHASE PARTICLES ARE SMALLER
THAN 2 TIMES 10 PRIME NEGATIVE6 CM AND THEIR NO. IS SMALLER THAN 10
PRIME9-CM PRIME2.

USSR

SOROKINA, YU. G., and YUGANOVA, S. A. and TSNIITMASH, S. A.

UDC 669.14.018.44:620.18

"Kinetics of γ-Phase Particle Growth in Ni-Cr-W-Mo Alloys with Different Al/Ti Ratios"

Moscow, Metallovedeniye i termicheskaya obrabotka metallov, No 3, 1970, pp 8-12

Abstract: The kinetics of the formation and growth of γ-phase particles in Ni-Cr-Al-Ti-W-Mo alloys was investigated and the results compared with available data on similar alloys not containing W and Mo. Tests were conducted on three nickel-based cast alloys with the same chrome, tungsten, and molybdenum content and different aluminum and titanium content. The chemical composition of the alloys is given in a table. The experimental technique and procedure are described. The size, shape, and quantity of phase particles were evaluated by the electron microscope method. The linear dimensions and quantity of phase particles were measured after alloy aging at 750°C with intervals of 100, 1000, and 5000 hours. The growth of γ-phase particle size during the aging process of nickel-based alloys containg W and Mo is described by the same equation which describes the growth in alloys without these elements. The addition of W and Mo increases the quantity of γ-phase particles on the surface unit and decreases their growth rate. At the same duration of aging the quantity of γ-phase particle decreases 1/2

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SOROKINA, YU. G. and YUGANOVA, S. A., Metallovedeniye i termicheskaya obrabotka
metallov, No 3, 1970, pp 8-12

with increasing Al/Ti ratio. An increase in hardness in the aging process at
750° C is observed when the γ-phase particle size does not exceed 2 x 10^{-6} cm
and their quantity on the surface unit is higher than 1 x 10^9. 4 figures, 4
tables, and 2 references.

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USSR

SIVERS, V. N., SHEMSHURA, V. Ye., and YUGAS, B. S.

UDC 621.375.82

"Determination of Density of Excited States in Three-Level Medium With Allowance for Multiple Light Scattering"

Translation: The authors consider the interaction of high-power monochromatic radiation with a three-level medium with equidistantly spaced energy levels. The medium is represented in the form of a one-dimensional array of scattering centers. With allowance for multiple light scattering in the medium, expressions are obtained which define the densities of scattering centers in states with energies E_1, E_2, and E_3. Stimulated emission is taken into account in the solution. The problem is considered under steady-state conditions. The density values of scattering centers make possible calculation of light conditions at any point in the medium. The results obtained are illustrated graphically.
1/1

USSR   UDC 551.508.25.08

YUGAY, M. A.

"A Triple Balance Meter and Its Constant Values"

Trudy Kazakhskogo Politekhnicheskogo Instituta (Works of the
Kazakh Polytechnical Institute), No 31, 1970, pp 44-46 (from
Referativnyy Zhurnal, Metrologiya i Izmeritel'naya Tekhnika,
No 12, 1970, Abstract No 12.32.603 by V. S. K.)

Translation: A description is given of a triple balance meter
developed at the Department of Physics of the Kazakh Polytechnical
Institute for the Absolute Measurement of Radiation Intensity.
The compensation-type balance meter constitutes a brass disk
100 mm in diameter and 10 mm thick, upon which are placed three
balance meters which have independent leads for connection with
measurement equipment. The space between the receiving surfaces
of the balance meters is filled with a metal lining; this increases
the stability of the instrument readings. The results of deter-
mination of the physical and geometrical characteristics of the
described balance meter are presented. The heat lag of the
instrument was found equal to 6-8 seconds.
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ZHUK, N. S., NI, A. S., MIROSHNICHENKO, N. I., KIM, V. YU., OVCHINNIKOV, N. A.,
and YUGAY, YU. A., Kazakh Institute of Epidemiology and Microbiology, Kara-
tal'sk Rayon Sanitary Epidemiological Station, and Taldy-Kurgansk Oblast'
Sanitary Epidemiological Station

"Control of Blood-Sucking Insects in the Paddies of the Karatal'sk Rayon
Rice-Growing System"

Abstract: Favorable conditions for the propagation of mosquitoes exist in the
rice paddies of Karatal'sk Rayon. Large amounts of larvae of Anopheles '
maculipennis, An. hyrcanus, and Culex modestus are present in the paddies.
Application of chlorophos in 0.5-0.8% solutions was effective in the control
of mosquito larvae. Extermination of the larvae to the extent of 100% was
obtained when these solutions were applied in amounts $\geq$ 100 l./ha. The solu-
tions were either sprayed from an aircraft or released into the paddies on
the ground level. The first method sometimes resulted in inadequate spraying
because of misses due to improper signaling while the second method had the
drawback that the solution did not spread in a sufficient concentration to
areas distant from the point of release. Organophosphorus compounds can be
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ZHUK, N. S., et al., Zdravookhraneniye Kazakhstana, Vol 30, No 5, May 71, pp 14-15

used on rice crops only before flowering of the plants. Sound agricultural methods including lack of inclines in the system of paddies, dense planting of rice, and drainage of water from the paddies, dense planting of rice, and drainage of water from the paddies also proved effective in the control of mosquitoes.

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USSR   UDC 615.477.24:616.12-089.28

SHUMAKOV, V. I., MOGILEVSKIY, E. B., KROL, A. D., ZUBAREV, V. A., SHIRKINA, T. V.,
and YUGIN, A. A.—Scientific Research Institute of Clinical and Experimental
Surgery, Moscow

"Model of an Artificial Heart for Intrapericardial Implantation"

Abstract: A model is presented of an implantable artificial heart which consists
of two mirror halves (right and left), each containing an artificial auricle and
an artifical ventricle. The median surfaces of the ventricles are flat so that
they may be easily connected after implantation. The overall dimensions of the
unit and the volume of its cavities depend upon the heart dimensions of the animal
for which the artificial heart is intended. Information is provided concerning
the design, development, and testing of the artificial heart unit. Stand tests
of implantable models developed by the authors and of control systems for them
have made it possible to determine their functional parameters and to select the
optimal operating conditions. It has been determined that the models can be used
for experiments with total substitution of the pump function of the natural heart.
Experiments on calves and dogs have been already initiated.

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"Determination of Optimal Fuselage Dimensions of a Supersonic Civil Airplane at Preliminary Design Stage"

Abstract: The problem of determining the optimal fuselage dimensions of a supersonic passenger airplane of a given passenger space volume is considered. The range at cruising speed, described by a formula, is taken as the evaluation criteria. The necessary weight and aerodynamic characteristics contained in the above mentioned formula for the plane range are presented in the form of geometrical function of the fuselage. The fuselage friction, wave and base drags whose sum forms the fuselage total drag, are determined at $Re_{crit} = 6.5 \times 10^6$. Then an expression for total drag coefficient, related to wing surface is derived. A finite equation for determining the range at cruising speed as a function of the fuselage geometrical dimensions is established. A numerical example of determining the rational fuselage dimensions of a super sonic airplane of 150 tons weight, designed for 120 passangers, at cruising speed corresponding to M ~ 2.2 is presented. The

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YUGOV, O. K., Izvestiya VUZ, Aviatsionnaya Tekhnika, No 4, 1970, pp 31-37

results presented in graphs show that an optimal value of the nose aspect
ratio exists for a plane designed for a specific passenger number and for a
given cruising speed. It is stated in the conclusions that the procedure
outlined here may be used for determining the fuselage parameters of other
type aircrafts, when the fuselage capacity is given. 18 formulas, 2 figures,
4 references.

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USSR

UDC:669.18:-147:621.746

POLYAKOV, V. V., SHORSHIN, V. N., NEKHAYEV, V. P., KVITKO, M. P., SINEL'NIKOV, V. A., FILATOV, Yu. V., YUGOV, P. I., and USTYUZHANIN, V. D.

"Study of Technology of Melting in an Oxygen Converter and Pouring of Type K-76 Rail Steel in a Continuous Casting Unit"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 123-132

Translation: Results are presented from a study of a new, progressive metallurgical process--the production of railroad rails of high-quality ingots produced by continuous casting in combination with melting of rail steel in an oxygen converter.
It is assumed that the process is promising for further increases in the strength of railroad rails and reduction of the expense of their production.
5 figures; 4 tables; 5 biblio. refs.

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USSR

UDC 669.184.144.66

YUGOV, P. I., UMNOV, V. D., and PLOKHIKH, V. A.

"Study of the Mechanism of Slag Formation in an Oxygen Converter"

Proizvodstvo Chernykh Metallov (Production of Ferrous Metals -- Collection of Works), No 75, Metallurgiya Press, 1970, pp 116-122

Translation: Studies are performed in a 130 T oxygen converter on the mechanism of slag formation during blowing of cast iron, %: 4.2 C, 0.97 Mn, 0.67 Si, 0.041 S, 0.056 P. The melts were cooled with Fe ore. The slag forming materials used were lime (CaO = 85-87%) and feldspar. Blowing was with oxygen of 98.6% purity at a feed rate of 2.8 $m^3/(min \cdot T)$. The principal technological factors determining the nature and rate of dissolution of lime in the slag are the intensity of oxidation of silicon and manganese at the beginning of blowing; the content of MnO and FeO in the primary slag; the relationship of MnO and SiO_2 in the slag; the use of complex materials (fluxed sinter, Fe-ore briquettes, Mn ore, return slag) containing prepared components of the primary slag; the distribution of the additives of slag forming materials during blowing, taking into account the nature of oxidation of elements in the cast iron; the quality and physical state of the lime used. 3 figures; 1 tables.

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UNCLASSIFIED
PROCESSING DATE--04DEC70
TITLE--DEPHOSPHORIZATION OF METAL WITH LOW CONCENTRACTIONS OF MANGANESE IN A CONVERTER BATH -U-
AUTHOR-(03)-YUGOV, P.I., AFANASYEV, S.G., KVITKO, M.P.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970, 13(4), 68-71

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--REFINING FURNACE, METAL OXYGEN CONVERSION, LIMESTONE, PIG IRON, STEEL PRODUCTION, PHOSPHOROUS, MANGANESE CONTAINING ALLOY, METALLURGIC SLAG, MANGANESE OXIDE, ALLOY COMPOSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0819

STEP NO--UR/0148/70/013/004/0068/0071

CIRC ACCESSION NO--AT0132909

UNCLASSIFIED

CIRC ACCESSION NO--AT0132909
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RESULTS ARE PRESENTED OF AN
  INVESTIGATION OF DEPHOSPHORIZATION CONDITIONS IN A 10 TON O CONVERTER
  DURING BLOWING OF LOW MN PIG IRON. LIMESTONE (85-90PERCENT CAO) WAS
  USED AS THE SLAG FORMING MATERIAL. A PROTION OF THE MELT WAS PREPD. BY
  THE USE OF MN ORE AND, FOR COMPARISON PURPOSES, ON BASIC PIG IRON CONTG.
  1.2PERCENT MN. FOR ALL 3 VARIANTS THE LARGEST AMT. OF MELT CORRES NDS
  TO THE MIN. P CONCNS. IN THE METAL (LESS THAN 0.020PERCENT), I.E., ALL 3
  VARIANTS PROVIDE FOR OPTIMUM CONDITIONS OF SUCCESSFUL DEPHOSPHORIZATION.
   THE FUNDAMENTAL TECH. FACTOR S ETG. THE DEGREE OF DEPHOSPHORIZATION
  DURING THE CONVERSION OF LOW MN PIG IRON ARE THE STATE OF OXION. AND THE
  BASICITY OF THE SLAG. DECREASING THE MN CONTENT IN THE METAL HELPS A
  HQVE LOWER P CONCNS. WITH INCREASED MNO CONCN. IN THE SLAG TO A GIVEN
  LIMIT THE DEPHOSPHORIZATION OF THE METAL OUGHT TO IMPROVE, WHEREUPON IT
  SHOULD AGAIN DETERIORATE. A REDN. OF P IN MELTS CONTG. MN ORE IS OBSD.
  AND AN ATTEMPT IS MADE TO EXPLAIN THIS PHENOMENON. A DECREASE IN THE
  SLAG QUANTITY PRESENT WORSENS THE DEPHOSPHORIZATION CONDITIONS, SINCE AT
  THE SAME DISTRIBUTION COEFF. THE AMT. OF P REMOVED INTO THE SLAG
  DECREASES. THE REMOVAL OF P IS ALSO INHIBITED WHEN MN IS BEING REDUCED
  DURING THE COURSE OF THE PROCESS.

UNCLASSIFIED

1/2   012   UNCLASSIFIED   PROCESSING DATE--11SEP70
TITLE--EFFECT OF TECHNOLOGICAL FACTORS ON THE QUALITY OF OXYGEN CONVERTER
   STEEL -U-
AUTHOR--AFANASYEV, S.G., YUGOV, P.I., DUKHANIN, A.S.

COUNTRY OF INFO--USSR

SOURCE--STAL' 1970, 30(1), 17-20

DATE PUBLISHED-------70

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

TOPIC TAGS--OXYGEN CONVERSION STEEL, OXYGEN, BIBLIOGRAPHY, METALLURGIC
   FURNACE, STEEL MANUFACTURE PROCESS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/0141   STEP NO--UR/0133/70/030/001/0017/0020

CIRC ACCESSION NO--AP0103820
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0103820
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INFLUENCE OF DIFFERENT FACTORS IS
REVIEWED BASED ON LITERATURE DATA WITH THE CONCLUSION THAT STEELS MADE
IN O BLOWN CONVERTS ARE SUPERIOR TO ANALOGOUS STEELS MADE IN OPEN
HEARTHS.

UNCLASSIFIED

USSR   UDC 553.677:543.422.4.001.5

KARRYYEV, N. A., YUGOV, V. A., SAMORUKOVA, L. M.

"Spectroscopic Investigation of Slag"

Dokl. Nauchno-tekhn. seminara Metrol. v radioelektron.(Transactions of the
Scientific and Technical Seminar Metrology in Radioelectronics), Tezisy,
Ch 1, Moscow, 1970, pp 143-148 (from RZh-Metrologiya i Izmeritel'naya
Tekhnika, No 8, Aug 70, Abstract No 8.32.642)

Translation: Results are presented of experimental investigations of the
transmission spectra in the infrared region of the crystalline films of
muscovite which are used as the backing in low inertia thin-film bolometers.
The observed interference phenomena cause a considerable discontinuity of the
slag spectrum. Since the reflectivity and the transmission of backing change
from region of spectrum to another, then the receiver will produce higher
response signal at the same wave length and smaller signal at others. Thus,
the radiation receiver will not satisfy the desired continuity of spectral
characteristics, a fact which should be taken into consideration during
designing of bolometers. 3 ill., 4 bibl. entries. V. S. K.
1/1

UDC: 621.373:530.145.6:621.317.17

USSR

YUGOV, V. A., VOROB'YEV, L. K., KUBAREV, A. V., POTAPOV, I. S.

"A Thin-Film Laser Emission Measurement Receiver"

Dokl. Nauchno-tekhn. seminara "Metrol. v radioelektron." Tezisy. Ch. 1 (Reports of the Scientific and Technical Seminar on Metrology in Radio Electronics. Summaries, Part 1), Moscow, 1970, pp 131-136 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7D244)

Translation: The authors give the design and technical characteristics of a thin-film receiver designed for precision measurements of low levels of the power of radiation flux from continuous-emission lasers. The indicator film is made from a semiconductor material with a high temperature coefficient of resistance such as germanium by the method of vaporization in a vacuum. The range of measurable emission powers is 10^{-2}–10^{-5} [W] in the wave band of 0.4–14 μ. The limiting sensitivity is 0.1 μW. A. K.

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Acc. Nr.   Abstracting Service: Ref. Code
AP0048457   CHEMICAL ABST. 5/70   4R0449

105526r Behavior of copper during diffusion into gallium arsenide studied on the basis of bound exciton spectra. Safarov, V. I.; Sedov, V. E.; Yugova, T. G. (Fiz.-Tekh. Inst. im. Ioffe, Leningrad, USSR). Fiz. Tekh. Poluprov. 1970, 4(1), 150-6 (Russ). The previously obsd. bound-exciton spectra (Gross, E. F.; S., V. I., 1967; G., et al., 1969) of Cu-doped crystals of GaAs were investigated. The photoluminescence spectra at different depths of the crystal permitted the observation of the diffusion of the different Cu-impurity centers. The characteristic diffusion front of Cu in GaAs is detd. by the different soly. and diffusion coeffs. of the impurity centers. A retardation of the diffusion of one of the centers was obsd. when the As pressure in the ampul was increased. The following models of the centers are proposed: $[V_{As}Cu_{Ga}V_{As}]$ and $[Cu_{Ga}V_{As}]$, where Cu_{Ga} is the Cu atom in a Ga vertex and V_{As} is an As vacancy. A shallow 0.023-eV level was obsd., ascribed to a lattice defect. The variation of the spectra with low-temp. annealing (450°) was also investigated.   Alexandre Fucs

REEL/FRAME
19800165

18 rd

TITLE--ON THE EXISTENCE OF A WAVE FUNCTION FOR A SUBSYSTEM -U-

AUTHOR--YUKALOV, V.I.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK MOSKOVSKOGO UNIV. FIZ. ASTRON. USSR, VOL. 11, NO. 1, P.
68-73 1970
DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--WAVE FUNCTION, PARTICLE DISTRIBUTION, SPECIFIC DENSITY, MATRIX
FUNCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/1326   STEP NO--UR/0188/70/011/001/0068/0073

CIRC ACCESSION NO--AP0109410
UNCLASSIFIED

CIRC ACCESSION NO--AP0109410
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONSIDERS THE EXISTENCE OF THE
  WAVE FUNCTION FOR A SUBSYSTEM CONTAINED IN AN ASSEMBLY OF N SUBSYSTEMS.
  IT IS SHOWN THAT EVEN IF THE SUBSYSTEMS DO NOT INTERACT, NONE OF THEM
  CAN HAVE A WAVE FUNCTION IN THE ORDINARY SENSE. A GENERALISED CONCEPT
  OF WAVE FUNCTIONS IS INTRODUCED WHICH PERMITS A SEPARATE DESCRIPTION OF
  A SUBSYSTEM OF A GIVEN ASSEMBLY AND THE RELATION OF SUCH FUNCTIONS TO
  THE GENEALOGICAL COEFFICIENTS AND TO THE DENSITY MATRIX IS EXPLAINED.

UNCLASSIFIED

USSR   UDC 577.4

YEGOROV, YE. A., YUKELIS, YU. I.

"Algorithms of an Automated Operative-Calendar Planning System"

Tr. N.-i. i proyekt. in-ta po vnedreniyu vychisl. tekhn. v nar. kh-vo (Works
of the Scientific Research and Planning and Design Institute for tne Intro-
duction of Computer Engineering into the National Economy), 1971, vyp. 8,
pp 12-21 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V545)

No abstract

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1/2   009   UNCLASSIFIED   PROCESSING DATE--27NOV70
TITLE--ALKYLATION OF PHENOL BY TERT BUTYL CHLORIDE IN THE PRESENCE OF
ZEOLITES -U-
AUTHOR-(02)-YUKELSON, I.I., RAYEVSKAYA, V.I.

COUNTRY OF INFO--USSR

SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(5), 333-5

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ALKYLATION, PHENOL, ZEOLITE, ALKYL RADICAL, CHLORIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/0860   STEP NO--UR/0064/70/046/005/0333/0335

CIRC ACCESSION NO--AP0137888
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0137888
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REGRESSION EQUATIONS WERE OBTAINED
  CORRELATING THE TOTAL AND SEP. YIELDS OF MONO AND DI,TERT,BUTYLPHENOLS
  WITH THE REAGNET RATIO, CATALYST CONCN., AND TEMP. DURING ALKYLATION OF
  PHOH BY TERT,BUCL ON ZEOLITES OF 0.25-0.5 MM PARTICLE SIZE.   WHEN
  PHOH,TERT,BUCL WAS 1:1.2, THE YIELDS OF 0 AND P,TERT,BUC SUB6 H SUB4 OH
  ON 15PERCENT CAY AT 100DEGREES, 10 PERCENT CAX AT 175DEGREES, 5PERCENT
  NAY AT 100DEGREES, 10-20PERCENT NAX AT 100DEGREES, AND 10PERCENT NAM AT
  60DEGREES WERE 84.8, 87.4, 70.1, 96.2, AND 65.1PERCENT, RESP.   AT A
  RATIO OF 1:3 ON 20PERCENT CAY AT 100DEGREES, 10PERCENT CAX AT 125
  DEGREES, 20PERCENT NAY AT 60DEGREES, 10-20PERCENT NAX AT 100DEGREES, AND
  10PERCENT NAM AT 100DEGREES, THE YIELDS OF 2,4 AND 2,6,(TERT,BU) SUB3 C
  SUB6 H SUB3 OH WERE 58.4, 31.5, 90.3, 64.9, AND 79.2PERCENT.   AT THIS
  RATIO ON 20PERCENT CAY AT 100DEGREES, 25PERCENT CAX AT 175DEGREES,
  10PERCENT NAY AT 60DEGREES, 10-20PERCENT NAX AT 100DEGREES, AND
  10PERCENT NAM AT 100DEGREES, THE TOTAL YIELDS WERE 99.8, 94.8, 100,
  96,23, AND 93.7PERCENT.   THE ZEOLITES DECREASED IN STABILITY IN THE
  ORDER NAX, CAY, CAX, NAM, NAY.

UNCLASSIFIED

1/2   023   UNCLASSIFIED   PROCESSING DATE--11SEP70
TITLE--ELECTRON PARAMAGNETIC RESONANCE OF PRODUCTS FROM THE SULFURIZING OF
   POLYMERS CONTAINING BENZENE RINGS IN THE CHAIN -U-
AUTHOR--GLUKHOVSKOY, V.S., KOSTIN, E.S., YUKELSON, I.I.

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EPR SPECTRA AND THE CONCN. OF
  PARAMAGNETIC PARTICLES IN THE PRODUCTS FORMED BY REACTION OF
  POLY(1,3-DIMETHYLPHENYLENE SULFIDE) (I) WITH S WERE STUDIED. THE
  SULFURIZING OF I UNDER AR LED TO THE EVOLUTION H SUB2 S AND THE
  FORMATION OF A SOLID, DARK RED PRODUCT. THE REACTION OF I WITH S
  REQUIRED MORE DRASTIC CONDITION THAN DID POLY(ARYLENEALKYLS), PRESUMABLY
  DUE TO THE LOWER MOBILITY OF H ATOMS IN THE RESONANCE STABILIZED ME
  GROUPS. THE REACTION PRODUCTS OF I WITH S GAVE ASYM. EPR SPECTRA,
  ASSIGNED TO II RADICALS FORMED DURING (SHOWN ON MICROFICHE) EARLY STAGES
  OF SULFURIZING, WHILE III RADICALS WERE PRIMARILY FORMED WHEN THE S
  CONTENT WAS NEARLY EXHAUSTED.

UNCLASSIFIED

USSR

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"Isolation and Characteristics of Toxin 2 from Central Asian Cobra Venom"

Abstract: The venom of the Central Asian cobra Naja oxiana E. contains two
neurotropic agents: toxin 1 (described in an earlier report) and toxin 2.
Toxin 2 was isolated from whole venom by gel filtration on Sephadex G-75 and
then purified by ion-exchange chromatography on KM cellulose. The toxin 2
molecule consisted of 62 amino acid radicals, with only methionine, phenylala-
nine, and hydroxyproline absent. Toxin 2 injected into mice intraperitoneally
or intravenously was highly lethal to the animals. LD_{50} was 0.13 mg/kg of
animal weight, or 4 times more potent than toxin 1 and 9 times more potent
than whole venom.

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