"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

USSR/General Biology - General Histology. B-3

Abs Jour : Ref Zhur - Biol., No 15, 1958, 66708

Author : Rzhevutskaya, O.P.

Inst : Stavropol'sk. s-kh. in-ut

Title : The Histological Nature of Womb Epithelium and Its Morphology Under Experimental Conditions.

Orig Pub :

Abstract : Sections of the mucous membrane of a rabbits womb were transplanted subcutaneously according to Lasarenko's method. After a short period of depression at the end of the first day, the epithelium starts to grow as a single layer of tissue on the surface of the section. On the fifth to sixth day, the intensively prolifering epithelium on the surface of the activated connective tissue becomes multi-layered in spots without anisomorphism, and begins

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RZHEVUTSKAYA, O.P.

Amitotic division of neural cell in cerebrospinal ganglia in dog. Doklady Akad. nauk SSSR 87 no. 3:483-484 21 Nov 1952. (CLML 23:5)

1. Presented by Academician A. I. Abrikosov 16 September 1952. 2. Stavropol' Agricultural Institute.

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1. RZHEVUTSKAYA, O.P.

2. USSR (600)

4. Spinal Cord

7. Amitotic division of nerve cells in the spinal cord ganglia of dogs. Dokl. AN SSSR 87. no. 3. 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

ZUBKOV, Anatoliy Ivanovich, kand.ekonom.nauk; RZHEVUSKAYA, D.M., red.; ATROSHCHENKO, L.Ye., tekhn.red.

[Prospects for the development of the industrial centers of Eastern Siberia] Perspektivy razvitiia promyshlennykh uzlov Vostochnoi Sibiri. Moskva, Izd-vo "Znanie," 1960. 30 p. (Vsesoiuznoe obshchestvo po rasprostraneniiu politicheskikh i nauchnykh znanii. Ser.3, Ekonomika, no.21). (MIRA 13:7)
(Siberia, Eastern--Industries)
(Siberia, Eastern--Natural resources)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

ANDREYEV, B.I.; VORONTSOVA, A.N.; DANILOV, A.D.; KISTANOV, V.V.; KOSTENNIKOV, V.M.; KUSHNER, A.I.; LEDOVSKIKH, S.I.; LESNOV, M.F.; MALINOVSKIY, E.P.; MOSHKOVA, N.V.; MUKHIN, G.I.; PASHKEVICH, V.I.; RZHEVUSKAYA, D.M.; SAVCHENKO, N.A.; SKOBEYEV, D.A. [deceased]; LISOV, V.Ye., red.; SAZANOVICH, N.K., red.

[Economic regions of the U.S.S.R.] Ekonomicheskie raiony SSSR. Moskva, Ekonomika, 1965. 589 p. (MIRA 18:6)

1. Moscow. Institut narodnogo khozyaystva. 2. Kafedra ekonomicheskoy geografii Moskovskogo instituta narodnogo khozyaystva im. G.V.Plekhanova (for all except Lisov, Sazanovich).

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28034
S/081/61/000/015/095/139
B104/B110

15.2140

AUTHORS: Bezborodov, M. A., Rzhevuskaya, T. L.

TITLE: Enamels for aluminum on the basis of lithium-containing glasses

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 15, 1961, 371, abstract 15K318 (Sb. nauchn. rabot. In-t obshch. i neorgan. khimii AN BSSR, no. I, 1960, 112-119)

TEXT: The system Li_2O-Na_2O-PbO-SiO_2 in the vitreous state was examined for its suitability as a base material for enamels on aluminum. The glass was synthesized in three sections of the system with 10, 15, and 20 mole% of Na_2O. The coefficient of thermal expansion of the glasses, the chemical stability, and the softening temperature were determined. Glass of the following composition proved to be the best suited (in mole%): Li_2O=5, Na_2O=20, PbO=20, SiO_2=55. The coefficient of thermal expansion was $157 \cdot 10^{-7}$, the loss of weight in the determination of the resistance to

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

BEZBORODOV, M.A.; RZHEVUSKAYA, T.L.

Lithium-lead-silicon glass. Dokl.AN BSSR 3 no.12:488-491 D '59. (MIRA 13:4)

(Glass)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

Rzhevuskaya, T.L.

USSR/Chemical Technology - Chemical Products and Their Application. Ceramics. Glass. Binders. Concrete. H-7

Abs Jour : Referat Zhur - Khimiya, No 1, 1958, 2090

Author : Pevzner E.D., Rzhevuskaya T.L.

Inst : Scientific Research Institute of Building Materials of the Ministry of Building Material Industry, Belorussian SSR.

Title : Isol'-Cement with Peat Ash.

Orig Pub : Sb. nauchn. rabot. N.-i. in-t stroymaterialov M-va prom-sti stroit. materialov BSSR, 1957, No 5, 178-186

Abstract : Isol'-cement (IC) is made by grinding together, in a ball mill or a vibratory mill, quicklime (25-30% on the basis of the weight of the binder) and peat ash. Addition of 3-5% gypsum to the IC increases by 2 times the strength of IC and increases the fluidity of mortars made therefrom.

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POLAND/Theoretical Physics - Quantum Mechanics. B-4

Abs Jour : Ref Zhur - Fizika, No 4, 1957, 8415

Author : Krulikovskiy, V., Rzhevuskiy, Ya.

Inst : Institute of Physics, Polish Academy of Sciences, Warsaw and Wroclaw, Poland.

Title : Concerning the Equation for the Selected Component of the Vector of State.

Orig Pub : Byul. Pol'skoy AN, 1956, Otd. 3, 4, No 1, 19-28

Abstract : For the selected component of the vector of state of an arbitrary quantum system, consisting of several parts that interact with each other and with a constant external field, the author derives an inhomogeneous integro-differential equation with respect to time. The inhomogeneous portion is determined from the initial conditions. A corresponding stationary equation is obtained and turns out to be nonlinear with respect to the eigenvalues of the energy. It is shown that the integro-differential equation

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POLAND/Theoretical Physics - Quantum Mechanics. B-4

Abs Jour : Ref Zhur - Fizika, No 4, 1957, 8415

is equivalent to the differential equation. If the inhomogeneous portion is equal to zero, the latter coincide with the Schroedinger equation for the complex potential, and the corresponding stationary equation becomes linear relative to the eigenvalues of the energy. The imaginary portion of the potential is due to the instability of the selected state of the system and determines its lifetime.

Card 2/2

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

RZHEZACH, A. [Rezac, A.] (Chekhoslovatskaya Sotsialisticheskaya Sovetskaya Respublika)

Increasing the efficiency of cutting tools by separating their cutting edges. Stan.i instr. 32 no.12:20-24 D '61. (MIRA 14:12)
(Metal-cutting tools)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

S/121/61/000/012/003/007
D040/D112

AUTHOR: Rzhezach, A. (ČSSR) [original spelling: Řezáč]

TITLE: Raising the efficiency of tools by dividing their cutting edges

PERIODICAL: Stanki i instrument, no. 12, 1961, 20-24

TEXT: The article contains a general discussion, including calculations, proving that tools with cutting edges consisting of a series of several teeth, cut more efficiently than tools with uninterrupted cutting edges, and are subject to lower forces and wear. The article gives data on tool tests that confirmed the productivity-raising effect of dividing the cutting edges, and the results of tests made in the metalcutting laboratory of the Chelyabinskiy traktornyy zavod (Chelyabinsk Tractor Plant) concerning the effect of the shape of chip breakers. The tools tested were three types of round broaches (Fig. 5): a conventional broach (a), a broach in which the successive teeth were of equal height but the front tooth was narrower than the following tooth (b and c), and a broach (d) in which the front tooth was

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divided into equal portions, so that the width of the cutting edge equalled the width of the chip breaker; the next tooth had no chip breaker and had the same outer diameter as the first tooth, so that it removed only the metal left after the chip breaker. The latter broach was found to wear least of all. It is pointed out that heat liberation in broaching is most intense at the transition point between the tooth surface and the chip breaker; the angle $\varkappa$ (see Fig. 5) is of primary importance, although the shape of the chip breakers may be different. If the chip breaker is round (Fig. 6, b), $R = \frac{l}{2 \sin \varkappa}$, so that for $\varkappa = 8 \div 45^{\circ}$, $R = (0.7 \div 3.6)l$, and for $\varkappa = 15 \div 25$, the radius $R = (1.2 \div 1.9)l$. It is stated that these regularities apply to tools of any kind; in many tools these regularities are closely approached and the cutting efficiency is high, but the most efficient tools are the so-called "protyazhki peremennogo rezaniya" ("alternating-cutting broaches") of the Chelyabinsk Tractor Plant. It is stated that if the chip breakers are located along the cutting teeth sections, the efficiency is higher; a twist drill with chip breakers (Fig. 7) is shown as an example of this. Such a twist drill permits 25% higher feed at equal torque, compared with conventional twist drills. Conclusions: The cutting efficiency rises

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considerably when the chip is divided by tools with cutting teeth sections. In this connection, the following points must be considered: (1) When a cutting edge is divided into n teeth, the groove between the teeth, or the chip breaker width, has to exceed the length of the cutting edge n-1 times; (2) any shape of groove between the cutting edges may be used, depending on the technology employed, but the transition between the cutting edge and the groove must not be sudden (the angle α should be within 15-25°, or 8-45° at the most); (3) the relief angle of the chip breaker must be approximately equal to the relief angle of the main cutting edge (or even better, exceed it by 1-2°). There are 8 figures and 4 Soviet-bloc references.

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D040/D112

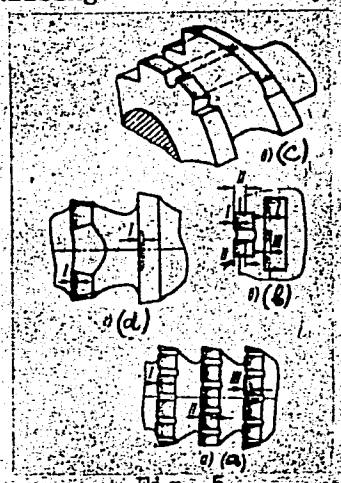

Fig. 5

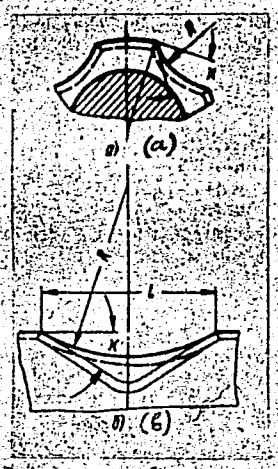

Fig. 6

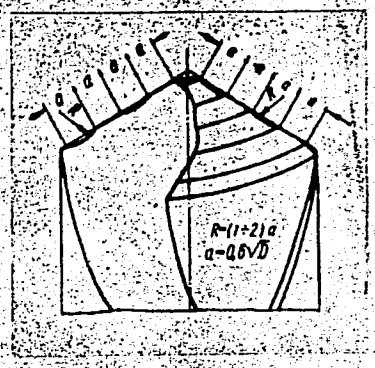

Fig. 7

Fig. 5: Tooth wear in broaches with chip-breakers of different shapes
Fig. 6: Shapes of chip-breakers
Fig. 7: A twist drill with chip breakers on the cutting edges

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

RZHEZACH, Z. [Rezac, Z.]; DITZ, Yu. [Ditz, J.]

Determination of small amounts of arsenic and antimony in germanium dioxide. Zav. lab. 29 no.10:1176-1178 '63. (MIRA 16:12)

1. Nauchno-issledovatel'skiy institut neorganicheskoy khimii, Chekhoslovatskoy Sotsialisticheskoy Respubliki.

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

1008. VITAMIN B_{12} IN DISEASES OF THE OPTIC NERVE (Russian text) - Rzhezak S., Bartoushek V. and Dubansky B. - VESTN.OFTALM. 1958, 4 (28-31)

Various methods of treatment of the optic nerves are evaluated in this paper. In addition to stimulating therapy, the vasodilating drugs, ganglioplegics and neuroplegics, an important role is played by vitamin B_{12} treatment. The authors discuss the mechanism of action of this vitamin, its specific relation to the optic nerve and the results of its administration. A conclusion is drawn that treatment of the optic nerve by vitamin B_{12} presents many advantages.

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

S/048/62/026/001/014/018
B125/B104

AUTHORS: Rzhezanka, I., Frana, Ya., Adam, I., and Peker, L.

TITLE: The rotational nature of the isomeric level of $_{71}Lu^{176*}_{105}$ ($T_{1/2}$ = 3.7 hrs)

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 1, 1962, 127 - 130

TEXT: For the isomer Lu^{176*} with I = 1 it follows from its decay scheme that K = 0, which proves that the isomeric ionization level of $_{71}Lu^{176*}_{105}$ is the rotational level with I = 1 and K = 0, and that the ground state of the band with $I = 0^-$ is higher. The oxide of the isomer Lu^{176*}, obtained by bombarding spectroscopically pure Lu_2O_3 with thermal neutrons (10^{13} neutrons $cm^{-2}sec^{-1}$) was converted to its chloride. The β^--spectrum of Lu^{176*}, which was irradiated in a reactor for 20 hrs, was measured with a resolution of 2%. The electrons were recorded by an anthracene scintillation counter. This was done with particular care in the

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neighborhood of the limiting energy. With a sufficiently strong source, the Curie diagram showed a distinct break in the hard region of the spectrum. The β^--spectrum falls into two components with the limiting energies $E_{\beta_1} = 1314 \pm 8$ and $E_{\beta_2} = 1222 \pm 10$ kev. The relative intensities are $35 \pm 10\%$ and $65 \pm 10\%$. Some lines of the conversion electron spectrum of Lu^{176*} irradiated in a reactor for 3 hrs, which were recorded on an electrolytically prepared sample, correspond to the conversion of the 88-kev gamma transition to the K-, $(L_i + L_{II})$-, L_{III}-, M-, and N-subshells. The relative intensity of the soft component of the β^--spectrum amounts to $I_{\beta_2} = 52 \pm 6\%$. The 0-kev (0^+) and 88-kev (2^+) beta transitions to the Hf^{176} levels, which belong to the same rotational band with $K = 0^+$, have the same multipolarity $L = 1$ because of the spin 1 of the isomer Lu^{176*}. The ratio of reduced probabilities ft for such transitions is expressed by the ratio of the corresponding Clebsch-Gordan coefficients:

$$\frac{(ft)_{2+}}{(ft)_{0+}} = \frac{\langle I_i L K_i K_{f_1} - K_i | I_i K_i I_{f_1} K_{f_1} \rangle^2}{\langle I_i L K_i K_{f_2} - K_i | I_i K_i I_{f_2} K_{f_2} \rangle^2},$$

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where K_{f_1} and K_{f_2} denote the values of K for the two final states. For $K_i = 0$ one finds $(ft)_{2^+}/(ft)_{0^+} = 0.5$, and for $K_i = 1$ one has $(ft)_{2^+}/(ft)_{0^+} = 2$. From the energies and intensities of the two beta transitions obtained here, it finally follows that $(ft)_{2^+}/(ft)_{0^+} \sim 0.56$. The isomeric level of $_{71}Lu^{176*}_{105}$ with I = 1 thus has the value K = 0, and L. K. Peker's hypothesis (Doklad na X soveshchanii po yadernoy spektroskopii (Report at the 10th Congress on Nuclear Spectroscopy), Moscow, January 1960, on the rotational nature of this isomeric level is confirmed. Zd. Playner from the Institute of Nuclear Research of the Czechoslovakian AS is thanked for making possible measurements with a double-focusing spectrometer. There are 2 figures and 14 references: 4 Soviet-bloc and 10 non-Soviet-bloc. The four most recent references to English-language publications read as follows: White M. B., Alpert S. S., Lipworth E., Bull. Amer. Phys. Soc., 5, 273 (1960); Harmatz B., Handley T. H., Mihelich J. W., Phys. Rev., 119, 1345 (1960); Chupp E. L., Dumond J. W. M., Gordon F. J., Jopson R. C., Mark H., Bull. Amer. Phys.

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Soc., 3, 55 (1958); Rose M. E., Internal Conversion Coefficients. Amsterdam, 1958.

ASSOCIATION: Institute of Nuclear Research of the Czechoslovakian AS. Nauchno-issledovatel'skiy fizicheskiy institut Leningradskogo gos. universiteta im. A. A. Zhdanova (Scientific Research Institute of Physics of the Leningrad State University imeni A. A. Zhdanov)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

AUTHORS: Rzhezhabek, A., Svoboda, V., Manyasek, Z.

SOV/76-32-7-40/45

TITLE: The Calculation of the Composition of Copolymers (Raschet sostava sopolimera)

PERIODICAL: Zhurnal fizicheskoy khimii, 1958, Vol 32, Nr 7, pp 1684 - 1685 (USSR)

ABSTRACT: The derivation of the differential equation for the joint polymerization of two monomers makes possible the quantitative elaboration of the experimental material obtained, with the ratio between the momentary concentrations of the monomers $/M_1/$ and $/M_2/$ being obtained by the integration of the equation. S.S.Medvedev et al.(Ref 5) elaborated an integration method in which the corresponding values are obtained by graphical methods. The calculation of the substance balance is the shortest way for the determination of the mean composition of the copolymer; in it the molar proportions of the monomers are used. Proceeding from an equation using the amount of the monomer which in the course of copolymerization converted to the copolymer the authors give an algebraic representation of the

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integral of Skeist as the final formula; thus the use of the graphical solution may be avoided. The equation is especially well suited in the case that the process takes place in extreme concentrations or near azeotropy. The authors give an example by the copolymerization of divinyl acrylonitryl. There are 2 figures, 1 table, and 8 references, 1 of which is Soviet.

ASSOCIATION: Issledovatel'skiy institut sinteticheskogo kauchuka, Chekhoslovakiya, Gotwal'dov (Research Institute for Synthetic Rubber, Czechoslovakia)

SUBMITTED: October 24, 1956

1. Copolymerization--Theory 2. Polymers--Mathematical analysis

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

MILITSYN, Konstantin Nikitich, kandidat tekhnicheskikh nauk; LOVCHIKOV, Basiliy Semenovich, kandidat tkehnicheskikh nauk; SUVOROV, Artur Mikhaylovich, inzhener;OSOKIN, N.Ye., kandidat tekhnicheskikh nauk, retsenzent; PAVLOTSKIY, P.G., inzhener, retsenzent; ARONSHTEYN, N.A., inzhener, retsenzent; NOVIKOV, N.F., inzhener, retsenzent; RZHEZNIKOV, V.S., redaktor; ARKHANGEL'SKAYA, M.S., redaktor izdatel'stva; BEKKER, O.G., tekhnicheskiy redaktor

[Smelting and founding of nonferrous metals and alloys] Plavka i lit'e tsvetnykh metallov i splavov. Pod nauchnoi red. K.N.Militsyna. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1956. 662 p. (MLRA 10:2)

1. Kol'chuginskiy tekhnikum po obrabotke tsvetnykh metallov (for Osokin, Pavlotskiy, Aronshteyn, Novikov)
(Founding) (Smelting)
(Nonferrous metals--Metallurgy)

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5. A.
Sect. B

Machines

621.313.32 : 621.3.013

62. The permeance of the air gap of a synchronous machine. I. Rzhezniczek. Bull. Int. Acad. Tchèque Sci., 48, 51-55 (1947) In Russian.

See two previous abstracts. The graphic method given in the preceding paper for the determination of permeance is lengthy and complicated because it requires the plotting of the magnetic field for each of the magnetic space harmonics in question. The author describes a simpler method for which it is sufficient to plot the field for only the constant magnetic potential (zero space harmonic) and with a knowledge of the cycle of the corresponding permeance, determine the latter for any given space harmonic.

I. McKerrow

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

S.A.
Sect. B

621.313.32 : 621.3.013

61. **The magnetic field and induced stator voltage of a synchronous machine.** I. Rzhevnitsky. *Bull. Int. Acad. Tchèque Sci.*, 48, 29–49 (1947) *In Russian.*

See previous abstract. It is shown that the value of the magnetic induction in any part of the stator is determined by the mutual action of the magnetic potential and the permeance relative to the part considered. A graphic method is given of obtaining the permeance which depends on the determination of the stator magnetic field for the separate harmonics, stationary relative to the poles, of the magnetic potential and its expansion into even harmonics. A very complete mathematical analysis is included.

I. McKerrow

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Machines

S.A.

Sect. 8

621.313.32 : 621.3.013

60. Current flow and magnetic potential in the stator of a synchronous machine. I. Rzhezhichek. *Bull. Int. Acad. Tchèque Sci.*, 47, 99-105 (1946) *In Russian.*

The author observes that for the consideration of power station performance the design and construction of synchronous generators is most important. The determination of magnetic potential and conductivity is vital for the calculation of the machine's fundamental parameters. Formulae are obtained for the resultant magnetic potential by expressing the latter, both for symmetrical and non-symmetrical systems, as a series of space sinusoidals for different pole pitch values, rotating at different speeds relative to stator and rotor. The author resolves each sinusoidal into two components, stationary relative to the poles, determines for them the corresponding stator field curves and combines the latter with the rotating space harmonic of the field. I. McKerrow

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5+

Machines

621.313.32 : 621.3.013

61. **The magnetic field and induced stator voltage of a synchronous machine.** I. RZHEZNOCHEK. *Bull. Int. Acad. Tchèque Sci.*, 48, 29–49 (1947) *In Russian.*

See previous abstract. It is shown that the value of the magnetic induction in any part of the stator is determined by the mutual action of the magnetic potential and the permeance relative to the part considered. A graphic method is given of obtaining the permeance which depends on the determination of the stator magnetic field for the separate harmonics, stationary relative to the poles, of the magnetic potential and its expansion into even harmonics. A very complete mathematical analysis is included.

I. McKERROW

Jan '52

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

5.4

Machines

621.313.32 : 621.3.013

60. **Current flow and magnetic potential in the stator of a synchronous machine.** I. Rzhevskiy. *Bull. Int. Acad. Tchèque Sci.*, 47, 99-105 (1946) *In Russian.*

The author observes that for the consideration of power station performance the design and construction of synchronous generators is most important. The determination of magnetic potential and conductivity is vital for the calculation of the machine's fundamental parameters. Formulae are obtained for the resultant magnetic potential by expressing the latter, both for symmetrical and non-symmetrical systems, as a series of space sinusoidals for different pole pitch values, rotating at different speeds relative to stator and rotor. The author resolves each sinusoidal into two components, stationary relative to the poles, determines for them the corresponding stator field curves and combines the latter with the rotating space harmonic of the field. I. McKerrow

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Machines

621.313.32 : 621.3.013

62. **The permeance of the air gap of a synchronous machine.** I. Rzhevskiy. *Bull. Int. Acad. Technique Sci.*, 40, 51-55 (1947) *In Russian.*

See two previous abstracts. The graphic method given in the preceding paper for the determination of permeance is lengthy and complicated because it requires the plotting of the magnetic field for each of the magnetic space harmonics in question. The author describes a simpler method for which it is sufficient to plot the field for only the constant magnetic potential (zero space harmonic) and with a knowledge of the cycle of the corresponding permeance, determine the latter for any given space harmonic.

I. McKerrow

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M

2

MECHANICAL PROPERTIES AND DIAGRAMS OF MECHANICAL CONDITION OF ANTI FRICTION ALLOYS. V. S. RZHEZNIDOV AND YA. B. FRIDMAN (ZAVOD. LAB. 1946 12 (6), 595-601) (In Russian) The mechanical properties of some anti-friction alloys (Babbitt metal and lead-and tin-lead-bronzes) have been studied in tension, torsion, and compression. Diagrams of deformation and diagrams of mechanical condition have been constructed. It is shown that type of failure, plasticity, and toughness of cast copper-lead, and copper-lead-tin-bronzes depend on the mode of stressing; in tension there is brittle fracture with small plastivity and toughness; in compression failure occurs by shear, and there is appreciable plasticity and toughness; while in torsion failure occurs partly by shear and partly by rupture, and the plasticity and toughness have intermediate values. NA

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

RZHEZNIKOV, M.S.; NEMIROVSKAYA, N.A.

Problem of prostatic sarcoma. Urologiia 24 no.3:57-58 My-Je '59. (MIRA 12:12)

1. Iz bol'nitsy No.29 im. Baumana, Moskva.
(PROSTATE, neoplasms,
sarcoma (Rus))
(SARCOMA, case reports,
prostate (Rus))

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

RZHEZNIKOV, M. S.

USSR/Medicine - Burns Jul 51

"The Treatment of Burns," M. S. Rzheznikov, Krasnoyarsk Kray

"Sov Med" No 7, pp 31, 32

Treatment of burns with potassium permanganate, a tissue coagulant, has proved to be less severe in effect than application of tannin or silver nitrate. In an 8% soln $KMnO_4$ combines an antiseptic and coagulating effect. The application is simple without bad effects on the patient. It can be used on ambulatory as well as bedfast patients.

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1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

Substitutes for tin bronzes in airplane engines. V. S. Rzhernikov and B. L. Slinko. *Avsiaprom yshlennost* 1939, No. 7-8, 43-60.—On the basis of numerous tests recommendations are made for the use of substitutes for Sn bronzes in airplane engines. For conditions of high impact loads and small speeds of slipping Al bronzes are suitable, especially the bronze contg. Al 8-10, Fe 3-4% and the rest Cu. For high speeds of slipping and for medium and high loads (up to 60-80 kg./sq. cm.) the bronze contg. Sn 4-6, Pb 23-26%, and the rest Cu is suggested. For especially high speeds of slipping the bronze contg. 9.5-11.5% Al, 3.5-4.5% Fe, 3.5-4.5% Ni, and the rest Cu is suggested. B. Z. Kamich

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

PORTNOVA, S.L.; REHEZNIKOV, V.M.; ANANCHENKO, S.N.; SHEYNKER, Yu.N.; TORGOV, I.V.

Nuclear magnetic resonance of some D-homosteroids. Dokl. AN SSSR 166 no.1:125-128 Ja '66. (MIRA 19:1)

1. Submitted March 27, 1965.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

RZHEZNIKOV, V.M.; ANANCHENKO, S.N.; ZORGOV, I.V.

Reduction of some D-homosteroids with an aromatic ring A by alkali metals under conditions of Birch's process. Part 1. Khim.prirod.soed. 1:7-15 '65. (MIRA 18:6)

1. Institut khimii prirodnykh soyedineniy AN SSSR i Vsesoyuznyy institut eksperimental'noy endokrinologii Ministerstva zdravookhraneniya SSSR.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

RZHEZNIKOV, V.M.; ANANCHENKO, S.N.; TORGOV, I.V.

Synthesis of some D-homosteriods. Izv.AN SSSR.Otd.khim.nauk no.3:465-470 Mr '62. (MIRA 15:3)

1. Vsesoyuznyy institut eksperimental'noy endokrinologii i Institut khimii prirodnykh soyedineniy AN SSSR.
(Homosteroids)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

ANANCHENKO, S.N.; RZHEZNIKOV, V.M.; LEONOV, V.N.; TORGOV, I.V.

Synthesis of DL-19-nor-D-homotestosterone and its 17a-alkyl homologs. Izv.AN SSSR.Otd.khim.nauk no.10:1913-1914 O '61. (MIRA 14:10)

1. Institut khimii prirodnykh soyedineniy AN SSSR.
(Testosterone)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

FRIDLYANDER, I.N., doktor tekhn. nauk, red.; AL'TMAN, M.B., kand. tekhn. nauk, red.; BAZHENOV, M.F., inzh., retsenzent; RZHEZNIKOV, V.S., kand. tekhn. nauk, red.; ANIKINA, M.S., ~~red.izd-va~~; ORESHKINA, V.I., tekhn. red.

[Aluminum foundry alloys (properties, technology of melting, casting and heat treatment)] Liteinye aliuminevye splavy (svoistva, tekhnologiia plavki, lit'ia i termicheskoi obrabotki); sbornik statei. Moskva, Gos. nauchno-tekhn. izd-vo Oborongiz, 1961. 202 p. (MIRA 15:2)
(Aluminum alloys) (Founding)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

DNESTROVSKIY, Nikolay Zel'manovich; POMERANTSEV, Sergey Nikolayevich [deceased]; ZVEREV, V.V. [deceased]; SHPICHINETSKIY, Ye.S., kand. tekhn. nauk, retsenzent; POSTNIKOV, N.N., inzh., retsenzent; RZHEZNIKOV, V.S., red.; KOSOLAPOVA, E.F., red. izd-va; BERLOV, A.P., tekhn. red.

[Brief manual on the treatment of nonferrous metals and alloys] Kratkii spravochnik po obrabotke tsvetnykh metallov i splavov. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1961. 410 p. (MIRA 14:8)
(Nonferrous metals) (Metalwork)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

RZHEZNIKOV, V. S., and S. Z. LASKIN.

Issledovaniia vliianiia zheleza na berillievuiu bronzu. (VIAM. Trudy, 1937, no.42, p. 47-77, illus., tables, bibliography.)

Summary in English.

Title tr.: Effect of iron on beryllium bronze

NN

SO: Aeronutical Science and Aviation in the Soviet Union, Library of Congress, 1955

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

VINOGRADOV, N.R. [deceased]; YEMELIN, A.A.; RZHEZNIKOV, V.S.; SLINKO, B.L.

Manufacturing bearings with reticular surface. Tren.i izn.mash.no.7: 164-174 '53. (Bearings (Machinery)) (MLRA 9:9)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

RZHEZNIKOV, Yu.V., inzh.; TUBYANSKIY, L.I., inzh.; GENKIN, A.L., inzh.

Measurement of pulsations in pressure in steam turbine control valves. Teploenergetika 8 no.3:33-36 Mr '61. (MIRA 14:9)

1. Vsesoyuznyy teplotekhnicheskiy institut i Leningradskiy metallicheskiy zavod imeni Stalina.
(Steam turbines)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

GARBUZOV, V.G., inzh.; BUSIOK, M.S., inzh.; RZHEZNIKOV, Yu.V., kand.tekhn.nauk

Dual throttling valves for high-speed reducing and cooling systems of large boiler units. Teploenergetika 12 no.1:22-26 Ja '65. (MIRA 18:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy teplotekhnicheskiy institut i Khar'kovskiy turbinnyy zavod.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

RZHEZNIKOV, Yu.V. (Moskva); BOYTSOVA, E. A. (Moskva)

Conditions for the disturbance of flow steadiness of a wall jet in a flat channel with bulging walls. Izv. AN SSSR. Mekh. i mashinostr. no.3:168-172 My-Je '64. (MIRA 17:7)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

RZHEZNIKOV, Yu. V., inzh.; BOYTSOVA, E. A., inzh.

Causes of unstable operation of the control valves of large steam turbines. Teploenergetika 10 no.3:25-29 Mr '63. (MIRA 16:4)

1. Vsesoyuznyy teplotekhnicheskiy institut.

(Steam turbines)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

AKHMEDSAFIN, U.M., akademik, otv. red.; RZHONDKOVSKAYA, L.S., red.; KOVALEVA, I.F., red.; SUVOROVA, R.T., red.

[Hydrogeological regionalization and the regional evaluation of the resources of underground waters in Kazakhstan] Gidrogeologicheskoe raionirovanie i regional'naia otsenka resursov podzemnykh vod Kazakhstana. Alma-Ata, Nauka, 1964. 306 p. (MIRA 18:2)

1. Akademiya nauk Kazakhskoy SSR, Alma-Ata. Institut geologicheskikh nauk. 2. AN Kazakhskoy SSR (for Akhmedsafin).

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

RZHONSNITSKIY, B.N., kand. tekhn. nauk

Two books on electric welding of metals. Vest. AN SSSR 34 no.10: 131-132 O '64. (MIRA 17:11)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

10,2000

80257
S/040/60/024/02/25/032

AUTHOR: Ryzhov, O. S. (Moscow)

TITLE: On the Transition From Subsonic to Supersonic Velocities in Laval Jets

PERIODICAL: Prikladnaya matematika i mekhanika, 1960, Vol. 24, No. 2, pp. 372-375

TEXT: The author considers spatial mixed flows of an ideal gas in Laval jets. He investigates the form of the transition surface when the velocity in the flow center reaches the sound velocity, while the derivative of the velocity in the direction of the tunnel axis is equal to zero. A result of F. Frankl' and H. Görtler (Ref. 1,2) is generalized: Theorem: Consider an ideal gas flow with the planes of symmetry $y = 0$, $z = 0$; the flow is assumed to be analytic in $x = y = z = 0$ and in a neighborhood K of this point. The velocity $u(x,0,0)$ in the direction of the x-axis is assumed to reach the local sound velocity in $x = 0$, where the derivative of the velocity vanish there,

$$(3.1) \qquad u = 1, \quad \frac{\partial u}{\partial x} = 0 \text{ for } x = y = z = 0.$$

The magnitudes v and w, $\frac{\partial v}{\partial x}$ and $\frac{\partial w}{\partial x}$, $\frac{\partial^2 v}{\partial x^2}$ and $\frac{\partial^2 w}{\partial x^2}$ are assumed to have

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

CARD : USSR

CATEGORY : Cultivated Plants. Industrial. Oleiferous. Sugar. M

ABS. JOUR. : RZhBiol., No. 3, 1959, No. 11015

AUTHOR : Ryzhov, S. N.

INST. : -

TITLE : Zonal Characteristics of Cotton Plant Cultivation on the Irrigated Territory of Uzbek SSR.

ORIG. PUB. : V sb.: Khlopkovodstvo in SSSR. M., Sel'khozgiz, 1958, 423-440

ABSTRACT : The irrigated lands of Uzbek SSR are divided into 2 great zones: 1) the plain zone with the greatest aridity and the climate of continental nature and with the takyr type of soil formation characterized by soils of low potential fertility; 2) the piedmont zone with less arid and continental climate, with serozem type of soil formation and with soils formed on loess, on loess-like loams, on the proluvial and diluvial deposits having favorable physical properties and a higher potential fertility. In their turn, both zones are divided according to geomorphologic-

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

RUMANIA/Nuclear Physics - Structure and Properties of Nuclei. C

Abs Jour : Ref Zhur Fizika, No 4, 1960, 8067

approximately in the form of a Gaussian function of random deviations with widths taht agree with experiment. The dependence of the period of fission on the stability parameter is derived. Fission into three fragments is considered, along with other problems connected with asymmetric fission.

Card 2/2

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

RYZKO, H.

Protection of buildings exposed to the risk of explosion in Poland. p. 219.

PRZEGLAD ELEKTROTECHNICZNY. (Stowarzyszenie Elektrykow Polskich) Warszawa, Poland, Vol. 35, no. 5, May 1959.

Monthly list of East European Accessions (EEAI) LC, Vol. 9, no. 1, Jan. 1960.

Uncl.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

KRASNIKOV, Yu. V.

PHASE I BOOK EXPLOITATION SOV/3871

Usovershenstvovaniye konstruktsiy i ekspluatatsii turbinnykh ustanovok; sbornik statey (Improvement in the Construction and Operation of Turbine Units; Collection of Articles) Moscow, Gosenergoizdat, 1959. 300 p. Errata slip inserted. 1,550 copies printed.

Eds. (Title page): Ya. M. Rubinshteyn, Professor, and A. V. Shcheglyayev, Corresponding Member, Academy of Sciences USSR; Ed. (Inside book): L. N. Sinel'nikova; Tech. Ed.: P. M. Asanov.

PURPOSE: The book is intended for engineers specializing in the design and operation of turbine equipment.

COVERAGE: This collection of 22 articles deals with aspects of turbine operations, particularly, variations in the heat performance of steam turbines and computation of optimum parameters for gas turbines. Turbine performance indices and a number of methods for more accurate determination of control parameters for specific cycles are presented. No personalities are mentioned. References follow several of the articles.

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Shcheglyayev, A.V. Certain Problems Relative to the Design of More Efficient Steam-Turbine Plants 7

Economic performance indices and the principal parameters for 4 types of steam turbines are tabulated. Blade-work efficiency and aspect ratios are analyzed, including those ratios applicable to ultrasonic velocities in Bauman-type turbines. Results obtained from the testing of SVK-150 turbines at the Leningradskiy metallicheskiy zavod (Leningrad Metal Works) are given.

Lyakhovitskiy, I.D., R. N. Alekseyeva, and Yu.V. Rzheznikov. Increasing the Economic Efficiency of Double-Arc Segments for Short-Blade Profiles 12

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Shchepetil'nikov, M.I. Analysis of Performance Gains Due to Regeneration, Based on the "Heat-Value Method" 56

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

Rubinshteyn, Ya.M., and L.V. Yedigarev. Two Arrangements of Feedwater Pumping 64

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Murganov, B.P. Certain Problems Related to the Control-System Stability of Turbine Generators operating in parallel. 73

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

Gal'perin, I.I. Methods of Turbine Governing in Compensated Control Systems 99

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Kirakosyants, G.A. Experimental Investigation of the Effects of Friction in the Governor on the Flow-Regulation Process 127

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

Improvement in the Construction (Cont.)

Veller, V.N., D.M. Levin, and Yu.V. Rzheznikov. Control Valve of the VTI Turbine 141

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APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

COUNTRY : USSR
CATEGORY : Cultivated Plants. Industrial. Oleiferous. Sugar. M
ABS. JOUR. : RZhBiol., No. 3, 1959, No. 11023

AUTHOR : Rzayev, I. T.
INST. : Azerbaydzhan Scientific Research Institute of Cotton
TITLE : Placement of Fertilizers Simultaneously with the Planting of Cotton.

ORIG. PUB. : Udobreniye i urozhay, 1958, No. 4, 55-56

ABSTRACT : In the field experiments conducted during 1951-1956 at Azerbaydzhan Scientific Research Institute of Cotton (AzNIKhI) on the placement of P 8-10 cm below the seed-bed, there was obtained an increase of 1.3-3.2 centners/ /ha in the yield of cotton wool. Under the conditions of the light chestnut soils of the lowland zone of Azerbaydzhan, 30-40% of the annual norm of P should be placed under the plow layer, 20% simultaneously with the planting and 30-40% as the supplementary nutrition. --- -- A. M. Smirnov

CARD: 1/2

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

AGEYEV, N.V., otvetstvennyy redaktor; RZHEZNIKOV, V.S., redaktor izdatel'stva; MAKUNI, Ye.V., tekhnicheskiy redaktor

[Strength of metals] Porochnost' metallov. Moskva, 1956. 205 p. (MLRA 10:2)

1. Akademiya nauk SSSR. 2. Chlen-korrespondent Akademii nauk SSSR (for Ageyev)
(Metals)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

SAMARIN, Aleksandr Mikhaylovich; RZHEZNIKOV, V.S., redaktor izdatel'stva; ZELENKOVA, Ye.V., tekhnicheskiy redaktor

[Physical and chemical principles of the deoxidizing of steel] Fiziko-khimicheskie osnovy raskisleniia stali. Moskva, Izd-vo Akademii nauk SSSR, 1956. 160 p. (MIRA 9:9)
(Steel--Metallurgy)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

RZHEZNIKOV, V. S.

PA 163T62

USSR/Metals - Testing, Bearings Jun 50
- Bearings, Design

"Determination of Internal Stresses in Bimetallic Bearings," V. S. Rzheznikov, M. A. Babichev

"Zavod Lab" Vol XVI, No 6, pp 734-737

Develops method for calculating internal stresses in bimetallic ring specimens: steel + bearing alloy. Determines values of internal stresses in bearings of lead bronze. Establishes that magnitude of internal tangential stresses depends on type of material and its state and that distribution law for

FDD 163T62

USSR/Metals - Testing, Bearings Jun 50
(Contd)

internal stresses may be established only by experiments. Internal stresses in bronze after tempering at 400° are changed insignificantly and fatigue strength of bronze remains practically the same.

FDD 163T62

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

ALEKSEYEV, R.N., inzh.; ALESHIN, A.I., inzh.; LYAKHOVITSKIY, I.D., kand.tekhn. nauk; RZHEZNIKOV, Yu.V., inzh.

Increasing the efficiency of the control stage of the VK-100-2 turbine. Elek.sta. 29 no.6:26-30 Je '58. (MIRA 11:9)
(Steam turbines--Blades)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

Rzheznikov, Yu. V.

AID P - 4428

Subject : USSR/Heat Engineering

Card 1/1 Pub. 110-a - 8/13

Authors : Alekseyeva, R. N., Eng., I. D. Lyakhovitskiy, Kand. Tech. Sci. and Yu. V. Rzheznikov, Eng. All-Union Heat Engineering Institute.

Title : Testing methods for relatively short turbine bladings and their shaping.

Periodical : Teploenergetika, 6, 51-56, Je 1956

Abstract : Various static testing methods are compared for short blades. Data on blades are given. The new VTI design of blades is deemed quite satisfactory. Sixteen diagrams illustrate the shape of various blades types. Two 1955 Russian references.

Institution : None

Submitted : No date

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

SHTERTSL', Ya., FRANEK, F.; RZHIGA, I., KOSTKA, Y.; LANTS, A.

Genesis and properties of nonantigenic -globulin in newborn animals; first appearance of natural antibodies and their relation to bactericidal properties of the serum. Zhur.mikrobiol., epid.i immun. 33 no.8:60-68 Ag '62. (MIRA 15:10)

1. Iz Biologicheskogo instituta Chekhoslovatskoy akademii nauk, Praga.

(GAMMA GLOBULIN) (INFANTS (NEWBORN))

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

RIHA, Karel [Riha, Karel]

Ramming and repair of the bottom of sectional open-hearth furnaces with fine-grained powder. Metallurg 10 no.9:26-27 S '65. (MIRA 18:9)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

RZHIGA, L. [Riha, L.] (Chekhoslovakiya)

Taking the time factor into account in establishing norms for the coefficients of economic efficiency. Vop. ekon. no.10:88-98 O '63. (MIRA 16:12)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

KOTEL'NIKOV, V. A., akademik; GUS'KOV, G. Ya.; DUBROVIN, V. M.; DUBINSKIY, B. A.; KISLIK, M. D.; KORENBERG, Ye. B.; MINASHIN, V. P.; MOROZOV, V. A.; NIKITSKIY, N. I.; PETROV, G. M.; PODOPRIGORA, G. A.; RZHIGA, O. N.; FRANTSESSON, A. V.; SHAKHOVSKOY, A. M.

Radar tracking of the planet Mercury. Dokl. AN SSSR 147 no.6: 1320-1323 D '62. (MIRA 16:1)

1. Institut radiotekhniki i elektroniki AN SSSR.

(Mercury(Planet)) (Radar in astronomy)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

L 27409-65 FBD/EWT(1)/EWG(v)/EEC-4/EEC(t) Pe-5/Pi-4/Pae-2 GW/W3

ACCESSION NR: AP5005354 S/0109/65/010/002/0364/0367 48 29 B

AUTHOR: Rzhiga, O. N.; Slobodenyuk, G. I.; Titov, V. N.; Trunova, Z. G.

TITLE: Decimeter-band radiometer and measurement of radiation from Jupiter

SOURCE: Radiotekhnika i elektronika, v. 10, no. 2, 1965, 364—367

TOPIC TAGS: planetary radiation, radiation measurement, radiometer, modulated radiometer, radiation flux / Virgo A, Jupiter

ABSTRACT: Measurements of 700-Mc radiation intensity from Jupiter were made in October 1963 with a modulated radiometer. The antenna system consisted of two identical antennas oriented in the same direction with their feed connected through a double T-joint. The outputs of the latter were alternately connected to the receiver through an antenna switch. A square-law detector, a modulation-frequency amplifier (passband, 10 cps) a synchronous detector using silicon diodes (time constants of the RC integrating circuit at the detector output: 1, 2, 5, 10, or 15 sec), a d-c amplifier, and a recorder made up the basic equipment. (See Fig. 1 of Enclosure.) To eliminate spurious signals, rectangular modulating voltage was applied to the grid of an i-f tube of the amplifier. The radiometer was calibrated with a noise generator; its fluctuation sensitivity was 0.4K at an integrator time con-

Card 1/3

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L 27409-65

ACCESSTION NR: AP5005354

stant of 15 sec. The intensity of radiation received from Jupiter was determined from a standard noise signal calibrated by means of the source Virgo A. The radiation flux density and spectral index of Virgo A at 960 cps, (300×10^{-26} w/m^2/cps and -0.72) were adjusted to the frequency of the measurements. The equivalent temperature was determined as 12,000K with an rms error of 2000K. The results of the observations confirm the pattern found in earlier measurements at other wavelengths of the variation of radiation intensity with wavelength. Orig. art. has: 1 figure and 3 formulas. [DW]

ASSOCIATION: Institut radiotekhniki i elektroniki AN SSSR (Institute of Radio Engineering and Electronics, AN SSSR)

SUBMITTED: 24Feb64 ENCLOSURE: 01 SUB CODE: AA, EC

NO REF SOV: 002 OTHER: 010 ATD PRESS: 3192

Card 2/3

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

L 27409-65

ENCLOSURE: 01

ACCESSION NR: AP5005354

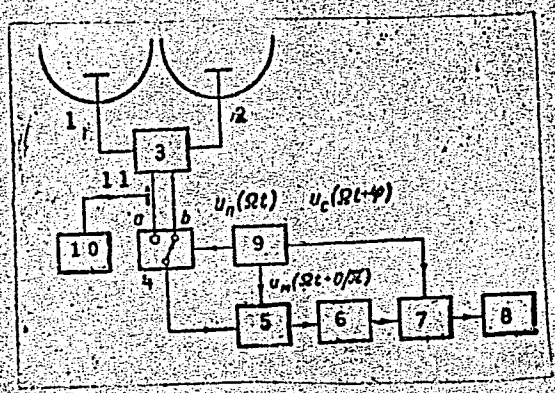

Fig. 1. Block diagram of the radiometer

1, 2 - Antennas; 3 - double T-joint; 4 - antenna switch; 5 - superheterodyne receiver with square-law detector; 6 - modulation-frequency amplifier; 7 - synchronous detector; 8 - recorder; 9 - rectangular pulse generator; 10 - noise generator; 11 - capacitive attenuator.

Card 3/3

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

L 37732-65 FSD/EWT(1)/EWG(v)/EEC-4/EEC(t) Pe-5/Pae-2/Pi-4 GW/WS-4
ACCESSION NR: AP5006006 S/0033/65/042/001/0121/0123

32
31
B

AUTHOR: Rzhiga, O. N.; Trunova, Z. G.

TITLE: Measurement of natural radio emission of Jupiter in the decimeter band

SOURCE: Astronomicheskiy zhurnal, v. 42, no. 1, 1965, 121-123

TOPIC TAGS: Jupiter radio emission, radio emission measurement

ABSTRACT: The intensity of the natural radio emission of Jupiter was measured in October 1963 at 700 Mc with a modulated radiometer. The radiation pattern of the antenna system was switched periodically from maximum to null detection in the main direction. The background temperature of the sky in the main direction was compared with the average background temperatures to the right and left. Fluctuation sensitivity of the radiometer was 0.4K at a time constant of the integrating circuit of 15 sec. Radiation intensity was determined on the basis of a standard noise signal calibrated with the use of data on the emission of discrete source Virgo A (M-87). The mean equivalent temperature of Jupiter was calculated as 12,000K with an rms error of ±2000K. The results confirm the dependence of Jupiter emission intensity on wavelength, agreeing in this regard with previous measurements at shorter and longer wavelengths. Orig. art. has: 3 figures and 3 formulas. [DW]

Card 1/2

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

L 37732-65

ACCESSION NR: AP5006006

ASSOCIATION: Institut radiotekhniki i elektroniki Akademii nauk SSSR (Institute of Radio Engineering and Electronics, Academy of Sciences, SSSR)

SUBMITTED: 26May64 ENCL: 00 SUB CODE: AA, EC

NO REF SOV: 000 OTHER: 010 ATD PRESS: 3218

Card 2/2

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

L 60859-65 EEC-4/EWG(v)/EWT(1)/FBD GW/WS-4

ACCESSION NR: AP5018071 UR/0020/65/163/001/0050/0053

AUTHOR: Kotel'nikov, V. A.; Aleksandrov, Yu. N.; Apraksin, L. V.; Dubrovin, V. M.; Kislik, M. D.; Kuznetsov, B. I.; Petrov, G. M.; Rzhiga, O. N.; Frantsesson, A. V.; Shakovskoy, A. M.

TITLE: Radar observations of Venus in the Soviet Union in 1964

SOURCE: AN SSSR. Doklady, v. 163, no. 1, 1965, 50-53

TOPIC TAGS: radio wave reflection, Venus radar observation, radio emission measurement, radar observation, radio astronomy

ABSTRACT: Radar observations of Venus at 40 cm were conducted between 11 and 30 June 1964 by the Institute of Radio Engineering and Electronics of the Academy of Sciences USSR. Frequency modulation and periodic linear frequency modulation of radiated signals were employed. Paramagnetic and parametric amplifiers were used at the receiver output. Signal analysis was performed by means of a 20-channel analyzer with a filter bandwidth of 1.2 cps for each channel. The reflected signal spectrum and measurements of the radial velocity of the motion of Venus were determined on the basis of the Doppler shift of the signal spectrum of the central frequency in relation to the radiation frequency. Frequency manipulation

Card 1/5

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

L 60859-65

ACCESSION NR: AP5018071

was effected with the radiating signal shaped as two alternating telegraphic pulse packets at two carrier frequencies differing either by 62.5 or by 2000 cps. At each frequency, pulse duration and the intervals between transmissions were 4.096 sec. Radio wave reflection from the Venusian surface and measurements of the distance to Venus were effected with linear frequency modulation. The results of the measurements of the distance to Venus and of the radial velocity of its motion are shown in Fig. 1 of Enclosure, with the vertical sections showing rms error values, which till 23 June did not exceed 15 km for 5 min of observation (at a deviation of 4 kc) and after 23 June did not exceed 2 km (at a deviation of 32 kc). Measurement error for velocity did not exceed 2.5 cm/sec. Signal propagation time was calculated with an accuracy of ±5 μsec, and Doppler frequency, with an accuracy of ±0.05 cps. The total rms error value for the initial data was ±400 km. The energy distribution of signals reflected from Venus depending on distance ΔR is shown in Fig. 2. The following conclusions are drawn: 1) The width of the Doppler spectrum of the reflected signal caused by the rotation of Venus does not exceed 15 cps. 2) The Venusian reflection factor averages 19%. 3) The energy in the central band of 1 cps is approximately one half of the energy of the whole spectrum. 4) The orientation of the Venusian axis of rotation is practically perpendicular to the orbital plane. Orig. art. has: 4 figures. [DW]

Card 2/5

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

L 60859-65

ACCESSION NR: AP5018071

ASSOCIATION: Institut radiotekhniki i radioelektroniki Akademii nauk SSSR (Institute of Radio Engineering and Electronics, Academy of Sciences SSSR)

SUBMITTED: 12Apr65 ENCL: 02 SUB CODE: DC, AA

NO REF SOV: 003 OTHER: 000 ATD PRESS: 4063

Card 3/5

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

L 60859-65

ACCESSION NR: AP5018071

ENCLOSURE: 01

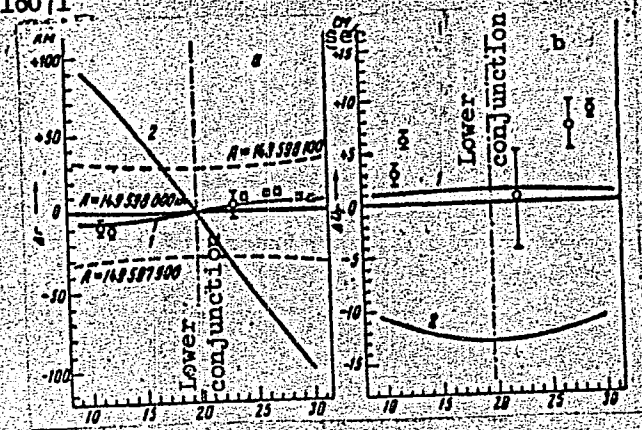

Fig. 1. (a) Variation in the relative calculated value of the distance to Venus and (b) the radial velocity of Venusian motion

Δr - Difference between the measured and calculated distance from the measuring point to the closest point on the surface of Venus; Δv_r - difference between the measured and calculated radial velocity of Venusian reflection center in relation to the measuring point.

Card 4/5

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

L 60859-65

ENCLOSURE: 02

ACCESSION NR: AP5018071

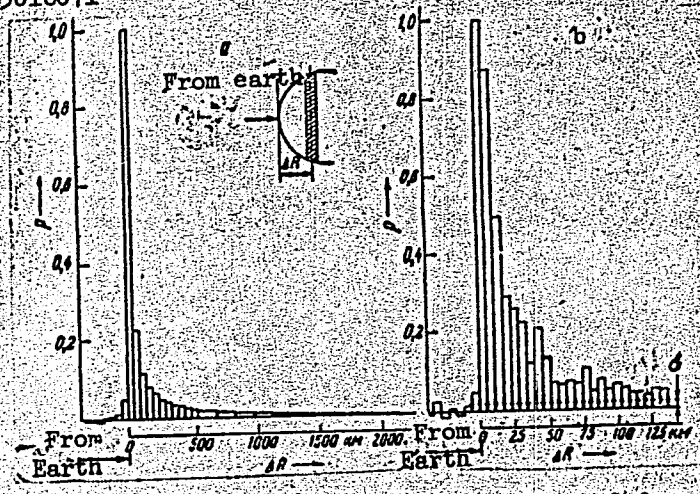

Fig. 2. Energy range distribution of signals reflected from Venus obtained by linear frequency modulation (a) with a deviation of 4 kc (σ = 0.0025 for narrow filters and σ = 0.0014 for wide filters) and (b) with a deviation of 32 kc

Card 5/5

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

RZHIGA, O

107-57-7-29/56

AUTHOR: Rzhiga, O. and Shakhovskoy, A.

TITLE: Ultrashort-Wave Receiver (UKV priyemnik)

PERIODICAL: Radio, 1957, Nr 7, pp 17-20 (USSR)

ABSTRACT: Principles, circuit diagram, construction, and parts of a special ultrashort wave receiver for monitoring the signals from a Soviet satellite.

The principal requirements for such a receiver are: high selectivity, high sensitivity, good heterodyne-frequency stability, and minimum internal noise. The signal field intensity at the receiving antenna will be a few μv/m only. The pass band should allow for Doppler effect. Thus, at 40 mc and satellite speed 8 km/sec the frequency variation of a signal would be about 2,000 cps, while the spectrum of the transmitted signal would be only a few cps. Allowing for heterodyne-frequency variations the pass band of the receiver should be made about 6-8 kc.

The 9-tube superheterodyne for sputnik signals, described below, is intended for 40-mc sputnik frequency. Continuous adjustment in ± 50-kc band and special measures for heterodyne-frequency stabilization facilitate the search for signal. A quartz calibrator may be used for fine tuning. One half-wave antenna (described in 107-7-30/56) is sufficient for the receiver.

Card 1/2 -57

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

107-57-7-29/56

Ultrashort-Wave Receiver

For better image-channel selectivity an i.f. of 1,600 kc was chosen. I-f pass band is 8 kc. The receiver sensitivity (at signal-noise ratio 3/1) is 2 μv or better for a modulated signal, or 0.7 μv for c.w. The receiver consumes about 60 w a-c.

A detailed description of construction, parts, and their mounting and wiring is given; also aligning and tuning of the receiver.
Tube types used are: 6Zh4, 6K3, 6A7, 6N8S, 5Ts4S; all other parts are also Soviet made.
There are 4 figures and 2 Soviet references in the text.

AVAILABLE: Library of Congress

Card 2/2

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

Rzhiga, O

107-8-27/62

AUTHOR: Rzhiga O. and Shakhovskoy A.

TITLE: Observations of the Signals of Artificial Earth Satellites (Methods of Observations). (Nabludeniye za signalami iskusstvennykh sputnikov zemli (Metodika nabludeniy).

PERIODICAL: Radio, 1957, # 8, pp 17-19 (USSR)

ABSTRACT: To receive signals from a satellite, half-wave dipoles as well as loop vibrators may be used as antennas.
Dipoles may be made of metal tubes, antenna cable or of stranded wire, suspended by two stretching wires. Long feeder lines should be made of HF cable matched with the antenna and the input impedance of the receiver.

A simple antenna with a wave impedance of 300 ohms can be manufactured of TV-cable "KATB-300" as shown by Fig 1.

The appearance of the satellite may be indicated by an intermittent tone of 0.2 to 1.5 cps.
The duration of one observation varies from 5 to 10-15 minutes, depending on the sensibility of the receiving equipment.

Card 1/6

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

107-8-27/62

TITLE: Observations of the Signals of Artificial Earth Satellites (Methods of Observations). (Nabludeniye za signalami iskusstvennykh sputnikov zemli (Metodika nabludeniy).

The start of reception, the moment when the signal attains the maximum volume, as well as the moment when it becomes inaudible, are to be noted by means of a stop watch. Recording the exact time on magnetic tape, will allow accurate determination of the moment at which the satellite passes over a given point.

Because of the peculiarity of wave propagation in the ionosphere, the signal can appear by a sharp leap and also vanish suddenly. During reception time, periodical fadings may be observed.

In case of direct visibility, the intensity of reception is inversely proportional to the distance between the receiving and transmitting antennas.

Therefore, the signal will be the most intense when the satellite passes closest to the reception point. However, the method utilizing the doppler effect is more accurate, being independent of the signal fadings in the ionosphere. For this purpose, the heterodyne frequency of the receiver should not vary more than by a few tenths of cps during the reception of satellite signals, the frequency of the satellite transmitter being stabilized by

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

107-8-27/62

TITLE: Observations of the Signals of Artificial Earth Satellites (Methods of Observations). (Nabludeniye za signalami iskusstvennykh sputnikov zemli (Metodika nabludeniy).

quartz. For obtaining this, the heterodyne frequency of the receiver is to be stabilized either by quartz or by a very careful application of the parametric frequency stabilization.

It is much easier to utilize an ordinary receiver and, in addition, a generator with a standard frequency of 40 mc/s±2kc/s, for instance, the quartz calibrator "KK-6".

In this case, the local heterodyne is to be switched off and the detected pulsations between the signal and the oscillations of the calibrator are to be recorded on a magnetic tape.

For this purpose, the "Communication" terminals of the calibrator are to be slightly connected by loose coupling with the antenna input of the receiver. This method eliminates the influence of the heterodynes of the receiver, and the pulsations resulting from interacting oscillations with stable frequencies.

The signal frequency and that of the harmonic of the calibrator being similar, will be separated by the selective system of the receiver from the sum of all other frequencies.

Card 3/6

[illegible] the tape recorder.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

107-8-27/62

TITLE: Observations of the Signals of Artificial Earth Satellites (Methods of Observations). (Nabludeniye za signalami iskusstvennykh sputnikov zemli (Metodika nabludeniy).

Time-marks will probably be transmitted by the central broadcasting radio station, and can be recorded simultaneously with the signal entering the input of the tape recorder. If such time-marks are not transmitted, the time is to be indicated by voice exactly at the moment of inaudibility of the satellite signal, the tape recorder being still in operation.

The optimum frequency for determining the moment of passage of the satellite by means of the Doppler effect is 40 mc, while 20 mc are more suitable for measurements in the ionosphere because of the more intensive reflection. The measuring of the signal amplitude during the flight of the satellite in the ionosphere can be effected at the output of the receiver either by means of the output meter "ИВ-4", a copper oxide or a tube voltmeter (ТТ-1, ВКС-7 and others).

Some regularities can be also found out with respect to the influence of the ionosphere over the propagation of waves having different lengths. Two receivers with output indicators, the readings of which are simultaneously registered will be used for this purpose.

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Kzh/GA C/U

29(0) PHASE I BOOK EXPLOITATION SOV/1658

Akademiya nauk SSSR

Iskusstvennyye sputniki zemli, vyp. 1: Rezul'taty nauchnykh issledovaniy, provedennykh po programe MGG pri pomoshchi pervogo i vtorogo iskusstvennykh sputnikov zemli (Artificial Earth Satellites, Nr 1: Results of Scientific Studies Carried Out in Accordance With the IGY Program by Means of the First and Second Artificial Earth Satellites) Moscow, Izd-vo AN SSSR, 1958. 95 p. 3,500 copies printed. [Microfilm and Zerox Copy]

Resp. Ed.: L.V. Kurnosova; Ed. of Publishing House: D.M. Alekseyev; Tech. Ed.: T.V. Polyakova.

PURPOSE: This collection of articles is the first in a series to be published regularly and is intended to disseminate to the scientific community data collected in investigations performed by means of artificial earth satellites.

COVERAGE: This collection includes papers covering scientific data obtained from the first and second Soviet artificial earth satellites. Among the areas reported on are measurements of cosmic radiation, atmospheric density, electron concentration in the ionosphere, and biological studies of an animal occupant of a satellite. Papers on the motions and perturbations of satellite orbits and optical and Doppler methods of satellite tracking are also included. Coverage of the individual articles is given in the Table of Contents.

Kotel'nikov, V.A., V.M. Dubrovin, V.A. Morozov, O.N. Rzhiga, and A.M. Shakhovskoy. Use of the Doppler Effect for Determining the Orbital Parameters of Artificial Satellites 50

This paper discusses both the theory and the practical application of the Doppler effect to the determination of the characteristics of satellite orbits. The paper first presents an analysis of the shift in the apparent frequency for a case where the transmitter is in uniform rectilinear motion. The author proposes the use of several variations of a simple graphical method for determining the time of closest approach from the frequency-time curve. The accuracy of these graphical methods is of benefit if one takes advantage of the fact that the curve is theoretically symmetrical about the point of closest approach. An analysis is presented for the frequency shift in the case of rectilinear motion with constant acceleration. Acceleration distorts the frequency-time curve so that it is no longer symmetrical. The simple methods of analysis previously discussed produce errors which are proportional to the ratio of acceleration to velocity. Application of the method to an elliptical orbit shows that errors due to acceleration are small. A study is also made of the effect of the curvature of the trajectory. A higher degree of approximation is obtained in the analysis by using a circular arc to represent the orbit at the point of closest approach. If the method used for linear motion is applied, the calculated value of the velocity will be lower than the true value. However, corrections can be applied to obtain the true velocity if the radius of curvature of the orbit at the point of closest approach is known. Data received from Sputnik I and Sputnik II support the theory. The author discusses the techniques used to obtain and record the data. The method used for frequency analysis is of particular interest. The author estimates the overall accuracy of the system as follows: Time of closest approach, ± 0.2 - 0.4 seconds for slant ranges of 250-500 km; ± 1 second for 1000 km. Velocity, ± 3-5 percent for slant ranges of 250-700 km, somewhat larger for 1000 km. Slant range at closest approach, percentage error about the same as for velocity. The author suggests several methods for increasing accuracy: a) increase transmitted frequency to reduce ionospheric effect, or eliminate ionospheric effect by the use of two frequencies, b) introduce corrections for nonuniformity and nonlinearity of motion by starting from approximate knowledge of the orbit, c) better time correlation and correction of errors in the establishment of the fundamental frequency, d) use of automatic frequency-measuring equipment to eliminate subjective errors due to visual determination of instant of frequency coincidence in arriving at frequency-time curve. The author considers that the experiments conducted with Sputnik I and Sputnik II indicate the successful use of the Doppler effect to determine the characteristics of satellite orbits. There is 1 English reference.

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AUTHORS: Kotel'nikov, V. A., Dubrovin, V. M., Morozov, V. A., Rzhiga, O. N., Shakhovskoy, A. M.

TITLE: Application of the Doppler Effect for the Determination of the Orbital Parameters of the Artificial Earth Satellites (Ispol'zovaniye effekta Dopplera dlya opredeleniya parametrov orbity iskusstvennykh sputnikov zemli)

PERIODICAL: Radiotekhnika i Elektronika, 1958, Nr 7, pp 873-881 (USSR)

ABSTRACT: The frequency shift produced by the Doppler effect as a result of the motion of an earth satellite is appreciable enough to be employed in the evaluation of the time when the satellite is at a minimum distance from the point of observation (the receiver), and the corresponding air-to-ground distance and velocity. In the first approximation it can be assumed that the path of the satellite is linear (see Fig.1), so that its distance from the receiver can be expressed by:

$$r = \sqrt{r_0^2 + v_0^2 \Delta t^2} \qquad (1)$$

where $\Delta t = t - t_0$, where t_0 is the instant when the

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Application of the Doppler Effect for the Determination of the Orbital Parameters of the Artificial Earth Satellites

satellite is at the point B and r_0 is the corresponding air-to-ground distance. The frequency shift due to the Doppler effect is expressed by:

$$\Delta F = -\frac{1}{\lambda}\frac{dr}{dt} = -\frac{v_0}{\lambda}\frac{\Delta t}{\sqrt{\Delta t^2 + \left(\frac{r_0}{v_0}\right)^2}} \qquad (2)$$

Eq.(2) was used to plot a number of curves for a satellite transmitter operating at $f_0 = 40$ Mc/s for various values of r_0 and v_0, where v_0 is the average velocity of the satellite. The curves are shown in Figs.2 and 3 where ΔF is in c/s and Δt in sec. The instant of the maximum approach (or minimum distance) of the satellite can be determined from the curves of Figs.2 and 3, bearing in mind that

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Application of the Doppler Effect for the Determination of the Orbital Parameters of the Artificial Earth Satellites

they are symmetrical with respect to f_o (as shown in Fig.4); t_o is simply evaluated by constructing a secant which intersects the curve at a point O in such a way that its segments between O and two other intersecting points are equal (see Fig.4). The instant of maximum approach can also be determined analytically by approximating the frequency-time curve by means of straight lines (as shown in Fig.5), but this procedure is less accurate. Eq.(2) can also be written as Eq.(11). If this equation is plotted in Δt^2 and $\Delta t^2/\Delta f^2$ coordinates a straight line is obtained (see Fig.6) which intersects the coordinates at a and b; it is thus possible to determine the average velocity v_o and the minimum distance r_o. These quantities are expressed by Eqs.(14) and (15) respectively. If the motion of the satellite is rectilinear but is subject to an acceleration a_o, the distance between the transmitter and the receiver is given by Eq.(16), and the frequency shift is expressed by Eq.(17). If the acceleration a_o is

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comparatively small (as was the case with the two Soviet satellites) the frequency shift is expressed approximately by Eq.(18). The presence of acceleration destroys the symmetry of the frequency-time curve (see Fig.7) so that the time of maximum approach, when determined from such a curve, is subject to an error. The magnitude of the error δt for various distances is plotted in Fig.8. The parameters of a satellite can be determined more accurately if its trajectory is assumed to be curvilinear (see Fig.9); here the true trajectory is represented by curve 1, the approximate curvilinear trajectory by curve 2 and the tangent to the orbit by straight line 3; the centre of the approximate trajectory is situated at point C and its radius vector is equal to R_o. The distance between the satellite and the receiver can then be expressed by Eq.(19). If the motion of the satellite is uniform, the angle θ is expressed

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Application of the Doppler Effect for the Determination of the Orbital Parameters of the Artificial Earth Satellites

by Eq.(21) so that the frequency shift is given by Eq.(22). If θ is comparatively small the frequency shift is given approximately by Eq.(23). Experimentally, the task of determining the orbital parameters of the satellites by the Doppler effect was carried out by the Institute of Radio Engineering and Electronics of the Soviet Academy of Sciences at a frequency of 40 Mc/s. The actual time-frequency curve taken on October 10, 1957, is shown in Fig.10. The graphical method was used for determining t_o, r_o and v_o and the results are shown in the table on p 880 and in Fig.11. It was found that the errors in determining t_o were 0.2 to 1 sec, while v_o and r_o could be determined

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Application of the Doppler Effect for the Determination of the Orbital Parameters of the Artificial Earth Satellites

with an error of 3 to 5%. There are 12 figures.

ASSOCIATION: Institut radiotekhniki i elektroniki AN SSSR (Institute of Radio Engineering and Electronics of the Soviet Academy of Sciences)

SUBMITTED: April 11, 1958.

1. Satellite vehicles trajectories--Mathematical analysis 2. Doppler navigation systems--Applications

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AUTHOR: Rzhiga, O.N.

TITLE: Beat Method of Measuring Instantaneous Frequency 25

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol.5, No.11, pp.1764-1773

TEXT: The article discusses a method which has been proposed for determining the Doppler shift of artificial Earth satellite signals. It is based on the detection of the time of passage through zero of the beat between the unknown signal and a local oscillator of constant frequency. It is assumed that the beat passes through zero frequency during the measurement. The article considers the errors of measurement caused by the presence of parasitic capacitance (equivalent to an integrating circuit) between the mixer and the circuit for detecting the times of passage through zero of the instantaneous beat signal, the effects of Gaussian noise and of nonlinearity of the frequency variation. Certain remarks are made on the problem of measuring fast non-repetitive processes covering a wide frequency range. A comb heterodyne system is proposed. Ambiguities of frequency with such a method

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Beat Method of Measuring Instantaneous Frequency

can be resolved by using two systems, with differing distances between the "teeth". This method has the defect that the noise is increased as all noise components in the passband of the filter for each "tooth" of the comb will be integrated. The method can be applied to other related problems, such as determining the instantaneous frequency in particle accelerators. Acknowledgments are expressed to V.A.Kotel'nikov and V.I.Bunimovich for their assistance.

ASSOCIATION: Institut radiotekhniki i elektroniki AN SSSR (Institute of Radioengineering and Electronics AS USSR)

SUBMITTED: February 22, 1960

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KOTEL'NIKOV, V.A.; APRAKSIN, L.V.; VOYTOV, V.O.; GOLUBTSOV, M.G.; DUBROVIN, V.M.; ZAYTSEV, N.M.; KORENBERG, Ye.B.; MINASHIN, V.P.; MOROZOV, V.A.; NIKITSKIY, N.I.; PETROV, G.M.; RZHIGA, O.N.; SHAKHOVSKOY, A.M.

Radar system used in the Venus probe of 1961. Radiotekh. i elektron. 7 no.11:1851-1859 N '62. (MIRA 15:11)

1. Institut radiotekhniki i elektroniki AN SSSR.
(Radar)
(Venus probes)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

KOTEL'NIKOV, V.A.; DUBROVIN, V.M.; MOROZOV, V.A.; PETROV, G.M.; RZHIGA, O.N.; TRUNOVA, Z.G.; SHAKHOVSKOY, A.M.

Results of Venus radar probes conducted in 1961. Radiotekh. i elektron. 7 no.11:1860-1872 N '62. (MIRA 15:11)

1. Institut radiotekhniki i elektroniki AN SSSR.
(Venus probes)
(Radar)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001446610006-3

KOTEL'NIKOV, V.A., akademik; DUBROVIN, V.M.; KISLIK, M.D.; KORENBERG, Ye.B.; MINASHIN, V.P.; MOROZOV, V.A.; NIKITSKIY, N.I.; PETROV, G.M.; RZHIGA, O.N.; SHAKHOVSKOY, A.M.

Radar observation of Venus. Dokl.AN SSSR 145 no.5:1035-1038 '62. (MIRA 15:8)

1. Institut radiotekhniki i elektroniki AN SSSR.
(Radio astronomy) (Venus (Planet))

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ACCESSION NR: AT3007033 S/2560/63/000/017/0091/0100

AUTHOR: Kotel'nikov, V. A.; Dubrovin, V. M.; Rzhiga, O. N.; Shakhovskoy, A. M.

TITLE: Reception and study of characteristics of radio signals from Soviet space rockets

SOURCE: AN SSSR. Iskusst. sputniki Zemli, no. 17, 1963, 91-100

TOPIC TAGS: rocket, space rocket, moon rocket, lunar rocket, Lunik, Lunik 1, Lunik 2, Lunik 3, Lunik radio transmission, Lunik radio reception, ionospheric interference, Faraday rotation

ABSTRACT: The receivers used for recording 20-Mc and 40-Mc signals from the three 1959 Lunik rockets are described, and features of the data received are discussed. The same general type of receiver served for all three rockets, (see Fig. 1 of the Enclosure). The 20- and 40-Mc signals (19.993 and 39.986 Mc, precisely) were keyed alternately in transmission, so that one or the other receiver

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channel was always active. The mixing and multiplying shown gave IF signals, modulated at 1 kc and 2 kc, whose tuning could be monitored on two Lissajous patterns using a 1-kc crystal. The detector time constant was variable from 0.5 to 5 sec, and filter 13 had stepped bandpass settings of 50, 100, or 250 cps; the settings for filter 14 were double these values. The antenna preamplifiers had noise figures of 3—5 (20 Mc) and about 2 (40 Mc). The 20-Mc antenna had upper and lower stages of three elements each, with a gain of 8—10 and a 200-m^2 aperture; it was located on a steep coastal cliff [not identified]. The second stage took advantage of signal reflection from the sea surface to augment total reception; the receiver could be switched to either or both stages as desired. The 40-Mc antenna used a ten-element array having two independent channels to permit reception of signals with non-mutually perpendicular polarization; antenna gain was 20 with an aperture of 100 m^2. Analysis of received signals included the following findings: 1) Signal amplitude modulation revealed rotational periods of the instrument packages of 108 sec for Lunik 12 and 86 sec for Lunik 12. Lunik 3 showed a 165-sec rotational period

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before it was stabilized to enable it to take photographs of the moon, after which it resumed rotation at a 180-sec period. 2) The 20-Mc signals were generally good except when swamped in ionospheric noise between sunrise and sunset and when the vehicle was not in the line of sight. An exception appeared to be an abrupt loss of the 20-Mc signal from Lunik 1 for 25 minutes in line of sight and passing closest to the moon; this occurred more than two hours before sunrise and hence was not the result of the usual solar-induced ionospheric noise. The simultaneous transmission at 183.6 Mc showed no such interruption. 3) The 40-Mc signals did not show as great a sensitivity to solar ionospheric effects and could be detected when the rocket was some 15 minutes below the earth's horizon. 4) Prior to impacting on the moon Lunik 2 transmission at 20 Mc showed a net Doppler shift of (-)50 cps in the final half hour of flight, indicating an increase in approach radial velocity of 750 m/sec. Lunar impact was confirmed by both 20-Mc and 183.6-Mc signals to have occurred at 0002 hr, 22.25 ± .25 sec, Moscow time. 5) Faraday rotation caused by the ionosphere was clearly seen in 20-Mc reception from Lunik 2 as it

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