

TEPTIN, G. M.

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HORIZONTAL STRUCTURAL WIND VELOCITY FUNCTION IN THE UPPER ATMOSPHERE

UDC 551.509.314.551.557

Article by Candidate of Physical and Mathematical Sciences G. M. Tepin, A. N. Fakhruddinova, Kazan' State University, Kazan, Meteorologiya i Aerologiya, Kazan, No. 1, 1972, submitted 5.09.71, pp. 104-105.

A study was made of the horizontal structural function at altitudes of 80-100 km in the scale range of 5-200 km with respect to radio reflections from meteor trails obtained on a radar with an angle gage. The maximum horizontal scale of the turbulence was 30-40 km; the anisotropy of the structural function was established relative to the mean wind direction.

One of the most important properties of the radiometer method of studying atmospheric movements by comparison with other methods is the possibility of investigating large-scale turbulence. In this paper a study is made of the properties of the spatial structural function $D_{ij}(r)$ for the medium and large scales.

$$D_{ij}(r) = |U_i(x, y, z) - U_j(x, y, z)|^2$$

where $U_i(x, y, z)$ are the projections of the wind velocity in the horizontal plane in the direction of the radar at points with a relative distance r .

Knowing the coordinate of the reflecting points, it is possible to determine r by the formula

$$r = \sqrt{(R_1 \sin \alpha_1 \cos \beta_1 - (R_2 \sin \alpha_2 \cos \beta_2 + U_0 \sin \alpha_3)^2 + (R_1 \sin \alpha_1 \sin \beta_1 - (R_2 \sin \alpha_2 \sin \beta_1 + U_0 \sin \alpha_3))^2}$$

where $R_1, \alpha_1, \beta_1, z$ are the range, azimuth, and zenith angle of the reflection points, U_0, α_3, β_3 are the projections of the mean velocity \bar{U} in the northerly and easterly directions,

Antennas

USSR

UDC: 621.396.969:551.508.85

TEPTIN, G. M.

"On Calculating the Effect of Antenna Radiation Patterns in Determining the Parameters of Atmospheric Movements"

V sb. Meteor. rasprostr. radiovoln (Meteoric Propagation of Radio Waves -- collection of works), vyp. 7, Kazan', Kazan' University, 1970, pp 108-115 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12659)

Translation: The author demonstrates the necessity of accounting for horizontal anisotropy of turbulence when calculating the distortions in the parameters of atmospheric motions resulting from the effect of radiation patterns when these motions are determined by the method of radar location of meteors; the procedure of accounting for this anisotropy is outlined. Corrections are calculated for a three-element and a five-element antenna of the "wave channel" type. Two illustrations, bibliography of two titles. N. S.

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Acc. Nr.: MP0042562

Ref. Code: LR0362
JPRS 50162

Spectra of Wind Velocity at Altitudes 80-100 km

(Abstract: "Characteristics of Wind Velocity Spectra at Altitudes 80-100 km," by G. B. Pokrovskiy and G. M. Tentin, Kazan' State University; Moscow, Izvestiya Akademii Nauk SSSR, Fizika Atmosfery i Okeana, Vol. VI, No 2, 1970, pp 127-133)

The spectra of atmospheric movements at altitudes 80-100 km, computed in overlapping intervals with periods from 3 hours to 28 months, reveal a number of peculiarities. On the one hand, there is a similarity to circulation in the lower atmosphere. There is a clearly expressed synoptic maximum which is also observed for ionospheric movements. The degree of expression of this maximum is of the same order of magnitude as in the surface layer. Other periodicities are observed which are similar to variations in the lower atmosphere (annual, quasisemiannual, and others). On the other hand, differences are also noted. In place of a mesometeorological minimum in the spectrum at meteor altitudes there are strongly expressed variations with periods of 12, 24 and 8 hours, caused by the solar tidal effect. In the spectrum of variations in circulation with large periods, in the zonal component of the wind the decisive variation has a

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semiannual period which is characteristic for the most part for the upper atmosphere and which is observed in density variations at altitudes ~200-1,000 km. Variations with an 8-month period are also observed; they are particularly important for the zonal wind component. However, this latter periodicity requires further confirmation on the basis of more abundant statistical data.

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UDC: 577.4

LOSEV, I. R., ~~TEPTIN, Yu. L.~~

"Concerning an Algorithm for Minimizing Weakly Defined Boolean Functions"

V sb. Primeneniye vychisl. tekhn. v mashinostr. (Use of Computer Technology in Machine Building--collection of works), Izhevsk, 1971, pp 58-62 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V466)

[No abstract]

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USSR

UDC 51.621.391

LOSEV, I. R., TEPTIN, Yu. I.

"Certain Algorithms for Minization of Weakly Defined Boolean Functions"

Avtomat. Ustroystva Ucheta i Kontrolya [Automatic Accounting and Testing Devices
-- Collection of Works], No. 6, Izhevsk, 1970, pp 32-49 (Translated from Refera-
tivnyy Zhurnal Kibernetika, No. 4, April, 1971, Abstract No. 4 V473).

Translation: This note is associated with Abstract 4 V479. Algorithms of manual
and machine minimization of weakly defined Boolean functions are studied.

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Information Theory & Pattern Recognition

USSR

TER-ARUTYUNOV, G. M., NOGTIKOV, A. N., ANISIMOV, V. V.

"Device for Input of Information From a Photographic Information Carrier"

Otkrytiya Izobretmeniya Promyshlennye Obraztsy Tovarnyye Znaki, No 35, 1972,
Patent No 359672

Translation: A device for input of information from a photographic information carrier containing a photosensitive matrix and connected to a convertor which is, in turn, connected to an input register and a pulse generator, differing in that in order to increase the reliability of counting, a marker pulse shaper containing a series-connected differentiating circuit, OR circuit, first Kipp relay, first shaper, second Kipp relay and a second shaper are connected to the input register zero-setting unit, containing a series-connected third Kipp relay and third shaper, a switch connected to the first Kipp relay, a marker pulse shaper unit, and a pulse generator, the output of the second shaper being connected to the interrogation wire, and the marker pulse shaper unit being connected to the inputs of the register.

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USSR

UDC: 53.088.3

TER-ARUTYUNYANTS, E. T.

"A Method of Deforming the Characteristic of a Nonlinear Device"
Leningrad, Prihorostroyeniye, No 2, 1972, pp 37-40

Abstract: A method is proposed, in this theoretical article, for taking into account the effect of higher harmonics in the harmonic linearization of piecewise continuous functions whose second derivatives do not vanish. The case in which the use of nonlinear control laws require harmonic linearization of one and two-valued piecewise linear functions is discussed together with an example. The author considers another approach to the problem based on an examination of the change in the fundamental which occurs as the result of distortion of the nonlinear characteristic by small-amplitude high-frequency components at the input of the nonlinear device. It was found that computations for several practical examples, made in accordance with this method, produce results which agree completely with those of modeling. The author is associated with the S. Orshonikidze Moscow Aviation Institute.

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USSR

UDC 577.391:576.345

TER-AVETISYAN, A. T., Radiobiology Sector, Ministry of Public Health, Armenian
SSR

"The Effect of X-Rays and Various Combinations of Cytotoxic Substances on
Tissue Incompatibility in Rats"

Yerevan, Biologicheskii Zhurnal Armenii, Vol 24, No 12, Dec 71, pp 68-71

Abstract: The project was conducted in order to prolong the retention periods of a homologous skin transplant on the new host by means of ionizing radiation in conjunction with various cytostatic compounds. In his last report, the author showed that the use of various combinations of immunosuppressants decreases to a considerable degree the reactive potentialities both of the recipient and of the homologous transplant. In the present paper it is shown that the combined use of X-ray irradiation and immunosuppressants sharply reduces immunobiological processes in the animal organism this, in turn, is reflected in biochemical and morphological changes, as well as in prolongation of the retention periods of a homologous transplant from the new host. In other words, the reactive potentialities, both of the recipient and of the donor, are weakened.

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USSR

UDC 577.391:611.81/82

TER-AVETISYAN, A. T., and KOGAN, V. Yu., Radiobiology Sector, Ministry of Health Armenian SSR

"Combined Effect of X-Ray Irradiation and Immunodepressants on Morphological Changes of Blood and Bone Marrow Cells"

Yerevan, Biologicheskii Zhurnal Armenii, Vol 25, No 9, 1972, pp 54-58

Abstract: White mice and rats were irradiated and given combinations of cytostatic drugs (antilymphocytic serum, trimitan, thiophosphamide, and three other drugs) to test the combined effect of such treatment on blood-forming cells. Results were similar in rats and mice. In peripheral blood, quantitative changes included an overall reduction of leukocytes to a minimum by the 4th day after treatment, and variable recovery times from 30 to 90 days after treatment, lymphocytes taking longer than granulocytes. Lymphopenia was noted for a short time in some groups. Hypersegmentation of neutrophils was observed. In the bone marrow the percentage content of hemocytoblasts and myeloblasts decreased somewhat in all groups, mature neutrophils increased somewhat, and lymphocytes and monocytes disappeared altogether. Recovery occurred within 30 days. Combination of immunodepressants and irradiation caused more profound changes in this case. In general, changes in bone marrow cells were reflected

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USSR

LEB-AVETISYAN, A. T. and KOGAN, V. Yu., Biologicheskiy Zhurnal Armenii,
Vol 25, No 9, 1972, pp 54-58

by peripheral blood changes. Thus the damage to blood-forming cells in bone marrow and, consequently, in peripheral blood is short-term with full recovery 30 days after treatment as a rule.

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USSR

UDC 539.104

TER-AVETISYAN, A. T. and ALAVERDYAN, M. I., Radiobiology Sector, Ministry of Health, Armenian SSR

"The Effects of X-Rays and of Some Immunosuppressants on the Immunobiological Characteristics of the Organism"

Yerevan, Biologicheskii Zhurnal Armenii, Vol 24, No 3, Mar 71, pp 112-115

Abstract: Rats were irradiated with x-rays in a dose of 300 r. Twenty-four hours later, antilymphocyte serum, thiophosphamide, or trimetin in doses of 0.3 ml, 3 mg/kg, and 2 mg/kg, respectively, were injected. Antilymphocyte serum was obtained by immunizing rats with mouse spleen cells. Administration of immunosuppressants (cytotoxic agents) was repeated twice per week for four weeks. Combinations of antilymphocyte serum with trimetin, antilymphocyte serum with thiophosphamide, and thiophosphamide with trimetin were used in the same manner. As shown by tests on control rats that had been irradiated but not treated with immunosuppressants, irradiation resulted in a gradual decrease of the content of gamma-globulins in the blood serum during the next four weeks. The effect of both irradiation and immunosuppressants resulted in a much greater decrease of the gamma-globulin content. The decrease was generally greatest during the third week of

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TER-AVETISYAN, A. T., and ALAVERDYAN, M. I., *Biologicheskii Zhurnal Armenii*,
Vol 24, No 3, Mar 71, pp 112-115

radiation sickness, with the content of gamma-globulins dropping to zero or close to zero in some instances. The level of alpha- and beta-globulins was affected similarly, while that of albumins rose to some extent. The most pronounced post-irradiation hypoglobulinemia was produced by combinations of immunosuppressants. Simultaneously with the reduction of globulin content, there were decreases in leukocyte count, hemoglobin content, and the erythrocyte count during the 3-4 weeks after irradiation in rats treated with immunosuppressants.

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USSR

Plant Pathology

UDC 632.4:633.11:582.285.2(47+47)

102

LESOVOY, M. P., FEDOROVA, V. A., SHKODENKO, V. I., TERESHCHENKO, B. A.,
SHOPINA, V. V., IBRAGIMOV, G. R., AKHMEDOV, S. A., YEROGORVA, N. L.,
MAMONTOVA, A. N., PERESYPKIN, V. F., BOYKO, Yu. I., SHAVARINA, Z. A.,
CHUMAKOV, A. Ye., YAREMENKO, Z. I., PAYCHADZE, L. V., and EL'CHIRAYEV, A. A.,
All-Union Institute of Plant Protection, Ukrainian Institute of Plant
Protection, Ukrainian Agricultural Academy, Azerbaydzhan Institute of Agricul-
ture, Central Asian Institute of Plant Pathology, and Kazan' Institute of
Plant Protection, Georgian Institute of Plant Pathology

"Race Formation in *Puccinia triticina* Eriks. and *P. striiformis* West. in the
USSR"

Leningrad, Mikologiya i Fitopatologiya, No 6, 1972, pp 428-434

Abstract: Study of the causative agents of orange leaf and stripe rusts of
wheat in different parts of the Soviet Union and some other European countries
showed that, despite the great variety of races, only a few are responsible for
epiphytotics. The main races are fairly constant from year to year. This
stabilization is due to the fact that that more than 90% of all the regionalized
wheat varieties in the USSR are susceptible to all races of the pathogens. The
racial composition of the pathogens in the USSR is similar to that occurring
elsewhere in Europe because of the exchange of original forms and use of the

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USSR

LESOVOY, M. P., et al., Mikologiya i Fitopatologiya, No 6, 1972, pp 428-434

same components in breeding wheat varieties. The appearance of new races and biotypes and changes in their virulence are the result of mutation, heterokaryosis, resistant varieties, and sexual hybridization.

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USSR

UDC 669.183.4:621.745.4

LESHCHENKO, I. P., TERESHCHENKO, V. T., MARTYNOV, O. V., TRAKHIMOVICH, V. I., and BORZENKOV, D. V., Tula Branch of Central Scientific Research Institute of Ferrous Metallurgy, Novo-Tula Metallurgical Plant

"Sponge Iron for Steel Melting Production"

Moscow, Metallurg, No 7, Jul 73, pp 20-22

Abstract: Investigations at the Novo-Tula Metallurgical Plant has revealed that iron ore concentrates with a maximum concentration degree must be used for the production of sponge iron suitable for remelting in steel melting aggregates. Factors which must be considered when using sponge iron in the capacity of raw material, burden, and substitute for steel scrap, are discussed. The increase of iron content in the iron ore concentrate at maximum reduction degree of 98% leads to the growth of metallic iron in the sponge according to

$$\Delta Fe_{met} = \frac{16\Delta Fe_{init}}{9.5}, \text{ where } \Delta Fe_{met} = \text{increase}$$

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LESCHENKO, I. P., et al., Metallurg, No 7, Jul 73, pp 20-22

of concentration of reduced metallic iron in sponge (in %), and ΔFe_{init} = increase of iron content in initial concentrate (in %). The iron sponge oxidation dependence in storage on the metallization degree is characterized by $\Delta O = 9.93 - 0.094 \rho$, where ΔO = oxidation concentration increase in sponge iron during storage (in %), and ρ = metallization degree of initial sponge (in %). The $\Delta \rho$ dependence on the storage time in open air is illustrated. Three figures, two tables.

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USSR

UDC 591-484

TER-GAZARYANTS, YE. T., and GEVORKYAN, D. A., Optical Reception Laboratory,
Academy of Sciences Armenian SSR

"Some Functional and Morphological Characteristics of the Action of Laser
Radiation on the Retina of a Pigeon's Eye"

Yerevan, Biologicheskii Zhurnal Armenii, Vol 25, No 1, 1972, pp 83-87

Abstract: Experiments were conducted to determine functional changes in the retina following laser irradiation and their relation to morphological changes. The left eye was irradiated three times at 3-day intervals by a defocused laser (wavelength-6943Å, pulse repetition rate-2hz, energy-0.1 j/pulse, pulse duration-not more than 35 nanosec.). An electroretinogram was used during and after irradiation to register retinal activity. Negative oscillations in the ERG of the pigeons during direct irradiation shows positive retinal damage. The ERG did not deviate from its usual form when subjected to a test flash of light immediately following laser irradiation. The enucleated pigeon eyes were treated and prepared in dyed, 15 micron sections. The following morphological changes were observed: The left eyes showed acute edema and histiocytic infiltration in the area of the optic disc and of the layer of nerve fiber. At the base of the pecten, with a background of the edema, infiltration with depigmentation and destruction of the pecten tissue structure.

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USSR

TER-GAZARYANTS, YE. T., and GEVORKIAN, D. A., *Biologicheskii Zhurnal Armenii*,
Vol 25, No 1, 1972, pp 83-87

In the pecten itself, acute vascular plethora with destruction of the pecten's pigment structure, decomposition of pigment with its conversion to a fine-grained structure, swollen vascular endothelia. In the vascular tunic, structural damage, retinal-porosity formation, vessel dilation, and leukocyte accumulation. Hypertrophy and homogenization in the vascular endothelia. Vascular pigment depleted or absent. Retinal peeling together with pigment epithelium as a result of hemorrhaging and destruction of pigment epithelium. Edema of layer of nerve fiber. Iris pigment depleted. Histolympocytic infiltration of iris. Crystalline lens capsule peeling. In the cornea, epithelial layers were shed, areas of desquamation and discomplexation of epithelium. The right, unexposed retina was ruptured along the pigment epithelium and histiocytic infiltration in the area of the outlet of the pecten was observed.

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USSR

UDC 616.9:681.142

TER-KARAPETYAN, A. Z., TEPLYAKOV, B. Ya., DROZDOVA, A. A., MONAKHOVA, S. I., and
RUZHANOVA, F. G., Central Scientific Research Institute of Epidemiology, Ministry of
Health, USSR, and Belorussian Scientific Research Institute of Epidemiology and
Microbiology

"Centralized Processing of Materials on Infectious Diseases"

Minsk, Zdravookhraneniye Belorussii, No 6, 1970, pp 66-67

Abstract: The organization of data requires centralized processing of properly
classified information which may be suitable for machine processing. For this pur-
pose, a new chart was prepared by the Central Institute of Epidemiology, designed
for epidemiological studies and provided with a separate sheet containing 18 points
considered essential for centralized processing. At the seminars attended by all
epidemiologists, their aides, and all others working with infectious diseases, the
various difficulties concerning the particular items in the new chart were resolved.
Putting these new charts through the Minsk-22 computer proved accurate, reliable,
and time-saving.

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USSR

~~TER-KARAPETYAN, A. Z.,~~ RUNOVA, G. A., and YASHKOVA, S. A., Central Institute of Epidemiology, Moscow

UDC 616.9-036.21-084.4

"Indices of Epidemiological Service Rendered to the Population According to Reports of Sanitary Epidemiological Stations"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 7, Jul 70, pp 39-44

Abstract: Form 36, routinely filled out by all Soviet sanitary epidemiological stations, provides detailed information on a great variety of infectious diseases, especially on trends over a period of years and in different parts of the country. It is helpful in assessing the health status at a given time and in planning preventive measures. Form 36 has three sets of indices. The first applies to individual patients and covers completeness of hospitalization, timeliness of hospitalization, laboratory tests, confirmation of diagnoses, etc. The second set of indices concerns activity in epidemic foci, including frequency of detecting a source of infection, completeness of epidemiological inspection of foci, bacteriological examination of individuals who had contact with sick persons, etc. The third set involves systematic bacteriological examinations of mandatory groups (food handlers, workers in central water supply installations, institutionalized

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TER-KARAPETYAN, A. Z., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 7,
Jul 70, pp 39-44

children). The shortcomings of Form 36 are analyzed, and some suggestions for
improvement are made.

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1/2 011 UNCLASSIFIED
TITLE--STATE OF AMINO ACIDS IN A SOLUBLE FRACTION OF CANDIDA ALBICANS AT
THE END OF THE EXPONENTIAL GROWTH PHASE -U- PROCESSING DATE--04DEC70
AUTHOR--(02)-TERKARAPETYAN, M.A., GEVORKYAN, D.A.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK ARM. SSR 1970/50(1), 42-8
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--AMINO ACID, FUNGUS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605006/F03 STEP NO--UR/0252/70/050/001/0042/0048
CIRC ACCESSION NO--AT0139816
UNCLASSIFIED

2/2 011

CIRC ACCESSION NO--AT0139816
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--04DEC70

ABSTRACT. FRACTIONATION OF AMINO ACID POOLS
BY A SYSTEMATIC EXTN. WITH ACETONE AND ETOH WAS INVESTIGATED. QUANT.
DETN. WAS CARRIED OUT BY PAPER CHROMATOG. AND NINHYDRIN. WITHIN THE
CELL NO SINGLE METABOLIC POOL OF AMINO ACID MONOMERS WAS FOUND BUT
RATHER A NO. OF SYSTEMS. MICRO AND MACROMOL. STRUCTURES WITH TOTAL POS.
OR NEG. CHARGES MAY BE RESPONSIBLE FOR THE DISTRIBUTION OF AMINO ACIDS.
FACILITY: EREVAN. GOS. UNIV. EREVAN, USSR.

UNCLASSIFIED

UDC 51

USSR

TER-KRIKOROV, A. M.

"Investigating Equations of Dynamic Balance With Delay"

Moscow, V sb. Issled. operatsiy. Modeli, sistemy, resheniya (Investigation of Operations: Models, Systems, and Solutions -- collection of works), 1972, pp 58-63 (from RZh--Matematika, No 10, 1972, Abstract No 10V560)

Translation: A system of equations of dynamic balance of the Leont'yev type with delay is examined. It is assumed that there is only one reserve-forming branch. The problem reduces to solving one difference equation of order n . Conditions are found under which balanced increase is possible, and an asymptotic solution for large t is set up. Author's resume.

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1/2 012
 TITLE--SHOWER AMPLIFICATION OF THE CONTRIBUTION OF BRANCHING AND THE
 GROWTH OF TOTAL CROSS SECTIONS WHEN E YIELDS TO INFINITY -U-
 AUTHOR--(02)-TERMARTIROSYAN, K.A., LENDEL, A.I.
 COUNTRY OF INFO--USSR
 SOURCE--PIS'MA ZH. EKSP. TEOR. FIZ. 1970, 11(1), 70-5
 DATE PUBLISHED-----70

UNCLASSIFIED

PROCESSING DATE--16OCT70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--INTEGRAL CROSS SECTION, CASCADE, HIGH ENERGY PARTICLE, PION,
NUCLEON, K MESON, PION PROTON INTERACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1988/0667

STEP NO--UR/0386/70/011/001/0070/0075

CIRC ACCESSION NO--AP0105643

UNCLASSIFIED

PROCESSING DATE--1900

UNCLASSIFIED

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CIRC ACCESSION NO--AP0105643
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. TOTAL CROSS SECTIONS OF THE
PARTICLES PI PRIMEPLUS OR MINUS, N, K PRIMEPLUS OR MINUS, N AT E YIELDS
INFINITY COULD BE EXPLAINED BY SHOWER FORMATION IN THE FORM OF
REDISPERSION AND INCREASE OF BRANCHING, WITH PP BRANCHING GIVING THE
MAIN CONTRIBUTION. THE THEORETICAL MODELS FOR CASCADE AMPLIFICATION ARE
SHOWN. EFFECTS WERE ALSO HYPOTHESIZED OF A CASCADE SCHEME FOR THE
GLAUBER CORRECTION OF SECTION DIFFERENCE FOR THE PI P AND PI PRIME
POSITIVE P PARTICLES.

UNCLASSIFIED

UDC 621.319.491-416.029.64

USSR

VENDIK, O. G., LOOS, G. D., TER-MARTIROSYAN, L. T.

"Planar Segnetoelectric Capacitors for Microwave Devices"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 10, 1972, pp 2241-2243

Abstract: Studies were made of the electric and thermal characteristics of segnetoelectric capacitors for superhigh frequency devices at temperatures corresponding to the paraelectric phase of the segnetoelectric. Planar capacitors of Ba (Ti, Zr)O₃, (Ba, Sr)TiO₃ and SrTiO₃ films obtained by the method of agglomeration on BeO were investigated. For thicknesses of the films of several microns the capacitors have high nonlinearity. A decrease in the initial capacitance of the capacitor with a decrease in the film thickness confirms the known laws of variation of ϵ with thickness of the segnetoelectric layer [E. V. Bursian, et al, Fizika tverdogo tela, Vol 6, No 6, 1818, 1964; St. Clucksman, et al., Zesz. nauk. Wyzsza szkola ped. Katowicach, No 6, 7, 1968]. The nonlinearity of the films in the investigated thickness range of 3-40 microns varied little. MgO can be recommended as the substrate material. The capacitance and nonlinearity of planar capacitors with a substrate of MgO is lower than in the case of using BeO for the same film thicknesses. Satisfactory nonlinearity is not obtained on sapphire with film thicknesses less than 5 microns. The dielectric losses in the planar capacitors in the centimeter wave 1/2

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USSR

VENDIK, O. G., et al., Radiotekhnika i Elektronika, Vol 17, No 10, 1972, pp 2241-2243

range were defined by the resonator method. To measure the thermal delay constant the investigated capacitor was included in a superhigh frequency circuit to which a weak measuring signal and powerful pulses were fed. The temperature dependence of the capacitance of a planar capacitor is characterized by a highly diffuse peak for film thicknesses less than 10 microns. Capacitors with a SrTiO_3 film applied by the agglomeration method on a PbO substrate made it possible for the first time to realize successful operation of a nondegenerate parametric amplifier in the 2 gigahertz range in the continuous mode.

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Ref. Code: UR 0056

Acc. Nr: **AF0038049**

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1970, Vol 58, Nr 1, pp **281-290**

**RAYLEIGH AND COMBINATIONAL SCATTERING
IN THE FIELD OF AN INTENSE WAVE**

Ter-Mikavelyan, M. L.; Melikyan, A. O.

Scattering of a light wave by an atom is considered without assuming validity of perturbation theory with respect to the scattered field. The scattered light frequency may be close to ω_{21} which is the frequency corresponding to the energy difference of the two atomic levels. Relaxation of the system is neglected and it is assumed that the strength of the scattered wave field is much smaller than the characteristic atomic values. It is shown that deviation from the usual perturbation theory results depends on the parameter α (11). Scattering of light by a two-level system is first considered; it is shown that besides spontaneous unshifted scattering (23), combinational stimulated scattering with a frequency (24) appears, providing allowance is made for the saturation effect. The magnitude of this scattering is defined by cross section (30). Moreover, in an intense field a two-level system possesses an absorption line at the frequency (25), the cross section being (31). The results are extended to the case of

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a many — level system. The transition $1 \rightleftharpoons 2$ is considered by taking into account intermediate levels and nonresonance terms. Additional coherent spontaneous scattering at a double frequency with a cross section (38) appears in this case. Noncoherent stimulated combinational scattering at two additional frequencies (40) and (42) defined by the cross sections (41) and (43) appears. The system will possess absorption at new additional frequencies (45) and (42') defined by cross sections (46) and (47). The formulas correctly describe the limiting transition to perturbation theory formulas.

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UDC 8.74

USSR

TER-MIKAEIYAN, T. M., URUTYAN, R. L.

"General Description of the Garni Computer and the Process of Implementing the Translation Algorithm"

Tr. Vychisl. tsentra AN ArmSSR i Yerevan. un-ta (Works of the Computation Center of the Armenian SSR Academy of Sciences and Yerevan University), 1972, No 7, pp 9 -23 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V555)

Translation: A description of the device and functioning of a specialized computer, the Garni, designed for automation of translation from one language to another is presented.

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1/2 020

TITLE--EFFECT OF CORTISONE AND SOME METHODS OF PRESERVATION ON THE
TRANSPLANTED HETEROCARTILAGE -U-
AUTHOR--TERMINASOVA, N.N.

PROCESSING DATE--27NOV70

COUNTRY OF INFO--USSR

SOURCE--ORTOPEDIYA, TRAVMATOLOGIYA I PROTEZIROVANIYE, 1970, NR 5, PP 53-56

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TISSUE TRANSPLANT, CARTILAGE, CORTISONE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3004/0732

STEP NO--UR/9115/70/000/005/0053/0056

CIRC ACCESSION NO--AP0131327

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--27NOV70

212 020

CIRC ACCESSION NO--AP0131327
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE OBJECT OF THE AUTHOR CONSISTED IN THE STUDY IN EXPERIMENT OF THE EFFECT OF CORTISONE AND SOME METHODS OF PRESERVATION ON THE RESULTS OF TRANSPLANTATION OF HETEROGENOUS CARTILAGE. THE METHODS OF COOLING AT THE TEMPERATURE OF PLUS 4DEGREESC, FREEZING AT MINUS 70DEGREESC AND STORAGE IN PARAFFIN AT PLUS 4DEGREESC HAVE BEEN INVESTIGATED. TO STUDY THE EFFECT OF CORTISONE, THE EXPERIMENTAL GROUP OF ANIMALS RECEIVED INJECTIONS OF THE PREPARATION BY THE DEVELOPED METHOD. MICROSCOPIC STUDIES AND DETERMINATION OF TISSUE RESPIRATION OF GRAFTS AT VARIOUS PERIODS AFTER TRANSPLANTATION SERVED AS TESTS, DETERMINING THE VIABILITY OF THE TRANSPLANTED CARTILAGE. THESE STUDIES REVEALED THAT ADMINISTRATION OF CORTISONE DURING TRANSPLANTATION FAVOURS SURVIVAL OF THE TRANSPLANTED GRAFTS. THE EXPERIMENTS HAVE ALSO ESTABLISHED THE DEPENDENCE OF THE RESULTS OF TRANSPLANTATION ON THE METHOD OF CARTILAGE PRESERVATION. FACILITY: EREVAN. INSTITUTA TRAVMATOLOGII I ORTOPEDII IM. KH. A. PETROSYANA.

UNCLASSIFIED

USSR

TER-MKHITAROV, M. S., Candidate of Technical Sciences, Docent, and MUKHIN, V. D.,
Perm' Polytechnic Institute

"Laboratory Work Using Computers"

Moscow, Vestnik Vyshey Shkoly, No 10, Oct 70, pp 39-40

Abstract: The course "Principles of Computer Technology" at Perm' Polytechnic Institute employs a cycle of laboratory sessions in which students become acquainted with the designs of individual calculating devices and acquire skill in using series computers. The technical center for these sessions is the laboratory of the Chair of Computer Technology, which is equipped with a "Minsk-1" digital computer and MN-7, MPT-9-3, EMU-8, EMU-10 analog machines. The choice of subject for the analog machines varies according to the students' specialization. As a rule, the students have no trouble with the analog machines, but do with the digital computer. Therefore, the chair designed a series of laboratory stands for the exercises in digital computer technology. One of the stands is a table design, fed by three-phase voltage. A base of series logic elements of the "Mir-1" system is used, supplemented with auxiliary elements. There are no connections in the stand except for the power

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USSR

TER-MKHITAROV, M. S., and MUKHIN, V. D., Vestnik Vysshey Shkoly, No 10, Oct 70, pp 39-40

circuits, with all inputs and outputs brought out to a patchboard. The stand includes 86 logic elements, including AND-OR-NOT, 3- and 4-input AND, 3-input OR, AND (pulse-potential), delay elements (univibrators), YES elements (power amplifiers), binary signaling elements, and binary code transmitters.

The subjects developed for the laboratory sessions in digital computer technology were designed to give the students practical experience in the design and study of logic circuits, digital computing circuits, and computer components. The cycle of laboratory sessions culminates with teaching the students to work directly with a "Minsk-1." Students majoring in "Automation and Telemechanics" are given 14 hours for this, with at least two hours to be spent at the console.

2/2

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USSR

UDC 519.281

TER-MKRTCHYAN, M. G.

"Equivalence with Respect to Dissipation of Two Systems of Random Quantities"

Tr. Gidrometeorol. N-I. Tsent. SSSR, [Works of USSR Hydrometeorological Scientific Research Center], 1970, No 64, pp 140-145, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V155 by the author).

Translation: The problem of equivalence with respect to dissipation of two sets of normally distributed random quantities is studied from the general standpoint. A new formula is produced for the equivalent number of independent random quantities. A new proof is presented for a formula produced earlier by the author by the method of characteristic functions.

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USSR

BALALAYEV, V. A., DZHELEPOV, B. S., MEDVEDEV, A. I., TER-NERSESYANTS, V. YE.,
UCHEVATKIN, I. F., and SHESTOPALOVA, S. A., All-Union Scientific Research Institute
of Metrology imeni D. I. Mendeleev

"On Lu¹⁶⁹ Decay"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol. 34, No. 1, Jan 70,
pp 2-11

Abstract: The conversion electron spectrum of Lu¹⁶⁹ was measured on the $\pi/2$ β -spec-
trometer of the Institute in the energy ranges 480-900 keV and 1000-1500 keV.
Several tens of new lines were observed. A table of transitions in Yb¹⁶⁹ occurring
in the decay of Lu¹⁶⁹ is compiled on the basis of these measurements and the data
of other authors and covers transition energies from 24 keV to 2300 keV. The tran-
sition energies are given together with the mean-square error, and also the inten-
sities of K-conversion electrons, data on the intensities of γ -transitions, calcu-
lated conversion coefficients, and the multipolarity. A decay scheme for Lu¹⁶⁹ is
given based on all the available data on Yb¹⁶⁹ levels.

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PROCESSING DATE--16OCT70

UNCLASSIFIED

1/2 009
TITLE--DECAY OF LUTETIUM-169 -U-

AUTHOR--(05)-BALALAYEV, V.A., DZHELEPOV, P.S., MEDVEDEV, A.I.,
TERNERSESYANTS, V.YE., UCHEVATKIN, I.F.
COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(11), 2-11

DATE PUBLISHED-----70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--LUTETIUM ISOTOPE, RADIOACTIVE DECAY SCHEME, CONVERSION
ELECTRON SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1988/0230

STEP NO--UR/0048/70/034/001/0002/0011

CIRC ACCESSION NO--AP0105306

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105316
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SPECTRUM OF CONVERSION E FROM PRIME169 LU WAS MEASURED OVER THE 400-900 AND 1000-500 DEV RANGES. THE LU FRACTION WAS OBTAINED BY CHROMATOGRAPHIC SEPN. FROM A TA TARGET IRRADIATED WITH 660-MEV RHO. MANY NEW TRANSITIONS WERE OBSERVED, AND OTHERS WERE REFINED, ALSO IN OTHER ENERGY RANGES. IN TOTAL, 156 TRANSITIONS WERE TABULATED WITH ENERGIES RANGING FROM 24.2 TO 2296.9 KEV TOGETHER WITH INTENSITIES OF CONVERSION K E. A COMPLETE DECAY SCHEME OF PRIME169 LU IS PRESENTED. FACILITY: VSES, NAUCH.-ISSLED. INST. METROL. IM. MENDELEEVA, LENINGRAD, USSR.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--EXCITATION OF LEVELS OF 633 AND 718 KEV IN THULIUM-169 DURING THE
DECAY OF YTTERBIUM-169 -U-
AUTHOR-(104)-ALEKSANDROV, V.S., BALALAYEV, V.A., OZHELEPOV, B.S.,
TERNERSESYANTS, V.YE.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(1), 42-53
DATE PUBLISHED-----70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--NUCLEAR ENERGY LEVEL, EXCITED NUCLEUS, THULIUM ISOTOPE,
YTTERBIUM ISOTOPE, GAMMA SPECTRUM, GAMMA TRANSITION, BETA DECAY,
RADIOACTIVE DECAY SCHEME

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1988/0277

STEP NO--UR70048/70/034/001/0042/0053

CIRC ACCESSION NO--AP0105351

UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105351

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. GAMMA SPECTRUM AND CONVERSION E OF PRIME169 YB WERE STUDIED IN THE RANGE OF SPECTRA WHERE GAMMA TRANSITIONS OF THE K PRIMEPI EQUALS 3-2 PLUS WERE EXPECTED. ELECTROLYTICALLY DEPOSITED TA WAS IRRADIATED WITH 660-MEV RHO, AND PRIME169 YB WAS SEPD. BY CHROMATOG. FROM THE TARGET LU FRACTION. INTENSITIES OF 9 NEW CONVERSION LINES WERE MEASURED AND TABULATED. OF THESE, THE 370.86-KEV LINE WERE M2, AND 494.15, 514.89, 579.41, 600.2, AND 624.58 WERE M1. THESE WERE INCLUDED IN THE REVISED DECAY SCHEME OF PRIME169 YB. THE NATURE OF THE 571.0-KEV (3-2 PLUS) LEVEL IS DISCUSSED. IT IS 3-2 PLUS (411) YIELDS UP ALTHOUGH IT IS OF MIXED NATURE, THE WAVEFUNCTION CONTG. BOTH UNIPARTICLE AND COLLECTIVE COMPONENTS. THE 571.0-, 633.03-, 718.3-, AND 825.2-KEV LEVELS OF PRIME169 TB WERE FILLED BY BETA NEGATIVE PROCESSES WITH RELATIVE ABUNDANCES OF LESS THAN 1 TIMES 10 PRIME NEGATIVE 3, 1.1 TIMES 10 PRIME NEGATIVE 2, 3.6 TIMES 10 PRIME NEGATIVE 3, AND LESS THAN 6 TIMES 10 PRIME NEGATIVE 4PERCENT, RESP. THE TOTAL DISINTEGRATION ENERGY OF PRIME169 YB WAS ESTD. TO BE 1100 PLUS OR MINUS 200 KEV. FACILITY: VSES. NAUCH.-ISSLED. INST. METROL. IM. MENDELEEVA, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 691.327.002.612

ARADOVSKIY, YA. L., Candidate of Technical Sciences, ~~TER-OSIPYANTS, R. G.,~~
Candidate of Technical Sciences, and ARADOVSKAYA, E. M., Engineer

"Properties of Concrete with Magnetically Treated Water"

Moscow, Beton i Zhel'ezobeton, No 4, Apr 72, pp 32-34

Abstract: Results of research works of the use of magnetically treated water in the production of heavy concretes and heavy concrete articles are reported. Experimental investigations of the Tashkent Zonal Scientific Research Institute for Power Supply and of the Trust of the State Institute for the Introduction of Advanced Technological Operational and Labor Methods in Construction (of the Main Administration for the Construction of Industrial Establishments in the Tashkent Region) revealed that one of the main characteristics of concrete mix prepared on magnetically treated water is its decreased vibration strength. From mathematical processing of experimental data, a formula for the additional growth of the concrete strength with magnetically treated water, depending on the composition of the mix, was developed. The change of rheological indices of concrete mixes, expressed in the decreased vibration viscosity of the mix with magnetically treated water, was established. Data of the optimum method of water treatment are given and

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USSR

ARADOVSKIY, YA. L., et al., Beton i Zhelezobeton, No 4, Apr 72, pp 32-34

results of the change in the plastification strength of the wet concrete mix by reagent and reagentless processing methods are discussed. The physico-mechanical properties of concretes on magnet treated water are shown. Three illustrations, three tables, three biblio. refs.

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USSR

UDC 621:762

MUSIKHIN, A. M., VINogradov, G. A., OGNEV, R. K., KOLONOYETS, G. G., and
TER-POGOSYAN, E. D.

"High-Speed Rolling of Iron and Titanium Powders"

Moscow, Metallurgiya i Khimiya Titana (Institut Titana), Metallurgiya
Publishing House, Vol 6, 1970, pp 100-105

Translation: Results are given for research on conditions of rolling with forced feeding of metal powders. An empirical dependency is established between the thickness of the strip and the productivity of the mill as a function of the value of the roll solution and pressure of the powder support. It is demonstrated that the use of forced powder feeding makes it possible to increase the rolling speed to 3.2 meters per second and more, and to regulate the density of the strip within a wide range. Four illustrations, one table, and two bibliographic entries.

1/1

- 64 -

USSR

UDC 621.762

3

BRYNZA, A. P., OGNEV, R. K., KINSKAYA, Ye. S., PATRUSHEVA, A. G., KOLONOYETS, G. G., SOROKINA, Z. Ye., and TER-POGOSYAN, E. D.

"Corrosion of Powder Metallurgy Titanium in a Damp Atmosphere Containing Hydrogen Chloride and in Solutions of Hydrochloric Acid"

Moscow, Metallurgiya i Khimiya Titana (Institut Titana), Metallurgiya Publishing House, Vol 6, 1970, pp 105-111

Translation: The corrosion behavior of powder metallurgy titanium in gases and solutions of hydrochloric acid within the temperature interval 20-80°C is investigated. It is established that at a temperature of 20°C, atmospheric corrosion of powder metallurgy titanium above 3 and 7% solutions of hydrochloric acid is not observed, and in a solution of hydrochloric acid with a concentration up to 10%, slight corrosion is observed after a certain induction period. At 80°C, powder metallurgy titanium corrodes with all concentrations of hydrochloric acid that were studied. The effective energy for activating the process of dissolving titanium specimens is 62.8-71.2 kilojoules per mole. Seven illustrations, one table, and 11 bibliographic entries.

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USSR

UDC 621.762.001:669.295

OGNEV, R. K., BRYNDIN, V. G., TER-POGOSYAN, E. D., KOLOMOYETS, G. G., and PEREVYAZKO, A. I.

"Study of the Process of Oxidation of Cermet Titanium Specimens"

Sb. tr. Vses. n.-i. i proyekt. in-t titana (Collection of works of the All-Union Scientific Research and Design Institute of Titanium), 1970, 5, pp. 81-85 (from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11G307)

Translation: Together with oxidation, compaction of specimens takes place. The rate of oxidation of porous Ti specimens at temperatures higher than $\alpha \rightarrow \beta$ -transformation of Ti is inhibited and the intensity of compaction increases. 3 ill. Author's abstract

1/1:

UDC 621.762.01:669.295

USSR

OGNEV, R. K., KOLOMOYETS, G. G., TER-POGOSYAN, E. D., ESTRAKH, L. M.,
ANOKHIN, V. M., and PEREVYAZKO, A. I.

"Influence of Technological Parameters on Properties of Structural
Products Produced by Pressing Titanium Powders"

Sb. tr. Vses. n.-i. i proyekt. in-t titana [Collected Works of All-Union
Scientific-Research and Planning Institute for Titanium], 6, 1970, pp.
94-97, (Translated from Referativnyy Zhurnal-Metallurgiya, No. 1, 1971,
Abstract No.1 G453 by the authors).

Translation: The authors studied the influence of the properties of the
initial powders and technological parameters in the manufacture of
structural products on their mechanical properties. With identical
pressing pressures, the density of products of electrolytic powders is
higher than that of similar products of hydride powders by 4-7%, although
this difference is reduced during heat treatment. Increasing the
sintering temperature of metal ceramic Ti causes an increase in σ_b and δ .
With a heat treatment temperature of 1300° , σ_b is 55-65 kg/mm², δ reaches
11%. 2 figures; 1 table.

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USSR

UDC 621.762:669-496.295

OGNEV, R. K., TER-POGOSYAN, E. D., KOLOMOYETS, G. G., PEREVYAZKO, A. I.,
ESTRAKH, L. M. and ANOKHIN, V. M.

"Metal Ceramic Filters of Titanium Wastes"

Sb. tr. Vses. n.-i. i proyekt. in-t titana. [Collected works of All-Union
Scientific-Research and Planning Institute for Titanium], 6, 1970,
pp. 97-99, (Translated from Referativnyy Zhurnal-Metallurgiya, No. 1,
1971, Abstract No.1 G475 by the authors).

Translation: The influence of technological parameters of the manufacture
and properties of initial Ti powder on productivity of filters is studied.
Pressing of filters should be performed at pressures up to 2 t/cm²,
sintering at temperatures of less than 1100°. The productivity of filters
is determined for filtration of fluids. The dependence of productivity
on pressure drop of up to 1 atmosphere and on size and shape of initial
powder particles is determined. The throughput capacity for water of
filters made of hydride powder is three times higher than the throughput
capacity for filters made of electrolytic powder. 2 figures.

1/1

- 50 -

USSR

UDC 621.762:669.462.295

MUSIKHIN, A. M., VINOGRADOV, G. A., OGNEV, R. K., KOLOMOYETS, G. G., and
TER-POGOSYAN, E. D.

"High-Speed Rolling of Iron and Titanium Powders"

Sb. tr. Vses. n.-i. i proyekt. in-t titana [Collected Works of All-Union
Scientific-Research and Planning Institute for Titanium], 6, 1970,
pp. 100-105, (Translated from Referativnyy Zhurnal-Metallurgiya, No. 1,
1971, Abstract No. 1 6474 by the authors).

Translation: The use of forced powder feed allows the rolling speed to be increased to 3.2 m/sec and higher, i.e., to speeds higher than those ordinarily used by several orders of magnitude. The density of the raw rolled product with forced feed can be adjusted over broad limits by changing the powder feed force. Increasing the height of the powder column in the hopper over the mill with gravity powder feed cannot be used to replace forced powder feed, since it does not allow an increase in rolling speed and has no influence on the thickness and density of the raw rolled product.
4 figures.

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UDC 519.281

USSR

SERGIYEVSKIY, G. M., TER-SAAKOV, A. P.

"Method for Accelerating a Multidimensional Stochastic Approximation"

V sb. Nekotor. vopr. kibernet. (Certain Problems in Cybernetics -- Collection of Works), No 1, Moscow, 1970, pp 92-100 (From RZh-Matematika, No 10, Oct 70, Abstract No 10V121)

Translation: Let $y(X)$ be a random function of the argument $X = \|x_1, \dots, x_m\|^T$ with the distribution $F(y/X)$; $M(X) = M\{y(X)\} = \int y dF(y/X)$ is a regression function with a single maximum at the point $X = \theta$. The stochastic approximation process converging to θ under certain conditions is determined by the relationship

$$X_{n+1} = X_n + a_n \frac{Z_n}{c_n}$$

where

$$a_n > 0; c_n > 0; \lim_{n \rightarrow \infty} c_n = 0; \sum_{n=1}^{\infty} a_n = \infty;$$

$$\sum_{n=1}^{\infty} a_n c_n < \infty; \sum_{n=1}^{\infty} \left(\frac{a_n}{c_n}\right)^2 < \infty.$$

It is proposed that the vector of the increments Z_n/c_n be used with components

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USSR

SERGIYEVSKIY, G. M., TER-SAAKOV, A. P., V sb. Nekotor. vopr. kibernet., No 1, Moscow, 1970, pp 92-100

$$b_i = \frac{1}{Nc_n^2} \sum_{k=1}^N \Delta x_i^k [n] y^k [n].$$

determined from measurements of $y^k [n]$, $k = 1, 2, \dots, N$, of the function $y(X)$ made at points different from X_n by the variations $\Delta x_i^k [n]$ of the variables x_i , $i = 1, 2, \dots, m$, $k = 1, 2, \dots, N$ which satisfy the relationships $|\Delta x_i^k [n]| = c_n$ for any k and i ,

$$\sum_{k=1}^N \Delta x_i^k [n] = 0, \quad i = 1, 2, \dots, m.$$

$$\sum_{k=1}^N \Delta x_i^k [n] \Delta x_j^k [n] = 0, \quad i \neq j.$$

and which thus determine a completely saturated orthogonal plan of the factor experiment with the number of measurements $m + 1 \leq N \leq m + 4$. The values of b_i give a more precise evaluation of the components of the gradient than the initial differences $[y(X_n + c_n e_i) - y(X_n)] / c_n$ or the central differences

USSR

SERGIYEVSKIY, G. M., TER-SAAKOV, A. P., V sb. Nekotor. vopr. kibernet., No 1, Moscow, 1970, pp 92-100

$$\frac{[y(X_n + c_n e_i) - y(X_n - c_n e_i)]}{(2c_n)}$$

$i = 1, 2, \dots, n$, if $y(X)$ has continuous first and second derivatives for almost all sample trajectories and the dispersion of the derivative $\partial y(X)/\partial x_i$ of the deviations $y(X) = y(X) - M(X)$ is sufficiently small as compared with the dispersion of $y(X)$. (Here e_i is a unit vector corresponding to the component x_i , $i = 1, 2, \dots, m$). The stochastic approximation process is correspondingly accelerated. If the function $y(X)$ is obtained as a result of statistical modeling on a computer, developing the relation between experiments of the n -th step through the use of the same random numbers raises the accuracy of the evaluation.
Yu. Pollyak.

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USSR

UDC 621.384.6

GOLOVIN, V.N., TER-SAAKOV, A.P.

"Problems Of Experimental Evaluation Of Waveguide Bunchers"

V sb. Uskoriteli (Accelerators--Collection Of Works), No 2, Moscow, Atomizdat, 1970, pp 102-104 (from RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 12A362)

Translation: The paper notes that during evaluation of electron linear accelerators with increased requirements, an analytical presentation based on examination of an equation for phase oscillations and the approximate analytical method are unsuitable because of their insufficient precision. It is possible to obtain an improvement of the output parameters if extremal methods of evaluation are used during a choice of the dynamics of the particles in the electron linear accelerator. The problem is considered of a choice of criteria for optimization of the parameters. S.F.

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- 138 -

Acc. Nr:

AA0039649

Abstracting Service:

CHEMICAL ABST.

4-70

Ref. Code:

UK0000

80097m Diolefin hydrocarbons. Aliyev, V. S.; Kasimova, A. P.; Tar, Sarkisov, V. G. (Mamedaliev, Yu. G., Institute of Petrochemical Processes, Academy of Sciences, Azerbaidzhan S.S.R.) Brit. 1,178,475 (Cl. C 07c), 21 Jan 1970, Appl. 03 Mar 1967, 9 pp. Diolefins were prepd. by catalytic dehydrogenation of olefins under adiabatic conditions in the presence of steam, O₂, and a catalyst composed of Fe₂O₃ 20-30, Cr₂O₃ 43-53, ZnO 20-5, and K₂O 1-2%. Thus, a catalyst composed of Fe₂O₃ 24, Cr₂O₃ 50, ZnO 25, and K₂O 1% was charged into a reactor, and an 81.5-2.5% butylene-contg. starting material fed in at 585-600° at 500 l/hr at 10:1 steam-butene molar ratio, or at 800 l/hr at 20:1 ratio. When the catalyst layer was 0.5 m deep and the steam-butene ratio was 20:1, the O₂ (0.5-1:1 molar ratio O-butene) was fed above the catalyst. When the catalyst was 1.0 m G.L.P. and the steam-butene ratio was 10:1, the O₂ was fed above the catalyst and into the catalyst layer at 2 points. This process gave 36-40% butadiene (I) based on cycled butenes, and 82-5% I based on consumed butenes. Isoprene was similarly prepd. from isoamylenes.

BFPN

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REEL/FRAME
19740917

1/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--SEMISYNTHETIC PENICILLINS. III. METHOXY AND
DIALKOXYPHENYLBENZYL PENICILLINS -U-
AUTHOR--(05)--HNDZHOYAN, A.L., TSINKER, M.G., MKRTCHYAN, E.S., TERZAKHARYAN,
YU.Z., DGANYAN, SH.G.
COUNTRY OF INFO--USSR

SOURCE--KHIM.-FARM. ZH. 1970, 4(3), 5-10

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PENICILLIN, BENZENE DERIVATIVE, CHLORIDE, BACTERICIDE,
MOLECULAR STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1357

STEP NO--UK/0450/70/004/003/0005/0010

CIRC ACCESSION NO--AP0125005

UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0125005

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MONO AND DISUBSTITUTED BENZOYL CHLORIDES (0.02 MOLE) WERE TREATED WITH 0.02 MOLE 6,AMINOPENICILLANIC ACID (I) TO YIELD 10 II (R PRIME1 EQUALS H OR O, M, OR P-OME; R PRIME2 EQUALS H, OR P-ALKOXY; N EQUALS O). CONDENSATION OF I WITH MONO AND DISUBSTITUTED PHENACYL CHLORIDES GAVE 9 II (R PRIME1 EQUALS G, M, OR P-MEO; R PRIME2 EQUALS H OR P-ALKOXY; N EQUALS I). AN ANTIBACTERIAL ACTIVITY SPECTRUM OF II IS GIVEN. FACILITY: INST. TONK. ORG. KHIM., EREVAN, USSR.

UNCLASSIFIED

Acc. Nr: AF0037239

T

Ref. Code: UR 0301

PRIMARY SOURCE: Voprosy Meditsinskoy Khimii, 1970, Vol 16,
Nr 1, pp 51-58

ACTIVITIES OF HEXOKINASES AND DEHYDROGENASES OF PENTOSE-
PHOSPHATE CYCLE IN TRANSPLANTED HEPATOMAS OF MICE

Il'in, V. S.; Teras, L. E.; Kil'dema, L. A.; Birk, R. V.;
Pyldvere, E. I.

The Department of Biochemistry, Institute of Experimental Medicine USSR Academy
of Medical Sciences, Leningrad. The Department of Biochemistry, Institute of Experimental
and Clinical Medicine Estonian SSR Ministry of Health, Tallinn

Activities of hexokinase, glucokinase and fructokinase, and dehydrogenases of glucose-6-phosphate and 6-phosphogluconate in cytostructures of slowly-growing (hepatoma 48 and 46) and rapidly-growing (hepatoma 22) transplanted hepatomas of C₃HA mice were studied. Specific activity of hexokinase is significantly elevated in soluble as well as in mitochondrial fractions of all hepatomas studied. The specific activity of glucokinase in soluble fraction of slowly-growing hepatomas was more than in the

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REEL/FRAME
19730164

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control. This may be connected with substantial decrease in protein content in this fraction of hepatomas. The specific activity of hepatomas glucokinase in mitochondria from hepatomas 48 and 46 was significantly lower than in the control, and does not developed in the tissue of rapidly-growing hepatomas. The specific activity of fructokinase in soluble fraction and mitochondria from slowly-growing hepatomas was slightly less than in the control. The activity of fructokinase in mitochondria of rapidly-growing hepatomas has not been noted. The specific activity of glucose-6-phosphate and 6-phosphogluconate dehydrogenases is sharply increased in soluble fraction of both slowly-growing and rapidly-growing hepatomas.

D.M.

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19730165

USSR

UDC 541.182.2/3

YAVORSKIY, I. A., TEREBENIN, A. N., and BYKOV, A. P., Institute of Physical
Chemical Principles of the Processing of Raw Mineral Material, Novosibirsk

"Precipitation of Aerosols in a Medium Supersaturated With Water Vapor"

Novosibirsk, Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR, No 8 (203),
Jun 72, pp 86-92

Abstract: Highly dispersed aerosols may be precipitated very effectively out of the gaseous phase by cooling the dusty gasses saturated with water vapor in a fine gage nozzle. The effectiveness of the aerosol precipitation on the condensation-diffusion filter depends on the specific quantity of the condensing moisture, velocity of the gas, the type, width and height of the condenser, nozzle channels and on the initial dust content of the gas. The laminated nozzle appears to be the most reasonable type of nozzle for the condenser. The precipitation of aerosol particles and drops in a condensation-diffusion nozzle takes place principally on account of the diffusion forces.

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1/2 023 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--POROSITY IN GLASS FIBER REINFORCED PLASTICS -U-
AUTHOR--TEREBENIN, B.N. T
COUNTRY OF INFO--USSR
SOURCE--PLAST. MASSY 1970, (6), 56-8
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--POROSITY GLASS FIBER, REINFORCED PLASTIC, POLYESTER RESIN,
LAMINATED PLASTIC, MECHANICAL STRENGTH
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/0931 STEP NO--UR/0191/70/000/006/0056/0058
CIRC. ACCESSION NO--AP0134660
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134660

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE VOL. OR PORES (CAVITIES) WAS
DETD. IN GLASS COLTH LAMINATED IMPREGNATED WITH POLYESTER RESIN AND
CURED UNDER COMPRESSION. THE INCREASE OF THE COMPRESSION FROM 0 TO 20
KG-CM PRIME2 DECREASED THE PORE VOL. FROM SIMILAR TO 24 TO SIMILAR TO
3PERCENT. THE POROSITY DECREASED WHEN THE BINDER CLOTH RATIO WAS
INCREASED. THE DECREASE OF THE LAMINATES POROSITY INVARIABLY INCREASED
THEIR MECH. STRENGTH.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--FISSION PROCESSES AND NONSTATIONARITY OF SYSTEMS OF GALAXIES -U-
AUTHOR--(02)-TEREBIZH, V.YU., KARACHENTSEV, I.D.
COUNTRY OF INFO--USSR
SOURCE--SOBESHCHENIYA BYURAKANSKOY OBSERVATORII AKADEMIYA NAUK ARMYANSKOY
SSR, 1970, NR 41, PP 99-130
DATE PUBLISHED--70

SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS

TOPIC TAGS--GALAXY, NUCLEUS, STELLAR EVOLUTION, STELLAR SYSTEM,
FISSIONABLE MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/0079

STEP NO--UR/2620/70/000/041/0099/0130

CIRC ACCESSION NO--AP0114475

UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0114475

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

ABSTRACT. THE ROLE OF THE FISSION OF GALACTIC NUCLEI IN A DYNAMICAL EVOLUTION OF SYSTEMS OF GALAXIES IS INVESTIGATED. AS A FIRST STEP, THE REPRODUCTION MODEL DESCRIBED BY A POINT BRANCHING STOCHASTIC PROCESSES IS STUDIED. A RIGOROUS SOLUTION OF THE PROBLEM IS OBTAINED AND A NUMBER OF CONSEQUENCES ARE COMPARED WITH OBSERVATIONAL DATA. THE EXISTENCE OF NON STATIONARITY OF SYSTEMS OF GALAXIES PROCESSING A POSITIVE TOTAL ENERGY IS NATURALLY EXPLAINED IN THE FRAMEWORK OF THE MODEL SUGGESTED. IT IS SHOWN THAT THE CALCULATED CHARACTERISTICS OF SYSTEMS OF GALAXIES SUCH AS THE RADIUS, THE DENSITY OF POPULATION, THE VELOCITY DISPERSION, QUOTA OF CROWDED DOUBLE GALAXIES AND SOME OTHERS RECONCILE WITH OBSERVATIONAL ONES.

UNCLASSIFIED

1/2 017
UNCLASSIFIED
PROCESSING DATE--09OCT70
TITLE--THE IONISATION IN MOVING ENVELOPES OF LARGE OPTICAL THICKNESS -U-
AUTHOR--TEREBIZH, V.YU.
COUNTRY OF INFO--USSR
SOURCE--SOGBSHCHENIYA BYURAKANSKOY OBSERVATORII AKADEMIYA NAUK ARMYANSKOY
SSR, 1970, NR 41, PP 80-90
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, ASTRONOMY, ASTROPHYSICS
TOPIC TAGS--IONIZATION, STAR, ATOM, CONTINUM MECHANICS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAHE--1994/0078
STEP NO--UR/2620/70/000/041/0080/0090
CIRC ACCESSION NO--AP0114474
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0114474

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE QUESTION OF THE DEGREE OF
IONISATION IN THE MOVING STAR'S ENVELOPES, OPAQUE FOR THE FREQUENCIES OF
SUBORDINATE CONTINUUMS, IS STUDIED. FOR THIS PURPOSE THE DIFFUSION OF
THE RADIATION IN A MEDIUM, CONSISTING OF ATOMS HAVING THREE LEVELS, THE
THIRD LEVEL CORRESPONDING TO THE IONISED STATE, IS CONSIDERED. THE
MOVEMENT OF THE MEDIUM IS TAKEN INTO ACCOUNT BY APPLYING THE CONDITION
GIVEN BY V. V. SOBOLEV (2). THE SOLUTION OF THE PROBLEM IS OBTAINED
UNDER THE ASSUMPTION THAT THE STIMULATED EMISSION AND TRANSITIONS,
CAUSED BY ELECTRON ENCOUNTERS, MAY BE NEGLECTED.

UNCLASSIFIED

172 026 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--INCREASING THE RESISTANCE OF CARBON STEEL WELDS TO CORROSION
CRACKING ON REDUCING THE RESIDUAL WELDING STRESSES BY WORKING -U-
AUTHOR--(05)-ZYUBRIK, A.I., VASILENKO, I.I., TEREKH, O.I., DIKY, I.I.,
KARPENKO, G.V.
COUNTRY OF INFO--USSR
SOURCE--FIZ.-KHIM. MEKHAN. MAT., 1970, 6, (2), 42-45
DATE PUBLISHED-----70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATERIALS
TOPIC TAGS--CORROSION CRACKING, CARBON STEEL, STEEL WELDING, RESIDUAL
STRESS, ELECTROCHEMICAL PROPERTY, PLASTIC DEFORMATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/0216 STEP NO--UR/0369/T0/006/002/0042/0045
CIRC ACCESSION NO--AP0129472
UNCLASSIFIED

212 026

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0129472

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF PLASTIC DEFORMATION (WORKING) ON (I) THE RESIDUAL STRESSES ARISING IN THE NEIGHBOURHOOD OF WELDS IN C STEEL PARTS, (II) THE ELECTROCHEMICAL PROPERTIES OF THE WELD METAL, AND (III) THE RESISTANCE OF THE WHOLE TO CORROSION CRACKING WAS STUDIED. THERE WAS A SHARP FALL IN RESIDUAL STRESSES ON SUBJECTING TO 1-2PERCENT DEFORMATION; THE ELECTROCHEMICAL HETEROGENEITY OF THE METAL ALSO DIMINISHED, AND THE RESISTANCE OF THE WELDS TO CORROSION CRACKING IN BOILING ALKALI AND NITRATE SOLUTIONS INCREASED SUBSTANTIALLY.

UNCLASSIFIED

1/2 012
UNCLASSIFIED
TITLE—DEHYDROGENATION OF ETHANOL TO ACETALDEHYDE ON A SKELETAL COPPER
CATALYST—U—
PROCESSING DATE—30OCT70
AUTHOR—(03)—VUKELSON, I.I., TEREKHIN, R.M., KVASHNINA, S.P.
COUNTRY OF INFO—USSR
SOURCE—KHIM. PROM. (MOSCOW) 1970, 46(2), 83-7
DATE PUBLISHED—70
SUBJECT AREAS—CHEMISTRY
TOPIC TAGS—CATALYTIC DEHYDROGENATION, ETHANOL, ALDEHYDE, COPPER, CATALYST
REGENERATION
CONTROL MARKING—NO RESTRICTIONS
DOCUMENT CLASS—UNCLASSIFIED
PROXY REEL/FRAME—2000/0817
STEP NO—UR/0064/70/046/002/0083/0087
CIRC ACCESSION NO—AP0124484
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124484

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A CATALYST FOR THE DEHYDROGENATION OF ETOH TO ACH WAS PREPD. BY QUENCHIN A CU AL ALLOY CONTG. 56.5PERCENT CU AND LEACHING THE AL WITH 10PERCENT NaOH AT 15-80DEGREES. THE CATALYST HAD SP. SURFACE 27 M PRIME2-G, AND THE RATE CONST. OVER IT WAS 0.41 AND 2.04 MIN PRIME1 NEGATIVE AT 190 AND 250DEGREES, RESP. OVER THIS CATALYST, THE REACTION WAS MORE SELECTIVE THAN ONCOM. CATALYST (CU ON DIATOMITE), I.E., THE DEGREE OF CONVERSION OF ETOH TO ETOAC DID NOT EXCEED 10-12PERCENT AND THE CONC. OF ACH IN THE PRODUCT (AT 210-70DEGREES 6 VOL-HR) WAS 21.2PERCENT, COMPARED WITH 18.6PERCENT ON THE COM. CATALYST. THE SERVICE LIFE OF THE CATALYST WAS GREATER THAN OR EQUAL TO 700 HR, AND IT COULD BE REGENERATED BY TREATMENT WITH ALK. SOLN.

UNCLASSIFIED

USSR

UDC 629.7.036.3:662.75

LITVINOV, A. A., TEREKHIN, V. I., NEKIPELOV, YU. G.

"Laboratory Instruments for Studying the Wear Resistance of Construction Steel under the Conditions of Lubrication with Aviation Fuel"

V sb. Kontaktno-gidrodinamich. teoriya smazki i yeye prakt. primeneniye v tekhn (Contact-Hydrodynamic Theory of Lubrication and Its Practical Application in Engineering--collection of works), Kubyshev, 1972, pp 18-19 (from RZh-Aviatsionnyye i raketnyy dvigateli, otdel'nyy vypusk, No 11, Nov 72, Abstract No 11.34.88)

Translation: It is reported that in order to establish causes for the difference in aviation fuels with respect to the antiwear properties and also to study the mechanism of wear in fuel environments, laboratory instruments have been built which simulate the conditions of operation of the working members of fuel system units. The instruments permit studies to be made under a broad range of external conditions (mutual displacement rate, load, temperature). The small amount of fuel required to perform the experiment permits a study to be made of the effect of the chemical composition of the fuel on the antiwear properties. The instruments built and a number of studies which have been made permit the development of measures to increase the service life and operating reliability of aircraft fuel system units.

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1/2 019
UNCLASSIFIED
TITLE--THE PROBLEM OF NEUROLEUCOSIS -U- PROCESSING DATE--30OCT70
AUTHOR--(03)--RYNSKAYA, L.M., BALIKHINA, G.D., TEREKHIN, V.N.
COUNTRY OF INFO--USSR
SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR. 6, PP 56-60
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--LEUKEMIA, ENCEPHALITIS, ANTINEOPLASTIC DRUG
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3002/1926 STEP NO--UR/0504/70/042/006/0056/0060
CIRC ACCESSION NO--AP0129275
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129275

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

ABSTRACT. THE AUTHORS DESCRIBED 10 CASES OF NEUROLEUCOSIS OCCURRING IN PATIENTS WITH VARIOUS MORPHOLOGICAL VARIANTS OF ACUTE LEUKEMIA. IN 7 CASES SYMPTOMATOLOGY OF LEUKEMIC MENINGOENCEPHALITIS TOOK PLACE, IN ONE PATIENT, AFFECTION OF CAUDAE EQUINAE, AND IN 2, SPINAL AFFECTION WITH THE INFERIOR PARAPLEGIA AND A DISTURBED FUNCTION OF THE PELVIC ORGANS. ALL THE PATIENTS WERE TREATED WITH INTRALUMBAL INTRODUCTION OF METHOTREXATE. THERAPY PROVED TO BE EFFECTIVE IN FRESH CASES AND AT RELATIVELY EARLY STAGES OF ACUTE LEUKEMIA. THERAPY OF NEUROLEUCOSIS RELAPSES HAS A SMALL VISTA.

TREATMENT OF ACUTE LEUKEMIA AT THE TERMINAL STAGE IS COMPLETELY INEFFECTIVE. FACILITY: GRUPPA AKAD. AMN SSSR PROF. I. A. KASSIRSKOGO, TSENTRAL'NAYA KLINICHESKAYA BOL'NITSA NO. 2 MINISTERSTVA PUTY SOOBSHCHENIYA, MOSKVA.

UNCLASSIFIED

USSR

UDC: 550.380:621.317.444

TEREKHIN, Yu. V., PROSTUN, O. A., POLYAKOV, V. V., KROVOTYNTSEV, V. A.

"Automated Marine Proton Magnetometer APM-1"

Mor. Gidrofiz. Issled. [Marine Hydrophysics Studies -- Collection of Works], No 1(57), Sevastopol', 1972, pp 106-114 (Translated from Referativnyy Zhurnal Metrologiya i Izmeritel'naya Tekhnika, No 4, 1973, Abstract No 4.32.1336).

Translation: A description is presented of a marine automated proton magnetometer, the APM-1, developed at the Marine Hydrophysics Institute, Academy of Sciences, UkSSR, and tested in the 24th cruise of the research vessel *Mikhail Lomonosov*, as well as the second cruise of the research vessel *Akademic Vernadskiy*. Results are presented from studies of various types of sensors and selection of the optimal version of a sensor of several possible versions. The basic units in the devices are described, and results of determination of deviation, convergence of indications and metrological tests are presented.

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USSR

TEREKHINA, A. Yu.

"Problem of Loading of Production and Distribution of Products under Deficit Conditions"

Aktual'n. Vopr. Tekhn. Kibernetiki [Pressing Problems of Engineering Cybernetics -- Collection of Works], Moscow, Nauka Press, 1972, pp 175-179
(Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V608, by the author).

Translation: Models of the distribution of products are studied under conditions when it is impossible to satisfy all consumers, without going beyond the production plans. A multiple-product problem of distribution with interchangeable demand is stated. A procedure is suggested for finding a plan (or set of plans) preferred by the entire group of producers and consumers as a whole.

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UNCLASSIFIED

PROCESSING DATE--13NOV70
-U-

TITLE--ADVANTAGES OF FREEZE DRYING IN HISTOCHEMICAL STUDIES

AUTHOR--(03)-SHCHEPETKIN, V.A., LEVAKOVSKAYA, A.I., TEREKHINA, L.YA.

COUNTRY OF INFO--USSR

SOURCE--ARKH. ANAT., GISTOL. EMBRIOL. 1970, 58(2), 89-91

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--FREEZE DRYING, HISTOCHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0234

STEP NO--UR/9076/70/058/002/0089/0091

CIRC ACCESSION NO--AP0134039

UNCLASSIFIED

2/2 012
CIRC ACCESSION NO--AP0134039 UNCLASSIFIED PROCESSING DATE--13NOV70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SIMPLE FREEZING DRYING APP. WAS
DESCRIBED. THE APP. HAD WHOLE GLASS CONSTRUCTION AND USED LIQ. N AS
COOLING MEDIUM. FACILITY: SVERDLOVSK. GOS. MED. INST.,
SVERDLOVSK. USSR.

UNCLASSIFIED

1/2 019

UNCLASSIFIED

PROCESSING DATE--18SEP70

TITLE--COMPARATIVE CHARACTERISTICS OF DIFCO TRYPSIN AND CHIMOP SIN
STUDIES WITH TISSUE CULTURES -U-

AUTHOR-(03)-TEREKHINA, N.K., LYABINA, L.M., CHERENKOVSKAYA, I.A.

COUNTRY OF INFO--USSR

SOURCE--VOPROSY VIRUSOLOGII, 1970, NR11, PP 120-123

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TISSUE CULTURE, TRYPSIN, DRUG TESTING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0066

STEP NO--UR/0402/70/000/001/0120/0123

CIRC ACCESSION NO--AP0103746

UNCLASSIFIED

2/2 019
CIRG ACCESSION NO--AP0103746
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--18SEP70

ABSTRACT. RESULTS OF PARALLEL STUDY OF THE EFFECT OF TRYPSIN OF DIFCO COMPANY AND OF NATIONAL DRUG CHIMOPHSIN DEMONSTRATED THE CELLS OBTAINED BY TREATMENT WITH CHIMOPHSIN TO BE OF THE SAME QUALITY AND CHARACTERISTICS AS THOSE OBTAINED BY TREATMENT WITH DIFCO TRYPSIN. EXPERIMENTS WERE CARRIED OUT WITH PRIMARILY TRYPSINIZED CHICK EMBRYO FIBROBLASTS, HUMAN EMBRYO SKIN MUSCLE TISSUE, HUMAN EMBRYO KIDNEY CELLS AND WITH CONTINUOUS LINES OF AD, GRK, BHK. THUS, THE NATIONAL PREPARATION OF CHIMOPHSIN MAY BE INTRODUCED INTO PRACTICE FOR PREPARATION OF PRIMARY AND CONTINUOUS CELL LINES.

UNCLASSIFIED

Acc. Nr.: AP0029426

Ref. Code: UR 0297

PRIMARY SOURCE: Antibiotiki, 1970, Vol 15, Nr 1, PP 34-37

DEVELOPMENT OF MULTIPLE DRUG RESISTANCE IN BACTERIA REPEATEDLY TREATED WITH TETRACYCLINE

M. F. Khanina, V. V. Potapov, A. A. Terekhova

N. F. Gamaleya Institute for Epidemiology and Microbiology, Academy of Medical Sciences of the USSR, Moscow

On passages to media containing increasing concentrations of tetracycline the strains of *E. coli* acquired higher resistance levels to tetracycline and at the same time became resistant to chloramphenicol, streptomycin, penicillin. Other properties, such as requirements in growth factors, morphology, multiplication rate also changed in most of the polyresistant mutants studied. It is supposed that decrease in sensitivity to other drugs in tetracycline resistant mutants was associated with impaired transport of substances inside the cell.

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REEL/FRAME

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USSR

UDC: 621.362.2(088.8)

TEREKOV, A. Ya., SILIN, L. L., CHERKASSKIY, A. Kh.

"An Installation for Durability Testing of Thermocouples"

USSR Author's Certificate No 252436, filed 6 Aug 68, published 19 Mar 70
(from RZh-Elektrotehnika i Energetika, No 10, Oct 70, Abstract No 10A164 P)

Translation: An installation is proposed for durability testing of thermocouples. The unit contains a hermetically sealed housing which accommodates two heaters for the cold and hot ends of the specimen to be tested, electrically insulated thermal junctions between the specimen and the heaters, measurement thermocouples, and probes. To increase the operational reliability of the installation, flexible heat contact plates based on steatite with the addition of 1-20 percent molybdenum are used as the electrically insulated thermal junctions.

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И Е К Е К Н О В , А . А .

WATER RESOURCES

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13 Я н в 7 5

①

Water Supply

INSTITUTE PLANS SEWAGE TREATMENT FOR VOLGA, URAL RIVER BASINS

Article by A.A. Tereshkov, director, State Republic Institute for the Planning and Surveying of Municipal Water Supply and Sewer Systems, RSFSR Ministry of Housing and Municipal Supply and Vice: "A Noble Purpose -- Protection of Russia's Rivers," Moscow, Zhilishchnoye i Kommunalnoye Khoz. No. 2, 1973, p. 117.

Development of water supply to populated areas and sewage treatment are one of the main tasks of the Communist Party and Soviet Government daily, uniting concern for the health and welfare of the people.

During the years of Soviet rule water supply and sewage treatment has transformed into a major national economic sector. Soviet scientists and engineers have designed new systems, structures, equipment, instruments, and computational methods for water main facilities, and they have set precedents in the establishment of many modern methods for planning and siting water main facilities and in the creation of new designs for facilities and equipment.

The Directives of the 24th CPSU Congress foresee expansion of public services and amenities for populated centers, improvement of municipal services, and intensification of work to improve the sanitary conditions of populated centers and the environment.

In the beginning of 1972 the CPSU Central Committee and the USSR Council of Ministers adopted the decree "On Measures to Prevent Pollution of Volga and Ural River Basins by Untreated Sewage." This document sets the goal of terminating discharge of untreated municipal and domestic sewage in the principal cities along the Volga and Ural by 1980.

USSR

UDC 621.383.29.032.11

ANDREYEVA, L.I., KAYDALOV, S.A., STEPANOV, B.M., ~~TEREKHOV, B.I.~~ TEREKHOV, B.I.

"Use Of Laser For Study Of Pulse Characteristics of Coaxial Photocells"

V sb. Izcol'z. optich.kvant.generatorov v sovrem. tekhn. i med. Ch. 2-3 (Use Of Lasers In Contemporary Technology And Medicine. Parts 1-2--Collection Of Works), Len., 1971, pp 33-38 (from RZh:Elektronika i yeye primeneniye), No 2, Feb 72, Abs. 2A197)

Translation: The technique is described as well as the results of measurements of the pulse characteristics of coaxial photoelements (FEK), the FEK-COKP, FEK-14KP, and FEK-15AM, with the aid of a laser operating in a regime of synchronization of modes at a wavelength of 1.06 micrometer. With the aid of an optical divider, one and the same signal was directed to a number of FEK and to the input of a Type FER-2 electrooptical photochronograph and a Type TPI-1 calorimeter. The results of the oscillography of the electrical pulses from the output of the FEK were compared with the photochronograms obtained with identical sweep duration $\sim 30 \pm 50$ nsec. An analysis is made of the time resolution of the channel of oscillographic registration of pulses. 2 ill. 10 ref. N.S.

1/1

USSR

UDC 621.316.721 (088.8)

TEREKHOV, G.I.

"Device For Matching Of Linear Voltages With Series Operation Of Two Constant-Current Regulators"

USSR Author's Certificate No 302838, filed 28 Nov 69, published 30 June 71
(from RZh:Elektronika i yeye primeneniye, No 2, Feb 72, Abstract No 2B481P)

Translation: In the technique of remote power supply of underwater main lines of communication, power supply of successive amplifiers by constant current regulators with two routings is used. In order to match the voltage at the output of both current regulators, it is proposed to install, in parallel with the output terminals of the regulator, networks of a series-connected variable resistor, silicon stabilitron, and a semiconductor diode, which are adjusted during tuning with the aid of the variable resistor to a specific part ($\sim 10\%$) of the current load of the regulator. With a change of voltage at the regulator output because of a difference of internal resistances, the current of the network is changed which must lead to a change of the regulator current. However, the regulator feedback circuit uses up the magnitude of the current because of such change of the internal resistance of one of the regulators during which the network current and consequently the output voltage remain unchanged. 1 ill. S.D.

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USSR

UDC 669.245.018.41

TEREKHOV, K. I.

"Basic Prerequisites and Characteristic Features of Alloying Heat-Resistant Disk Alloys Based on Nickel"

V sb Legirovaniye i svoystva zharoprochn. splavov (Alloying and Properties of Heat-Resistant Alloys -- collection of works), Moscow, Nauka Press, 1971, pp 97-101 (from RZh-Metallurgiya, No 4, Apr 72, Abstract 4I731).

Translation: Considering the characteristic features of alloying heat-resistant disk alloys, a new original Soviet heat-resistant alloy EI698, without Co and W, equivalent with respect to characteristics to the best foreign alloys containing 14-20% Co, was developed and introduced. The chemical composition of the EI 437BUVD alloy and its heat treatment conditions were improved, permitting an increase in the level of high-temperature strength of the alloy to the values which nimonic-90 with 18% Co has. One illustration and three tables.

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USSR

UDC: 538.4

AL'-NASAN, I. M. and TEREKHOV, L. P.

"Radial Magnetohydrodynamic Bearing With Floating Collar"

Riga, Magnitnaya gidrodinamika, No 1, 1973, pp 129-134

Abstract: The steady-state problem of lubricating a cylindrical magnetohydrodynamic bushing of infinite length with a freely floating collar is considered in this paper. The effect of an ideally conducting collar on the basic characteristics of the MHD bushing is investigated, with the inertial terms neglected, in the equations of motion of the lubricant, with a Reynolds number much less than unity, and in an induced magnetic field when the magnetic Reynolds number is less than unity. The lubricant is assumed incompressible, and the gaps in the bushing as well as the collar thickness are small compared to the radius of the shaft. Consideration is given to the case in which a constant difference in electrical potential is applied to the ideally conducting surfaces of the bearing and pin. It is found that an external magnetic field accelerates the rotation of the collar floating freely in the lubricated gap, that the MHD bushing and collar system is better than the bushing with neutral lubrication, and that the operation

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USSR

UDC: 538.4

AL'-NASAN, I. M., et al, Magnitnaya gidrodinamika, No 1, 1973, pp
129-134

mode in which the average radius of the collar is equal to half
the sum of the pin and bearing radii yields the highest increase
in lifting force for the MHD bushing with floating collar.

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USSR

UDC: 519.281

TEREKHOV, L. V., SHVARTSER, V. Ya.

"Determining the Variance of an Entire Aggregate From the Variance of Group Averages"

Sb. nauchn. tr. N.-i. i proyekt. in-t po obogashch. i aglomer. rud chern. met. (Collected Scientific Works of the Scientific Research and Design Institute on Enrichment and Agglomeration of Ferrous Metal Ores), 1970, vyp. 12, pp 231-233 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V219)

Translation: An approximate formula is proposed for determining the variance of a general aggregate from the variance of group averages in samples of identical volume. Conditions of applicability of this formula are indicated. Ya. Shor.

1/1

UDC 537.374

USSR

SHEVCHENKO, YU. N., TEREKHOV, R. G.

"Use of Flow Theory in Studying Thermally Stressed States of Discs"

V sb. Teplovyye napryazh. v elementakh konstruktsiy (Thermal Stresses in Structural Members--collection of works), Vyp. 8, Kiev, "Nauk. dumka", 1969, pp 196-207 (from RZh-Mekhanika, No 3, March 1970, Abstract No 3V370)

Translation: Based on the flow theory associated with the von Mises creep condition, a study has been made of the elastoplastic stressed state of a variable-thickness disc present under conditions of nonuniform heating and subjected to centrifugal forces. A comparison is given between the components of deformation obtained from the flow theory with their corresponding values found as a result of experimental studies of disc. Bibliography: 6 entries. Resume

1/1

USSR

VERSHTIGORA, A. Ye., DYACHENKO, S. S., LISUNKINA, I. K., MORGUNOV, I. N.,
NOGACHEVSKIY, I. I., TEREKHOV, S. N., CHERNUSHENKO, Ye. F., and YAGUD, S. L.,
Editors, Ministry of Health, Ukrainian SSR

Immunologiya. Respublikanskiy mezhvedomstvennyy sbornik (Immunology.
Republic Interdepartmental Collection), No 5, "Zdorov'ya," Kiev, 1972

Translation: Annotation: Articles included in the collection deal with the
most pressing problems of theoretical and practical immunology, viz., mechanism
of the formation of antibodies and immunological reactivity, allergy and clinical
and experimental immunopathology, specific prophylaxis, and reactogenicity
of vaccines and postvaccinal complications. Works aimed at devising methods
of immunological investigations help to solve problems of modern immunology.

The previous four issues of this collection were published under the title of
"Voprosy Immunologii" (Problems of Immunology).

The collection is of interest to scientific workers, practitioners of various
specialties, and to senior students of medical institutes.

191 pages. 52 Russian articles with Russian abstracts.
1/10

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USSR

VERSHIGORA, A. Ye., et al., Immunologiya. Respublikanskiy mezhvedomstvennyy sbornik (Immunology. Republic Interdepartmental Collection), No 5, "Zdorov'ya," Kiev, 1972

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