"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

2/2 010 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AN0104995

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN RECENT TIMES MANY CHANGES HAVE TAKEN PLACE IN MILITARY SCHOOLS. MANY OF THEM HAVE BECOME HIGHER SCHOOLS AND THEY PROVIDE OUR FUTURE OFFICERS WITH THE MOST UP TO DATE SOCIAL, TECHNICAL, AND SPECIALIZED KNOWLEDGE. HOW ARE TODAY'S CADETS LIVING, STUDYING, AND PREPARING THEMSELVES FOR THE DIFFICULT PROFESSION OF COMMANDER? WHAT KINDS OF PROBLEMS ARISE HERE? IN ORDER TO CLARIFY THESE QUESTIONS THE EDITORS OF KRASNAYA ZVEZDA CONDUCTED A SPECIFIC SOCIOLOGICAL STUDY IN FIVE MILITARY SCHOOLS: THE MOSCOW HIGHER COMBINED ARMS COMMAND ORDER OF LENIN, RED BANNER SCHOOL IMENI THE SUPREME SOVIET RSFSR; THE UL'YANOVSK GUARD HIGHER TANK COMMAND TWICE RED BANNER, ORDER OF THE RED STAR SCHOOL IMENI V. I. LENIN; THE HIGHER NAVAL ORDER OF LENIN, RED BANNER, ORDER OF USHAKOV SCHOOL IMENI M. B. FRUNZE; THE RYAZAN' HIGHER AIRBORNE LANDING COMMAND TWICE RED BANNER SCHOOL IMENI THE LENINIST KOMSOMOL; AND THE UL'YANOVSK HIGHER MILITARY COMMAND SCHOOL OF COMMUNICATIONS IMENI G. K. ORDZHONIKIDZE.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

1/2 008 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--SYNTHESIS AND STEREOCHEMISTRY OF C SUB10 HYDROCARBONS OF THE CIS BICYCLO,3.3.0,OCTANE SERIES -U-

AUTHOR-(05)-AREFYEV, O.A., VOROBYEVA, N.S., MAKUSHINA, V.M., SOLODKOV, V.K., TSEDILINA, A.L.

COUNTRY OF INFO--USSR

SOURCE--NEFTEKHIMIYA 1970, 10(2), 165-73

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--STEREOCHEMISTRY, ORGANIC SYNTHESIS, CYCLOALKANE HYDROCARBON, OCTANE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0937 STEP NO--UR/0204/70/010/002/0165/0173

CIRC ACCESSION NO--AP0134663

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

2/2 008 UNCLASSIFIED

CIRC ACCESSION NO--AP0134663 PROCESSING DATE--04DEC70

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

1,2,DIMETHYLBICYCLO(3.3.0)OCT,2,EN,4,ONE (I) WAS PREPD. BY CONDENSATION OF 2,METHYLCYCLOPENTANONE WITH VINYLACETYLENE, DEHYDRATION OF THE CARBINOL WITH H SUB2 SO SUB4 TO II, AND FINALLY CYCLOHYDRATION WITH H SUB3 PO SUB4. BY A SEQUENCE OF REDNS. OF I, CIS,1,2,DIMETHYLBICYCLO(3.3.0)OCTANE WAS OBTAINED.

1,3,DIMETHYLBICYCLO(3.3.0)OCTANE WAS PREPD. BY DIENE CONDENSATION OF 1,FORMYL,1,CYCLOPENTENE WITH 1,3,BUTADIENE AND REDN. OF 1,FORMYL,3A,6,7,7A,TETRAHYDROINDAN INTO 1,METHYL,3A,6,7,7A,TETRAHYDROINDAN, WHICH WAS OXIDIZED (KMNO SUB4) TO 1,METHYL,1,2,CYCLOPENTANEDIACETIC AICD, WHICH, AFTER HEATING WITH BAO GAVE III. III WITH METHYL GRIGNARD AND THEN DEHYDRATION GAVE IV WHICH AFTER HYDROGENATION GAVE THE 1,3,COMPD. THE 3,7,DIMETHYLBICYCLOOCTANE WAS OBTAINED FROM THE CORRESPONDING DIKETONE BY NEMGI, DEHYDRATION ON AL SUB2 O SUB3, AND THEN HYDROGENATION OF THE UNSATD. COMPD. MIXT. OF 2,7,DIMETHYL AND 2,8,DIEMTHYL COMPDS. WERE SIMILARLY OBTAINED AS THE 1,2,DIMETHYL COMPDS. THE CONFORMATIONS OF THE DIMETHYL CIS,BICYCLO(3.3.0)OCTANES WAS DETD. FROM GAS LIQ. CHROMATOG. RETENTION TIMES AND CALCD. B.P. DATA. FACILITY: INST. GEOL. RAZRAB. GORYUCH. ISKOP., MOSCOW, USSR.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

USSR

UDC 539.194

MAKUSHKIN, Yu. S., Siberian Physicotechnical Institute imeni V. D. Kuznetsov, Tomsk University

"Fourth-Order Centrifugal Distortion Constants for XY_2-Type Molecules"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Fizika, No 2, 1970, pp 40-43

Abstract: Previous articles by the author gave general formulas for second- and third-order centrifugal constants obtained by means of perturbation theory. The present article is devoted to a brief discussion of the question of the applicability of perturbation theory in this case, as well as the question of the magnitude of contributions of various approximations of the Hamiltonian for a non-rigid gyroscope. Formulas are given for fourth-order centrifugal constants.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

1/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--FOURTH ORDER CENTRIFUGAL DISTORTION CONSTANTS FOR XY SUB2 TYPE MOLECULES -U-

AUTHOR--MAKUSHKIN, YU.S.

COUNTRY OF INFO--USSR

SOURCE--TOMSK, IZVESTIYA VYSSHIKH UCHEBNYKH ZAVEDENIY, FIZIKA, NO 2, 1970, PP 40-43

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GYROSCOPE MOTION, HAMILTONIAN, PERTURBATION THEORY, CENTRIFUGAL FORCE, MOLECULAR KINETICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1436 STEP NO--UR/0139/70/000/002/0040/0043

CIRC ACCESSION NO--AP0125070

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

2/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0125070

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PREVIOUS ARTICLES BY THE AUTHOR GAVE GENERAL FORMULAS FOR SECOND AND THIRD ORDER CENTRIFUGAL CONSTANTS OBTAINED BY MEANS OF PERTURBATION THEORY. THE PRESENT ARTICLE IS DEVOTED TO A BRIEF DISCUSSION OF THE QUESTION OF THE APPLICABILITY OF PERTURBATION THEORY IN THIS CASE, AS WELL AS THE QUESTION OF THE MAGNITUDE OF CONTRIBUTIONS OF VARIOUS APPROXIMATIONS OF THE HAMILTONIAN FOR A NON RIGID GYROSCOPE. FORMULAS ARE GIVEN FOR FOURTH ORDER CENTRIFUGAL CONSTANTS. FACILITY: SIBERIAN PHYSICOTECHNICAL INSTITUTE IMENI V. D. KUZNETSOV, TOMSK UNIVERSITY.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

172 U26 UNCLASSIFIED PROCESSING DATE 20NOV70

TITLE--EFFECT OF VIBRATIONAL ROTATIONAL INTERACTIONS ON THE LINE INTENSITY OF THE 6.3 MU H SUB2 O BAND -U-

AUTHOR-(02)-IPPOLITOV, I.I., MAKUSHKIN, YU.S.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(3), 101-7

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--WATER, LINE INTENSITY, VIBRATION EFFECT, PERTURBATION THEORY, MATHEMATIC ANALYSIS, CORIOLIS FORCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1258 STEP NO--UR/0139/70/013/003/0101/0107

CIRC ACCESSION NO--AP0124909

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

2/2 026 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0124909

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. THE EFFECT OF VIBRATIONAL ROTATIONAL INTERACTIONS ON THE LINE INTENSITY OF THE 6.3 MU WATER BAND IS ANALYZED BY USING THE EARLIER DESCRIBED GENERAL METHOD BASED ON THE PERTURBATION THEORY (I. AND M., 1968). THE EQUATIONS DERIVED FOR CALCG. THE INTENSITIES OF THE LINES OF THE 6.3 MU WATER BAND TAKE INTO ACCOUNT THE RIGIDITY OF THE MOL., THE DELTA K EFFECT, AND THE CORIOLIS INTERACTION. THE EQUATIONS CONTAIN 3 PARAMETERS WHICH ARE DETD. FROM EXPTL. DATA ON THE LINE INTENSITIES. FACILITY: TOMSK. GOSUNIV., TOMSK, USSR.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

1/2 012 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--DRYING NORMAL PROPYL ALCOHOL WITH SYNTHETIC ZEOLITES -U-

AUTHOR-(03)-SHCHERBAKOVA, P.R., MAKUSHKINA, A.I., BYK, S.SH.

COUNTRY OF INFO--USSR

SOURCE--NEFTEPERERAB. NEFTEKHIM. (MUSCOW) 1970, (2), 41

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PROPANOL, ZEOLITE, ADSORPTION, WATER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1882 STEP NO--UR/0318/70/000/002/0041/0041

CIRC ACCESSION NO--AP0112862

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

2/2 012 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0112862

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PROH, CONTG. 0.22-1.90 WT. PERCENT WATER, WAS PASSED AT 20DEGREES AND VELOCITY 0.31 AND 0.28 CM PER MIN THROUGH A BED OF 19.5 AND 23 CM HIGH AND 2.87 1.76 CM PRIME2 OF KA AND NAA ZEOLITES, WITH DYNAMIC ACTIVITY TO WATER 12.2 AND 14.7PERCENT, RESP., TO GIVE PROH WITH 0.002PERCENT WATER CONTENT. THE ADSORBENT COULD BE REGENERATED BY HEATING 12 HR AT 370-400DEGREES.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

USSR

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UDC 533.601.155

OVCHINNIKOVA, T. I., MAKUSHINA, YE. A.

"Hypersonic Flow of a Gas Around Some Second-Order Central Surfaces"

Leningrad, Vestnik Leningradskogo Universiteta, No 1, January 1970, pp 109-119

Abstract: This paper contains an investigation of limiting three-dimensional hypersonic flow of a gas around some second-order central surfaces. Formulas are derived which make it possible to describe the pressure and density fields in the shock layer and to determine the distance between the shock wave and the surface of the body around which flow is taking place. The study includes hypersonic flow around blunt bodies having a plane of symmetry (an elliptical paraboloid and a triaxial ellipsoid) with an arbitrary angle of attack, hypersonic flow of gas around an elliptic parabolid in the vicinity of the critical point, and hypersonic flow of a gas around an elliptic parabolid with a zero angle of attack. An example problem is solved for flow around an elliptic parabolid with a halfaxis ratio of a/b = 2.

The analysis of limiting hypersonic flow around an elliptic parabolid and a triaxial ellipsoid permits determination of the flow lines and limiting current entry line, the pressure and enthalpy in the shock layer near the critical point as a function of the curvilinear coordinates ξ and η, the parameters of the body a and b and the directional cosines β_1, β_2, β_3 of the on-coming flow velocity. The distance between the shock wave and the surface of the body is determined in the second approximation.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

1/2 040 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--THE LIMITING HYPERSONIC FLOW PAST SOME CENTRAL SURFACES OF THE SECOND ORDER -U-

AUTHOR-(02)-OVCHINIKOVA, T.I., MAKUSHKIVA, YE.A.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK LENINGRADSKOGO UNIVERSITETA, NO 1, MATEMATIKA, MEKHANIKA, ASTRONOMIYA, 1970, NR 1, PP 109-119

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--HYPERSONIC FLOW, PRESSURE, ENTHALPY, FLOW PROFILE, FLOW DEFLECTION, DETACHED SHOCK WAVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/0388 STEP NO--UR/0043/70/000/000/0109/0119

CIRC ACCESSION NO--AP0055173

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

UNCLASSIFIED PROCESSING DATE--090CT70

2/2 040

CIRC ACCESSION NO--AP0055173

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THIS ARTICLE THE PROBLEM OF LIMITING THREE DIMENSIONAL HYPERSONIC FLOW PAST SOME CENTRAL SURFACES OF THE SECOND ORDER IS CONSIDERED. FORMULAS FOR CALCULATION OF PRESSURE, ENTHALPY AND SHOCK WAVE DETACHMENT ARE RECEIVED.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

USSR UDC: 539.374

MAKUSHOK, Ye. M., SEGAL, V. M., REZNIKOV, V. I., Physicotechnical Institute of the Academy of Sciences of the BSSR

"Computer Processing of Experimental Moiré Patterns"

Minsk, Doklady Akademii Nauk BSSR, Vol 16, No 6, Jun 72, pg 513-515

Abstract: A method is proposed for processing experimental patterns of the deformed state. The procedure embraces various uses of the moiré method and can be extensively used in experimental mechanics. The proposed method ensures optimum retention of the objectivity of the initial information after mathematical processing with regard to the physical conditions and peculiarities of the processes investigated. The accuracy of the computed values on all stages is commensurate with the accuracy of the initial quantities and basic premises of contemporary theory. The proposed method of approximation and smoothing it readily realized on computers and can be extended to cover other cases of the deformed state.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

USSR

UDC 627.73

SEVERDENKO, V. P., MAKUSHOK, Ye. M., and KLEBANOVICH, N. F.

"Stress-Deformation State in a Deposited Strip"

Minsk, Vestnik Akademii Nauk BSSR -- Seriya Fizika-Tekhnicheskikh Nauk, No 2, 1972, pp 5-9

Abstract: The article presents results of experiments conducted by the authors in the deposits of specimens made from materials with various types of rheological behavior, such as lead, colophony, and gelatin. The deformed state of the specimens was studied from coordinate grids overlaid on the surface of joints in the specimens splitting them into halves. The halves were then put together and compressed in a stamp with greased walls to reduce the friction. These tests allow one to compare the stress distribution and the deformations observed in optically sensitive materials and to equate the data obtained with the deformed coordinate grids. The authors are associated with the Physico-Technical Institute of the Belorussian Academy of Sciences.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

USSR

UDC 539.374

MAKUSHOK, YE.M., SEGAL, V.M. and REZNIKOV, V.I.

"Two-Way Estimate of Force Required for Drawing a Plate Through a Tapered Die"

Minsk, Vestsi Akedemii Navuk BSSR, Seryya Fizika-Teknichnykh Navuk, No 3, 1971, pp 17-24

Abstract: The two-dimensional analysis of stresses and velocities for a plate drawn through a tapered die is made. Polar coordinates are used.

Equations (11) giving the stress distribution and equation (12) giving the velocity distribution are derived. These equations contain several constants of integration.

The lower boundary of the solution is based on the sliding lines being the limit of plasticity. The corresponding force required for drawing the plate through the die is given by equation (18).

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

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MAKUSHOK, YE. M., et al., Vestsi Akedemii Navuk BSSR, Seryya Fizika-Teknichnykh Navuk, No 3, 1971, pp 17-24

The upper boundary of the solution is based on the velocity distribution. The corresponding drawing force versus percentage reduction of plate thickness is given on fig. 2 for several angles of taper and for friction coefficients of 0 and 0.1.

The optimum angle of taper versus percentage reduction of plate thickness for several values of friction coefficient is given on fig. 3.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

USSR UDC 539.4

SERENSEN, S. V., and MAKUTOV, N. A., Moscow

"Resistance of Low-Carbon Steel Welded Joint to Low-Cycle Loading as a Function of Properties of Individual Zones"

Kiev, Problemy Prochnosti, No. 12, Dec 70, pp. 25-33

Abstract: The conditions of deformation and rupture (both quasistatic and fatigue) are studied for a low number of loading cycles of a welded joint in connection with heterogeneity of deformation in the zone of the seam, parameters of the curve of cyclical deformation, initial strength, and plasticity. The resistance to low-cycle rupture of the metal of the welded joints (both manual and electric-slag welding) is determined by their static strength and plasticity and the parameters of the cyclical deformation loop. The metal in the zones of welded joints with a high ratio of yield point to ultimate strength is softened by low-cycle loading.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

MAKVETSOV, Ye. N.
29 Oct 71

101

FPD:CYBERNETICS

87. USSR

UDC 681.39

MAKVETSOV, Ye. N. and PEROTOV, N. G. (Penza)

SO: FOREIGN PRESS DIGEST
29 Oct 1971

"Method for Preprocessing Symbols in Reading Automata"

Moscow, Avtomatika i Telemekhanika, No 3, 1971, pp 159-161

Abstract: The authors propose a method for reducing redundancy in reading circuits by preprocessing the symbol so that its lines uniformly cover one cell width of the input matrix of the copy instead of carying in thickness. Connectivity of the image is also reestablished. The method is based on some properties of point sets.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

1/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--A THEORY OF A NONSYMMETRICAL TRANSISTOR -U-

AUTHOR-(02)-LYADOV, B.N., MAKVETSOV, YE.N.

COUNTRY OF INFO--USSR

SOURCE--UCH. ZAP. PENZENSK. POLITEKHN. IN-T (SCIENTIFIC NOYES. PENZA
REFERENCE--RZH-ELEKTRONIKA I YEYE PRIMENENIYE, NO 4, APR. 70, ABSTRACT NO
DATE PUBLISHED-------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--AYSMMETRIC BODY, TRANSISTOR, ELECTRONIC CIRCUIT MODELING,
ELECTRON HOLE, PNP JUNCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1542 STEP NO--UR/0000/70/000/001/0073/0080

CIRC ACCESSION NO--AR0135191

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

2/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AR0135191

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS PAPER CONSIDERS SOME PROBLEMS OF THE THEORY OF A NONSYMMETRICAL TRANSISTOR ON THE BASIS OF A SIMPLE TWO DIMENSIONAL MODEL. A SET OF EQUATIONS WHICH DESCRIBE THE PROCESSES IN A MULTIDIMENSIONAL MODEL OF A DIFFUSION, DRIFT TRANSISTOR IS REDUCED TO A SET OF TWO EQUATIONS WITH THE HELP OF ASSUMPTIONS ON THE QUASI NEUTRALITY OF THE BASE OF A DRIFTLESS TRANSISTOR OF THE ALLOY TYPE AND ON THE SMALLNESS OF THE DENSITY OF THE ELECTRON CURRENT AS COMPARED WITH THE HOLE COMPONENT OF THE TOTAL CURRENT DENSITY OF A TYPE P-N-P TRANSISTOR. THE BOUNDARY CONDITIONS ON THE SURFACE OF THE FREE FACES OF THE TRANSISTOR BASE TAKE SURFACE RECOMBINATION INTO ACCOUNT. AS A RESULT OF THE SOLUTION OF THE ORIGINAL SET OF EQUATIONS, WITH GIVEN BORDER CONDITIONS AND THE GEOMETRY OF THE ADVICE, EXPRESSIONS ARE OBTAINED FOR THE CURRENTS OF THE EMITTER AND COLLECTOR AND FOR THE TRANSFER COEFFICIENT OF THE CURRENT IN NORMAL AND INVERSE CONNECTED NONSYMMETRICAL TRANSISTORS.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

USSR

UDC: 51:155.001.57:681.3.06

SADYKOV, S. S., FEDOTOV, N. G., MAKVETSOV, Ye. N.

"A Universal Algorithm for Recognizing Handwritten and Printed Symbols"

V sb. Vopr. kibernet. i vychisl. matem. (Problems of Cybernetics and Computer Mathematics--collection of works), Vyp. 36, Tashkent, 1970, pp 35-43 (from RZh-Kibernetika, No 1, Jan 71, Abstract No 1V654)

Translation: An algorithm is proposed for operation of a reading machine which, in the authors' opinion, permits perception of information on a symbol regardless of the specific characteristics of its graphic representation. An alphabet of 33 letters and 10 digits is examined. The directions of the outline of the symbol were taken as the characteristics for recognition. It is proposed that ruled blanks be used for writing the symbols. This standardizes writing of the symbols to some extent, and what is important, ensures separate writing of letters. The algorithm provides for transferring an image of the symbol to an operational memory, the symbol being recorded on a ferrite matrix analogously to its recording on paper. Redundant information is then eliminated during the operation of refinement of the symbol. After refinement of the outline is completed, the operation of "reading" of the symbol begins, i. e. the image of the symbol is replaced by an enumeration of the directions of its outline. The recognition process

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

SADYKOV, S. S. et al., Vopr. kibernet. i vychisl. matem., Vyp. 36, Tashkent, 1970, pp 35-43

is completed by comparing the resultant sequence of directions with reference sequences. M. Chelyshev.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

USSR

UDC 621.382.3

LYADOV, B. N., MAKVETSOV, YE. N.

"A Theory of a Nonsymmetrical Transistor"

Uch. zap. Penzensk. politekhn. in-t (Scientific Notes. Penza Polytechnical Institute), Vyp. 1, pp 73-80 (from RZh-Elektronika i yeye primeneniye, No 4, Apr 70, Abstract No 4B207)

Translation: This paper considers some problems of the theory of a nonsymmetrical transistor on the basis of a simple two-dimensional model. A set of equations which describe the processes in a multidimensional model of a diffusion -- drift transistor is reduced to a set of two equations with the help of assumptions on the quasi-neutrality of the base of a driftless transistor of the alloy type and on the smallness of the density of the electron current as compared with the hole component of the total current density of a type p-n-p transistor. The boundary conditions on the surface of the free faces of the transistor base take surface

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

USSR

LYADOV, B. N., et al, Uch. zap. Penzensk. politekhn. in-t, Vyp. 1, pp 73-80, (from RZh-Elektronika i yeye primeneniye, No 4, Apr 70 Abstract No 4B207)

recombination into account. As a result of the solution of the original set of equations, with given border conditions and the geometry of the device, expressions are obtained for the currents of the emitter and collector and for the transfer coefficient of the current in normal and inverse connected nonsymmetrical transistors. 1 ill. 3 ref. O.S.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

USSR

UDC 669.15'24-194:620.17

BERESNEV, G. A., KOZEL'SKIY, A. V., LUK'YANOV, V. V., MALAFEYEV, A. S. and PERKAS, M. D.

"High-Strength Carbon-Nickel Steel"

Moscow, Metallovedeniye, No 9, Sep 72, pp 64-66

Abstract: The mechanical properties of C-Ni steels with 10-14% Ni were investigated. The chemical compositions of the steels are as follows:

	C	Ni	Mo	W	V	Co	Si	Mn	S+P
UN-10	0.32	10	----	----	----	----	0.15	0.20	0.012
UN-12	0.32	12	----	----	----	----	0.12	0.21	0.010
UN-14	0.33	14	----	----	----	----	0.17	0.21	0.011
UNS	0.40	14	0.35	0.55	0.4	----	0.10	0.80	0.040
UNS-20	0.17	14	0.38	0.60	0.4	----	0.11	0.05	0.020
UNS-20K	0.17	13	0.22	0.43	0.15	5.5	0.10	0.06	0.020
UNS-50K	0.54	10	0.68	----	0.3	4.3	0.10	not determined	

Ingots weighing 30 kg were vacuum-induction melted and rolled into strip 5 mm thick, which was subjected to normalization at 950°C and high-temperature tempering at 500°C. In the hardened state, the UN and UNS steels have high strength and ductility. The highest strength of UN steels can be achieved by quenching

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

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BERESNEV, G. A., et al., Metallovedeniye, No 9, Sep 72, pp 64-66

from 675°C. Also, the impact strength is lower than after quenching from 750°C. High-nickel steels with a tensile strength of 190-223 kgf/mm^2 had an impact strength of 5-8.5 kgf-m/cm^2. UNS-50K steel had the highest strength but less elongation and reduction in area. Alloying C-Ni steels with Mo, W, and V (0.2-0.5%) significantly increases their resistance to tempering, while alloying with cobalt causes additional strengthening with $\Delta\sigma \approx 20$ kgf/mm^2 at 5.5% Co, identical in magnitude in the hardened and tempered state. The increased strength as a result of increased carbon content is high only in the hardened state or after low-temperature tempering. The change of ductility properties with increased strength shows that UNS and UNS-50K C-Ni steels have an elongation of 7-15% and reduction in area of 30% for a strength of 200 kgf/mm^2. For UNS-50K steel adequate ductility is provided by low-temperature tempering, while very high strength (265-280 kgf/mm^2) is preserved. All investigated steels had a fine granular structure, which contributes significantly to their high mechanical properties. 2 figures, 2 tables.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

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UDC 612.017.1.014.46:615.217.32

MALAFEYEVA, E. V., Chelyabinsk Medical Institute

"Change in the Level of Some Nonspecific Humoral Factors of Immunity Under the Influence of Several Vegetotropic Preparations"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 8, 1971, p 146

Abstract: In experiments with rabbits, the effects of two cholinomimetics (acetylcholine and neostigmine) and a cholinolytic (atropine) were studied on the following indexes of natural immunity: level of bactericidal activity of blood serum and content of complement, properdin, lysozyme and normal antibodies to E. coli. Shifts in the number of leukocytes in peripheral blood and the intensity of true and pseudocholinesterase activity were traced at the same time. The cholinomimetics had similar effects on the humoral mechanisms of immunity in increasing the titer of properdin and normal antibodies and decreasing the lysozyme content of serum. Atropine, however, caused less pronounced shifts in the various indexes under study.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

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UDC 619:616.986.7:636.8(470.44)

MALAFEYEVA, L. S., RUMYANTSEVA, Ye. V., and ABRAMSON, L. A., Saratov Medical Institute and Saratovskaya Oblast Sanitary Epidemiological Station

"Infection of Cats With Leptospira in the Town of Saratov"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 11, 1971, p 147

Abstract: Eleven of 118 cats caught in the central area of Saratov and investigated for 13 types of Leptospirae by the agglutination-lysis reaction yielded positive results. Antibodies to L. icterohaemorrhagiae were found in seven cats, L. pomona in four, L. tarassowi in one, L. grippotyphosa in one, and L. australis in one. One of these had antibodies to two serotypes and another one to three serotypes. The titers ranged from 1:100 to 1:160. Although no quantitative evaluation of the epidemiological significance of this relatively high frequency of leptospirosis among cats can be made, it is believed that diseased household pets may well be the cause of sporadic leptospirosis in man. While 28 cases were recorded in Saratov in 1958-1965, other cases might have occurred without being properly diagnosed. It is therefore recommended tests for Leptospirae be performed routinely in patients with fever.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

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UDC 669.721.018.9.4(088.8)

MALAKHOV, A. I., ASTAULOV, V. S.

"Procedure for Purifying Liquid Magnesium Alloys"

USSR Author's Certificate No 273431, Filed 25 Nov 68, Published 21 Sep 70 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G221P)

Translation: A procedure for purifying liquid Mg-alloys by filtering them through a layer of fluoride salts is distinguished by the fact that the fluoride salts in the solid state are used as the filtering layer to improve the casting quality.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

1/2 023 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--FREQUENCY STABILIZATION AND CONVERSION OUTPUT SIGNAL SPECTRAL LINEWIDTH -U-

AUTHOR-(02)-MALAKHOV, A.N., SHEPELEVICH, L.G.

COUNTRY OF INFO--USSR

SOURCE--RADIOTEKHNIKA I ELEKTRONIKA (RADIO AND ELECTRONICS), 1970, NO 2, PP 328-333

DATE PUBLISHED-------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--FREQUENCY STABILITY, FREQUENCY CONVERSION, FREQUENCY DIVIDER, SPECTRAL LINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1860 STEP NO--UR/0109/70/000/002/0328/0333

CIRC ACCESSION NO--AP0130687

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

2/2 023 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0130687

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE NONLINEAR CALCULATION IS MADE OF THE NATURAL SPECTRAL LINEWIDTH OF THE OUTPUT SIGNAL OF A FREQUENCY STABILIZATION AND CONVERSION SYSTEM (FOR MONOCHROMATIC INPUT). IT IS SHOWN THAT IN CONTRAST WITH MULTIPLIERS IN FREQUENCY SYNCHRONIZATION SYSTEMS AT THE SUBHARMONICS AND IN DIVIDERS THERE IS A BROADENING OF THE SPECTRAL LINE.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

USSR UDC 621.314.58(088.8)

ZAGORSKIY, V. T., KOZLYAYEV, Yu. D., DVORKINA, G. Sh., MALACHOV, A. P., SHTERNSHIS, V. Yu.

"Direct Thyristor Frequency Converter with Unit for Forced Commutation"

USSR Author's Certificate No 258444, filed 10 July 68, published 14 Apr 70 (from RZh--Elektronika i yeye primeneniye, No 1, January 1971, Abstract No 1B448P)

Translation: The circuit for a converter of 3-phase a-c voltage of stable frequency into 3-phase a-c voltage of controlled frequency contains: a rectifier block (18 thyristors), commutating capacitors, cathode and anode groups of semiconductor diodes, and a rectifier commutating device (6 thyristors). It is proposed to supplement the circuits with two capacitors connected between the zero point and the anode and cathode buses of the commutation device. The capacitors mentioned shunt the reactance of the phases of the feeding transformer and assist acceleration of the commutation process. Balanced thyristors are connected into the circuit of the supplementary capacitors for limitation of the pulse currents, while in the case of formation of a short circuit on the load, unblocking pulses are not presented to the symmetrical thyristors. 1 ill. A. S.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

USSR UDC 539.12.075.2:681.3

MALAKHOV, A. V., SUYETNOV, O. N.

"Device for Automatic Calculation for the Results of Relative Radiometric Measurements with Background Radiation Subtracted"

Tr. Soyuz. NII Priborostr. [Works of Union Scientific Research Institute for Instrument Building], 1972, No 17, pp 144-153, (Translated from Referativnyy Zhurnal, Metrologiya i Izmeritel'naya Tekhnika, No 7, 1972, Abstract No 7.32.1360).

Translation: A specialized arithmetic device and its operating principle for performance of relative difference mensurements using a two-channel radiometric apparatus are described. The device allows compensation of the background with constant spectral distribution and variable intensity with high accuracy and calculation of the result of the analysis. The parameters of the device developed are defended and its block diagram and diagrams of individual units are presented. A report is presented on the experimental checking of difference measurements using the device described.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

1/2 027 UNCLASSIFIED PROCESSING DATE--09DEC70

TITLE--POROUS POLIMERS AS ADSORBENTS AND SUPPORTS IN GAS CHROMATOGRAPHY -U-

AUTHOR-(04)-USTINOVSKAYA, I.A., GAVRILINA, L.YA., MALAKHOV, B.B., YANSHIN, YA.I.

COUNTRY OF INFO--USSR

SOURCE--IZVESTIYA SIBIRSKOGO OTDELENIYA AKADEMII NAUK SSSR, NO 4, SERIYA KHIMICHESKIKH NAUK, 1970, NR 2, PP 18-22

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--POLYMER, ADSORPTION, GAS CHROMATOGRAPHY, POROSITY/(U)POLYSORBI POLYMER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1377 STEP NO--UR/0289/70/000/002/0018/0022

CIRC ACCESSION NO--AP0112857

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

2/2 027 UNCLASSIFIED PROCESSING DATE--09OCT70
CIRC ACCESSION NO--AP0112857
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A GAS CHROMATOGRAPHIC BEHAVIOR POLYSORB-1 HAS BEEN INVESTIGATED. IT HAS BEEN SHOWN THAT POLYSORB-1 SHOULD BE CLASSIFIED AS A WEAKLY SPECIFIC SORBETN III TYPE BY KISELEV. POLISORB MAY BE USED FOR THE GAS CHROMATOGRAPHIC ANALISIS OF THE CATALITIC OXIDATION PRODUCTS. FACILITY: INSTITUT KATALIZA SO AN SSSR, NOVOSIBIRSK.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

MALAKHOV, B.M.

JPRS 58824

23 April 1973

Smmr JPRS 58824 23 April 1973

UDC [528.22:550.3121: 551.461.6

MARINE GEODESY

[Article* by B.M. Malakhov; Moscow, Geodeziya i Kartografiya, Russian, No 2, 1973, pp 10-22]

In connection with the intensive exploitation of the riches in the world ocean, geodesy has become confronted by a series of new scientific-engineering problems, the search for the solution to which has led to the development of a new trend in geodesy, namely, marine geodesy. This term is not new: under such a heading as early as 1904, the book by Vice Admiral S.A. Sarychev was published. During the active session of the 15th General Assembly of the International Union of Geodesy and Geophysics (IUGG), having met in Moscow in 1971, the term "marine geodesy" was recognized by geodesists throughout the world.

As a branch of geodesy, marine geodesy has been called upon to study the methods involved in measurements for the purpose of obtaining the reciprocal position of points at sea and in a water environment, and the methods of processing these measurements. Marine geodesy is also required to examine the questions involved in determining the shape and dimensions of Earth; to study the variations in the form and gravitational field of Earth, associated with the influence of internal and external processes occurring on Earth and beyond its limits.

With geodetic methods, we can conduct studies on the disclosure of interaction between terrestrial and ocean tides, in Earth's rotation related to the tidal lead, irregularity in Earth's rotation related to the tidal and atmospheric circulations, spatial differences between the levels of land and

* Based on materials from 15th General Assembly of International Union of Geodesy and Geophysics (IUGG).

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ocean tides, actual dimensions of ocean basins and coastal, seasonal, secular), variations in the form of the earth through time in regions of abyssal ocean deeps, tidal waves in the deep part of the ocean, tsunamis of seismic and meteorological origin for the purpose of their avoidance, seasonal fluctuations in sea level, variations in sea level related to meteorological phenomena, topography of the ocean surface, heights of wind-caused waves and occurrence regions of swell, wind speed at sea level, differences in heights between isobaric surfaces of the ocean and geoid (seasonal, annual, secular), and so forth.

For the accomplishment of the enumerated types of studies, it is necessary to develop techniques and equipment for: direct measurements of distances between an artificial earth satellite (AES) and the ocean surface; astronomic-geodetic and astronomic-gravimetric measurements from moving ships and aircraft under marine conditions; measurements of the acceleration of gravitational force with the aid of a satellite having a "gravitational orbit"; development of highly-accurate gravimeters with the utilization of photographic, light detection, radio tracking and radio-acoustic systems; establishment of basic geodetic points in regions of oceanic deeps and also in those points in the ocean where the tides are nonexistent; the creation of base lines in remote basins for calibrating the geodetic and radio-navigation equipment; development of underwater and above-water geodetic networks and special networks with a survey base; creation of reference gravimetric networks on the ocean surface, in the water environment and on its bottom, and also for measurements on moving ships and aircraft; performance of aerial photographic surveys and space photographing of shore from moving ships; automatic photographic processing of shore and shallows; automated and automatic processing of data obtained from hydroacoustic, photographic and other measurements.

A study of the shape and external gravitational field of Earth comprises the classical problem in geodesy in general and in marine geodesy in particular. The further expansion of our concepts concerning the form of the geoid and external gravitational field of Earth, and also the solution of the specific problems in the oceanic dynamics by gravimetric methods is possible with a significant increase in the density of gravimetric points over the entire surface of Earth and an increase in the accuracy of gravimetric measurements, for which much time and resources will be required. Obviously in the near future, for these purposes, use will be made of techniques which have been and are being widely used on land: namely the astronomic-geodetic, astronomic-gravimetric and satellite methods.

"A satellite having a gravitational orbit will move as if it were affected only by gravitational forces.

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The employment of the astronomic-geodetic technique for studying the form of a geoid at sea has certain advantages as compared with its application on land since in the given case, the astronomical determinations are performed directly on the surface of the geoid (at the level of the ocean) where the orthometric heights equal zero; this excludes the need for reduction. However, this does not compensate for those difficulties which arise in the performance of astronomic and geodetic measurements under marine conditions (on a mobile base). Evidently the application of the astronomic-geodetic technique under marine conditions will be justified only in the case of determining the deviation of perpendicular lines with an error close to 1". The given condition is one of the main limitations involved in using the astronomic-geodetic method under marine conditions since the accuracy of modern determinations of the deviations of perpendicular lines from the astronomic determinations is appreciably lower. Another restriction rests in the circumstance that the geodetic coordinates receive a relative reference ellipsoid and not a relative Earth-wide ellipsoid; therefore, the accuracy involved in determining the aberrations of the plumb line decrease rapidly with an increase in distance from the original geodetic points. Moreover, the determination of a ship's location with the required accuracy is not always possible with radio-geodetic methods.

The satellite (sputnik) astronomic-geodetic method of studying the form of a geoid does not differ essentially from the foregoing. The only difference is that the geodetic latitude, longitude and height of geoid are not determined from astronomic observations but from measurements of the satellite's trajectories. The following two important advantages are inherent in this technique: 1) we determine the absolute aberrations of the plumb lines and 2) the geoid's heights obtained directly by reduction to average level of ocean, since the orthometric heights at sea level equal zero. A disadvantage of the given technique is the fact that the precision of measurements depends entirely on the errors involved in determining the coordinates of sputniks and their geodetic and astronomic coordinates. In addition, the movement of a vessel obstructs the conduct of additional measurements in the same point (the given shortcoming can be partly eliminated by determining the travel speed of ship and also by a fixation of its location relative to a local system of coordinates established by means of hydroacoustic systems situated on the ship and on the ocean bottom).

The gravimetric method for studying the form of a geoid is based on utilizing the relationship which exists between the form of geoid and gravitational force. Based on the anomalies

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of gravitational force, we can calculate the deviations of the geoid's form from an ellipsoid based on the Stokes equations and coordinate of plumb line observations based on the Vening-Meinesz formulas. However, by itself, the gravimetric method is incomplete. In addition, in deriving the deviations of a plumb line and the heights of a geoid, it is necessary to have a dense network of gravimetric measurements around definite points, and an absolute height of geoid at a certain initial point. The accuracy of measuring the heights of a geoid and the deviations of the perpendicular lines depends largely on the accuracy of the actual gravimetric measurements which are being conducted from moving objects where a considerable influence on accuracy is exerted by the systematic errors comprising the result of perturbing accelerations deriving from choppy seas and the inconstancy in the ship cruising speed.

The astronomic-gravimetric method has greater potentialities than the gravimetric technique. Utilizing the measure of deviation of the perpendicular line based on the Vening-Meinesz formulas and also determining the absolute heights of geoid from astronomic and geodetic measurements, we can obtain the profile of a geoid relative to an ellipsoid. The distances between astronomic points with this method are permitted to be fairly great. The utilization of the given method is once again limited by the requirement for performing gravimetric measurements on a large scale and with adequately high accuracy. If we consider the circumstance that the prospecting for minerals will nevertheless require the conduct of a detailed gravimetric survey, evidently the technique in question will have a definite potential.

The sputnik method for studying the Earth's shape is based on the existence of a definite relationship between the variations in orbital parameters of AES and gravitational anomalies. However, with this procedure, we determine only the general features of a geoid and also the largest anomalies. The effectiveness of this method can be raised by employing the gravimetric measurements which are conducted in the ocean.

The study of the geoid's form by means of direct measurements with the aid of a radio-altimeter mounted on a sputnik has greater advantages as compared with the previous method. It is postulated that with the aid of a sputnik altimeter, we can reveal the waves of a geoid with an extent up to 100 km, wherein the heights of geoid will be determined with an error not greater than 1 m. Such an extent of detail will permit us to indicate the topographic and structural features of the ocean surface and also to obtain other oceanographic information.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

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UDC 681.326.35:621.374.3

GLEBOV, B. A., and MALAKHOV, F. S.

"Principles for the Construction of Static Flip-Flops With Double-Operating Thyristors"

Tr. Novocherkas. Politekhn. In-ta (Works of Novocherkassk Polytechnical Institute), 223, 1970, pp 140-148 (from Referativnyy Zhurnal -- Avtomatika, Telemekhanika, i Vychislitel'naya Tekhnika, No 8, 1971, Abstract No 8B153 by T. R.)

Translation: This article presents the results of the development of new circuits using only one double-operating thyristor for flip-flops with a complementing (common) input. Only with the help of heteropolar pulses is it possible to control the very simplest flip-flop circuit made from a double-operating thyristor, the flip-flop being connected to the power source through the resistance of the load. The necessity of having a special alternating-polarity pulse generator as a control source is a defect in the given circuit: that is, it limits its sphere of application. 8 illustrations, 4 titles in bibliography.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

1/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--YIELD OF CARBONIZATION PRODUCTS FROM HYDROCHLORIC ACID LIGNIN -U-

AUTHOR-(03)-MALAKHOV, G.A., PONOMAREVA, V.V., KIREYEVA, R.N.

COUNTRY OF INFO--USSR

SOURCE--GIDROLIZ. LESOKHIM. PROM. 1970, 23(2), 25-6

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MATERIALS

TOPIC TAGS--LIGNIN, WOOD PRODUCT, THERMAL EFFECT, STAINLESS STEEL/(U)1KH18N9T STAINLESS STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0971 STEP NO--UR/0328/70/023/002/0025/0026

CIRC ACCESSION NO--AP0124630

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

2/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124630

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BIRCHWOOD AND PINEWOOD LIGNIN (I) SAMPLES WERE CARBONIZED IN A HEAT RESISTANT STEEL (1KH18N9T) RETORT AT 400-600DEGREES. A DIAGRAM OF THE CARBONIZATION APP. AND ITS MODE OF OPERATION ARE PRESENTED. THE YIELDS OF THE CARBONIZED I AND OF PYROLIGNEOUS DISTILLATE (II) ARE INVERSELY PROPORTIONAL TO THE TEMP. ELEVATION RATE. THE TOTAL YIELD OF CARBONIZED I PLUS GASES AND OF II PLUS CARBONIZED TARS WAS RELATIVELY CONST. AT A GIVEN TEMP.

FACILITY: KANSK. GIDROLIZ. ZAVOD, KANSK, USSR.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

USSR UDC 621.385.032.26:621.385.6:621.317.3(088.8)

MURAV'YEV, A.A., MALAKHOV, I.K., ZAMOROZKOV, B.M., RADYUK, O.M., SINITSYN, P.R., YUDZON, O.I.

"Method Of Investigation Of The Structure Of An Electron Beam"

USSR Author's Certificate No 265176, filed 18 Sept 67, published 17 June 70 (from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2A124P)

Translation: A method is proposed for investigation of the structure of an electron beam without the introduction into it of perturbations which are employed in the evaluation of the quality of electron beams under the dynamic operating conditions of electrovacuum microwave devices. The method is based on use of the glow of the beam and makes it possible to observe simultaneously on the screen of a monitoring television device the form of the beam and the distribution of the intensity of its glow at any cross section of the beam being inspected, and also operationally to change the parameters of the beam, visually selecting the form of the beam and the distribution of its density. G.B.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

USSR

UDC: 629.7.036.54:536.46

ABUGOV, D. I., BAZAROV, V. G., and [redacted], N. N.

"Method for Suppressing High Frequency Oscillation in Pressure"

USSR Author's Certificate No 309143, filed 22 Mar 66, published 15 Sep 71 (from RZh-24. Aviatsionnyye i Raketnyye Dvigateli, Moscow, No 3, Mar 1972, Abstract No 3.34. 104 P)

Translation: A method is patented for suppressing high frequency oscillations in pressure primarily in the KS (combustion chamber). This is done by inducing oscillations in the rate of fuel discharge through the injector with a frequency equal to the frequency being suppressed and with an amplitude which exceeds the maximum amplitude of random perturbations. Efficiency is increased by changing the phase of the induced oscillations to the opposite of the oscillation level achieved in the chamber which exceeds the given value. Resume.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

USSR

UDC 615-391

KOLESNIKOV, I. S., BALLYUZEK, F. V., SHANIN, YU. N., KOSTYUCHENKO, A. L., and MALAKHOV, S. F., Hospital Surgical Clinic, Military Medical Academy imeni S. M. Kirov, Leningrad

"Experience in the Use of the Hemoglobin-Containing Preparation Erigem as a Blood Substitute"

Leningrad, Bestnik Khirurgii imeni I. I. Grekova, Vol 108, No 5, May 72, pp 95-98

Abstract: As distinguished from blood extenders that merely bring the plasma volume to normal, the blood substitute Erigem, which contains hemoglobin that has been freed of stroma, transports O_2 and maintains the respiratory function of the blood. Maintenance of this function until it can be restored by a blood transfusion would be one of the characteristics of an ideal blood substitute. Erigem was developed in 1962-64 at the Scientific Research Institute of Hematology and Blood transfusion in Leningrad. The clinical application of small doses of Erigem had been investigated thoroughly, but data on the effects of large doses were lacking. In the work described in this instance, Erigem was administered in large doses to 18 patients with pulmonary disturbances on the first day after surgery of the lungs. In cases of this type, an insufficient respiratory function of the blood is often

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USSR

KOLESNIKOV, I. S., et al., Vestnik Khirurgii imeni I. I. Grekova, Vol 108, No 5, May 72, pp 95-98

encountered in connection with a large blood loss, insufficient respiratory function of the erythrocytes of transfused blood, and a pronounced oligocythemic hypovolemia. Lyophilized Erigem was diluted with Ringer's solution and infused into the bloodstream in single doses of 14 ml per kg body weight (700-1,100 ml) corresponding to approximately 30 g hemoglobin. The preparation exerted a marked hemodynamic effect, increasing the arterial pressure to normal and reducing the tachycardia. It had an apyrogenic effect and exerted a distinct volemic action that continued for the 6-7 hrs during which the hemoglobin that had been introduced circulated in the body. The oxygen capacity of the blood increased. The arterio-venous difference of the plasma with respect to O_2 was 50% on the average after the administration of Erigem. These and other data indicated that Erigem had a satisfactory effect in transporting O_2 in the organism. No adverse reactions to the injections of Erigem were observed. The kidney function was normal after the injections, but caution is indicated in administering large doses of Erigem to patients with kidney disturbances. Erigem can be kept in storage for approximately 2 yrs.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

1/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--PECULIARITIES OF FISSION PRODUCT CONCENTRATION DISTRIBUTIONS OVER OCEANS IN THE TROPICAL ZONE AND THEIR CONNECTION WITH ATMOSPHERIC

AUTHOR-(03)-DMITRIEVA, G.V., KRASNOPEVTSEV, YU.V., MALAKHOV, S.G.

COUNTRY OF INFO--USSR, PACIFIC OCEAN

SOURCE--J. GEOPHYS. RES. 1970, 75(18), 3675-85

DATE PUBLISHED-------70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY, ATMOSPHERIC SCIENCES

TOPIC TAGS--FISSION PRODUCT, OCEAN RADIOACTIVITY, PARTICLE DISTRIBUTION, ATMOSPHERIC CIRCULATION, TROPICAL ATMOSPHERE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1001 STEP NO--US/0000/70/075/018/3675/3685

CIRC ACCESSION NO--AP0136428

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

2/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136428

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NEW DATA ON THE LATITUDE DISTRIBUTION OF RADIOACTIVE FISSION PRODUCTS OVER OCEANS IN REGIONS OF THE TROPICAL ZONE ARE GIVEN FOR THE PERIOD 1967-1968. THE DATA SHOW A CONSIDERABLE HETEROGENEITY OF RADIOACTIVE FISSION PRODUCTS IN AIR IN THE TROPICAL ZONE OVER THE INDIAN OCEAN AND IN THE WESTERN PACIFIC OCEAN. THIS HETEROGENEITY IS EXPLAINED BY INTRUSION INTO THE TROPICAL ZONE OF PARCELS OF MORE RADIOACTIVE AIR FROM SUBTROPICAL TEMPERATE LATITUDES OF THE WINTER HEMISPHERE BEHIND QUASI MERIDIONAL COLD FRONTS. THE RADIOACTIVE AIR ENTERED THE EQUATORIAL REGION AND, UNDER CERTAIN SYNOPTIC CONDITIONS, MOVED ACROSS THE EQUATOR INTO THE AIR CIRCULATION OF THE OPPOSITE HEMISPHERE. AIR TRANSFER FROM THE SOUTHERN TO THE NORTHERN HEMISPHERE IS PRESUMABLY ASSISTED BY TYPHOONS THAT HAVE BEEN TRANSFORMED INTO LARGE SCALE CYCLONES OVER THE PACIFIC OCEAN.

FACILITY: HYDROMETEOROL. SERV., MOSCOW, USSR.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

1/2 026 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--RADIOACTIVE AEROSOL DISTRIBUTION IN THE MIDDLE AND UPPER TROPHOSPHERE OVER THE USSR IN 1963-1968 -U-

AUTHOR-(05)-NAZAROV, L.E., KUZENKOV, A.F., MALAKHOV, S.G., VOLOKITINA, L.A., GAZIEV, YA.I.

COUNTRY OF INFO--USSR

SOURCE--J. GEOPHYS. RES. 1970, 75(18), 3575-88

DATE PUBLISHED-------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--RADIOACTIVE AEROSOL, TROPOSPHERE, FISSION PRODUCT, STRATOSPHERE, JET STREAM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0933 STEP NO--US/0000/70/075/018/3575/3588

CIRC ACCESSION NO--AP0136364

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

2/2 026 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136364

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DISTRIBUTION OF RN DAUGHTERS AND CONCN. OF AEROSOL FISSION PRODUCTS IN THE TROPOSPHERE WERE MEASURED OVER THE USSR DURING SEVERAL PERIODS FROM 1963 TO 1968. AN INTENSIVE FISSION PRODUCT TRANSPORT FROM THE STRATOSPHERE TO THE TROPOSPHERE OCCURS ON THE CYCLONIC SIDE OF THE JET STREAM. AS A RULE, THE INCLUSION OF THESE PRODUCTS IN THE SURFACE AIR IS OBSERVED ON THE ANTICYCLONIC SIDE OF THE JET STREAM. THE SIMPLEST THEORETICAL SCHEME IS GIVEN TO DESCRIBE THE VERTICAL DISTRIBUTION OF RN AND FISSION PRODUCT CONCNS. IN THE TROPOSPHERE; THE THEORY TAKES INTO ACCOUNT THE VERTICAL TURBULENT EXCHANGE COEFF. AND VERTICAL MOTION. THE DIRECTIONS OF VERTICAL MOTION, ESTD. FROM THE VERTICAL DISTRIBUTION OF BOTH RN AND FISSION PRODUCTS IN THE TROPOSPHERE, AGREE VERY CLOSELY WITH METEOROL. DATA. FACILITY: HYDROMETEOROL. SERV., INST. EXPTL. METEOROL., OBNINSK, USSR.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

1/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--STRONTIUM 90 FALLOUT DISTRIBUTION AT MIDDLE LATITUDES OF THE NORTHERN AND SOUTHERN HEMISPHERES AND ITS RELATION TO PRECIPITATION -U-

AUTHOR-(02)-MALAKHOV, S.G., PUDOVKINA, I.B.

COUNTRY OF INFO--USSR

SOURCE--J. GEOPHYS. RES. 1970, 75(18), 3623-8

DATE PUBLISHED-------70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY, ATMOSPHERIC SCIENCES

TOPIC TAGS--STRONTIUM_ISOTOPE, RADIOACTIVE FALLOUT, ATMOSPHERIC PRECIPITATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0465 STEP NO--US/0000/70/075/018/3623/3628

CIRC ACCESSION NO--AP0135928

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

2/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0135928
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DEPENDENCE OF PRIME90 SR DEPOSITION ON PPTN. WITHIN EACH 10DEGREES LATITUDE BELT HAS INVESTIGATED. NO SATISFACTORY LINEAR CORRELATIO IS FOUND FOR UNDIFFERENTIATED MEASUREMENTS OBTAINED UNDER DIFFERENT CLIMATIC CONDITIONS. REGIONS IN WHICH THE DATA DEVIATE SYSTEMATICALLY FROM THE GENERAL TREND OF RESULTS IN EACH LATITUDE BELT ARE SINGLED OUT. A SATISFACTORY LINEAR CORRELATION FOR MOST OF THE DATA HAS BEEN OBTAINED FOR 4 SEASONS OF THE YEAR BETWEEN 50 AND 60DEGREESN AND FOR THE 1ST AND 2ND QUARTERS BETWEEN 30 AND 40DEGREESN AND 40 AND 50DEGREESN. IN THE LATTER CASES, THE 3RD QUARTER IS CHARACTERIZED BY THE LARGEST DEVIATIONS OF THE RESULTS FROM A LINEAR DEPENDENCE. THE REGRESSION EQUATIONS FOR THE DEPENDENCE OF PRIME90 SR DEPOSITION ON PPTN. IN EACH LATITUDE BELT ARE GIVEN. FACILITY: HYDROMETEOROL. SERV., INST. EXPTL. METEOROL., OBNINSK, USSR.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

1/2 011 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--UTILIZATION OF RADIOACTIVE TRACERS IN THE STUDY OF GLOBAL ATMOSPHERIC PROCESSES -U-

AUTHOR--KAROL, I.L., KRASNOPEVTSEV, YU.V., MALAKHOV, S.G., PETROSYANTS, M.A.

COUNTRY OF INFO--USSR

SOURCE--METEOROLOGIYA I GIDROLOGIYA, 1970, NR 6, PP 92-101

DATE PUBLISHED--------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES

TOPIC TAGS--RADIOACTIVITY, RADIOACTIVE TRACER, AIR, ATMOSPHERIC PRECIPIATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/1042 STEP NO--UR/0050/70/000/006/0092/0101

CIRC ACCESSION NO--AP0104440

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

2/2 011 UNCLASSIFIED PROCESSING DATE--11SEP70.
CIRC ACCESSION NO--AP0104440
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROGRAMME OF UTILIZING THE OBSERVATIONS OF AIR RADIOACTIVITY AND RADIOACTIVE PRECIPITATION FOR THE STUDY OF GENERAL ATMOSPHERE CIRCULATION DURING THE PERIOD OF GARP IMPLEMENTATION IS STATED.

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USSR

UDC 541.128

VOL'KENSHTEYN, F. F., PEKA, G. P., and MALAKHOV, V. V., Institute of Physical Chemistry, Academy of Sciences USSR, Moscow and Kiev State University imeni T. G. Shevchenko

"The Effect of Adsorption on the Luminescence of Semiconductors. II. Exciton Luminescence"

Moscow, Kinetika i Kataliz, Vol 14, No 5, Sep/Oct 73, pp 1269-1273

Abstract: Theoretical and experimental study was carried out on the effect of adsorption on exciton luminescence of semiconductors, which results from the annihilation of light-generated excitones on non-ionized admixture centers inside the crystals. The measurements were carried out in the infrared range of luminescence of Cu_2O (λ_{max} = 0.96 mμ). It was established that adsorption of water and oxygen on Cu_2O leads to considerable extinction of the luminescence. The conclusion was reached that the principal mechanism of the adsorption effect on exciton luminescence of Cu_2O is the increased rate of surface annihilation of excitones resulting from the appearance of nonradiating annihilation centers of the adsorption type origin.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

USSR

UDC 541.128

VOL'KENSHTEIN, F. F., PEKA, G. P., MALAKHOV, V. V., Institute of Physical Chemistry, USSR Academy of Sciences, Moscow

"Effect of Adsorption on Luminescence of Semiconductors. I. Recombination Luminescence"

Moscow, Russian, Kinetika i kataliz, vol 14, No 4, Jun-Aug 73, pp 1052-1057

Abstract: Chemisorbed particles may affect the recombination luminescence of semiconductors by causing a change on the surface or they may act as surface centers of recombination. These effects were studied with CdS monocrystals, the adsorbates being water vapor, air, oxygen, and ozone. Changes in the luminescence intensity due to an external electric field and to adsorption and changes in conductivity due to adsorption were measured. All the adsorbates studied caused a decrease in the photoconductivity of the CdS crystals and quenching of the luminescence. No new spectral bands were recorded. With the same photoconductivity change, luminescence quenching due to adsorption was either the same as or greater than that due to the transverse electric field. The adsorption effect was greater in the red (0.76-0.78 μm) than in the infrared (1.03 μm).

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MALAKHOV, V. V.

STRS 60-34
27 Nov 1973

THERMODYNAMIC ACCELERATION OF CONDUCTING MEDIA IN PISTON GAS-LIQUID FLOWS

[Abstract of a Paper by F. L. Ris, G. G. Kapustyanskiy, A. F. Kolesnichenko, V. V. Malakhov given at the Magnetohydrodynamic Conference, pp 162-167]

1. The study of the processes of energy exchange in piston gas-liquid flows is a new and highly complicated problem. The entirety of the efficiency of transmitting energy to a liquid-metal piston from a gas expanded on expansion of the gas in the piston flows demonstrated that the efficiency of the process (the ratio of the increment of the kinetic energy of the metal to the variation in enthalpy of the gas) can reach the limiting values on the order of 0.75 to 0.80.

The primary cause of the reduction in efficiency turns out to be disturbance of the boundaries of the liquid-metal piston. Accordingly, the methods of stabilizing the piston boundaries are acquiring urgency.

The results of experimental studies of the acceleration of a single liquid-metal piston in channels of constant and variable cross section are discussed in this paper. A study was made of the effect of the characteristic magnetic field on the intensity of the deterioration of the piston.

The accelerated motion of the piston in the channel under the effect of a pressure drop on its ends is accompanied by intense deformation of the "effluent" part of the piston which is caused by the introduction of the "effluent" liquid. Experimental data were obtained on the rate of introduction of the cavern; the shape of its surface was evaluated on the rate of introduction of the piston without stabilization. These data are investigated as the initial data for analysis of the methods of stabilizing liquid pistons in piston flows.

The energy characteristics of the acceleration process in channels of constant and variable cross section were obtained with and without stabilization of the piston boundaries. The essence of the applied stabilization technique is that a current is passed through the meridional cross section of the cylindrical piston as a result of which volumetric electromagnetic forces appear which concentrate the metal along the direction of the current (figure 1). In the tested channels, the field was intensified near the ends of the piston using ferromagnetic inserts between the current conducting walls. The efficiency of the piston acceleration when realizing such a stabilization procedure in a channel

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

1/2 016 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--DETERMINATION OF OXYGEN IN OXIDES OF PERIOD IV METALS -U-

AUTHOR-(02)-KUZNETSOVA, A.S., MALAKHOV, V.V.

COUNTRY OF INFO--USSR

SOURCE--ZAVOD. LAB. 1970, 36(1), 11-12

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--METAL OXIDE, OXYGEN, CHEMICAL ANALYSIS, TIN COMPOUND, LEAD COMPOUND, COBALT COMPOUND, CADMIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0303 STEP NO--UR/0032/70/036/001/0011/0012

CIRC ACCESSION NO--AP0113233

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

2/2 016 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0113233

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A RAPID SULFIDATION REACTION IN A S MELT IS DESCRIBED FOR DETN. OF O IN OXIDES OF PERIOD IV METALS. SAMPLE SIZE IS 100-150 MG, REACTION TERMINATES AFTER 30-40 MIN AT 300-600DEGREES WITH AR FLOW AT 0.5 1.-MIN. O IS DETD. IODIMETRICALLY. THE METHOD WAS USED TO DET. PERIOD IV METAL OXIDES IN SN, PB, CO, AND CD OXIDES, NI AND FE MOLYBDATES, AND FE ANTIMONATE WITH 0.5-1.0PERCENT RELATIVE ERROR.

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USSR

UDC 539.184.52

MALAKHOV, YU. I., FABRIKANT, V. A.

"Measuring the Lifetime of KrII Levels by the Methods of Electron Optical Chronography"

Leningrad, Optika i Spektroskopiya, Vol XXXIV, No 4, 1973, pp 645-649

Abstract: Results are presented from measuring the lifetime of KrII levels in the nanosecond range by the method of electron optical chronography. The experimental setup is described, and an error analysis is made. The measurement conditions are as follows: duration of the exciting electron beam $5 \cdot 10^{-9}$ seconds, cutoff time $\tau_c = 1.5 \cdot 10^{-9}$ seconds, current density per pulse $j_u = 2$ milliamps/cm^2, krypton pressure in the electron tube $4 \cdot 10^{-3}$ torr. A standard image converter tube recording of the weak line obtained in the single fire mode is presented. The measurement results are tabulated. An increase in the current density j_u to 15 milliamps/cm^2 and the pressure to $4 \cdot 10^{-2}$ torr has no effect on the measured value of τ. The intensity of the spectral lines in this case depends linearly on the given parameters, indicating the absence of quenching collisions. Variation of the energy of the exciting beam from 13 to 25 electron volts also has no effect of τ. The construction of the extinguishing curves for the measured lines on a semilogarithmic scale gives

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MALAKHOV, Yu. I. and FABRIKANT, V. A., Optika i Spektroskopiya, Vol XXXIV, No 4, 1973, pp 645-649

straight lines. The extinguishing section from 0.9 to 0.2 of the total signal amplitude was analyzed. Measurements of the lifetime of the $5p^2D^0$ level with respect to damping of the intensity of the two lines λ_1 = 4098 Å and λ_2 = 4945 Å indicate reliability of the results.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

USSR

UDC 534.232

DZYGALO, V. I., KONOVALOV, G. P., LNOZEMTSEV, V. M., SEPALTANOV, V. F., MALAKHOV, YU. V., Institute of Metallurgy and Enrichment, Academy of Sciences of the Kazakh SSR

"A Piezoelectric Radiator"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 23, 1970, Author's Certificate No 276552, Filed 11 Nov 68, p 147

Abstract: This author's certificate introduces a piezoelectric radiator which contains a piezoelectric element and electrode plates. As a distinguishing feature of the patent, the reliability is improved by making each of the windings in the device in the form of a conductive layer of liquid which is isolated from the ambient medium by an acoustically transparent membrane tightly connected to the piezoelectric element around the periphery.

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Soviet Inventions Illustrated, Section II Electrical, Derwent,

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243984 ULTRASONIC HYDRAULIC RADIATOR consisting of a case (1), ejector (2), tunnel (3), tangential insert (4) with a flat thread, a circular electromagnet (5) with a central core (6), a cover (7) with a nozzle (8).

The central core and the cover are made of magnetically soft steel, and the tangential insert of a diamagnetic material. The magnetic action on the dispersed reagent takes placed inside a vortex chamber (9) produced by the magnetic system, circular electromagnet, central core and the cover.

This makes it possible to treat magnetically the flotation agent directly during the process of ultrasonic emulsification, to act on newly formed interphase surfaces of the reagent droplets and thus to improve useful components extraction during flotation enrichment of ores and coal.

16.8.67 as 1180594/18-10. FEOFANOV.V.A.et alia. METALLURGY & ENRICHMENT INST. ACAD.SCIENCES KAZAKH SSR. (8.10.69.) Bul 17/14.5.69. Class 42s. Int.Cl. B 06b.

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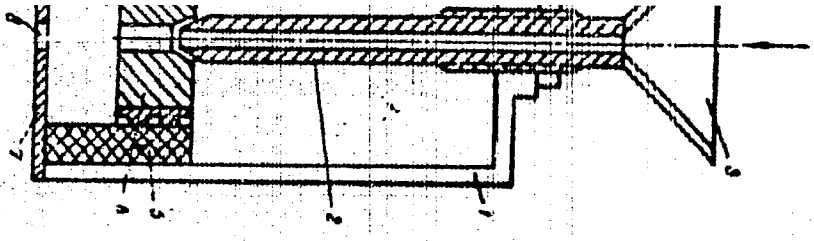

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

AA0044622

AUTHORS: Feofanov, V. A.; Sokolov, M. A.; Malakhov, Yu. V.; Bayshulakov, A. A.

Institut Metallurgii i Obogashcheniya AN Kazakhskoy SSR

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

USSR

UDC 778.681

MALAKHOVA, G. N. and NIKIFOROVA, R. N., Leningrad Institute of Motion Picture Engineers

"Spectral Sensitivity Curves of Domestically Produced Color Films With Internal Masking"

Moscow, Zhurnal Nauchnoy i Prikladony Fotografii, Vol 18, No 4, 1973, pp 241-247

Abstract: In order to determine the spectral sensitivity curves of new domestically produced types of color films with internal masking, an investigation was made of the spectral properties of the masked LN-5M and DS-5M films, and also of the masked LN-7 film. A comparison was made between 1955 data on the spectral-sensitivity characteristics of color film and recently obtained data, and spectral sensitivity curves were obtained for the first time for the masked DS-5M, LN-5M, and LN-7 films.

It was found that the LN-7 film differs from older DS-2 and LN-2 films by its greater sensitivity, a different relationship between the same masking and nonmasking components in the middle layer and the bottom layer, and a difference in the absorption curve of the masking component of the bottom layer. The conclusion is drawn that for the DS series the old curves can be used as well as the new curves, but that it is preferable to use the

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

USSR

MALAKHOVA, G. N. and NIKIFOROVA, R. N., Zhurnal Nauchnoy i Prikladony Fotografii, Vol 18, No 4, 1973, pp 241-247

new curves for the LN series.
7 figures. 1 table. 5 references.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

USSR

UDC 547.558.1

PROKOF'YEV, A. I., SOLODNIKOV, S. P., MALAKHOVA, I. G., TSVETKOV, Ye. N., and KABACHNIK, M. I., Institute of Metal Organic Compounds, Academy of Sciences USSR

"EPR Spectra of Phosphorus-Containing Ethyl Benzoates"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 12, Dec 73, pp 2621-2626

Abstract: Anion radicals of ethyl benzoates have been studied containing electron acceptor and electron donor groups such as phosphino- and phosphinyl groups in meta- and para- positions. A correlation function has been developed for the constants of superfine interaction with the ortho protons of ethylbenzoates a_2^H and the σ_{eff} constants ($\sigma_{eff} = \sigma_{R(M)} + 0.23_T$). It has been shown that in all of the studied compounds the phosphine- and phosphinyl groups show an electron accepting character. The σ_{eff} constant values of the phosphorus containing substituents agree with the known characteristics of their electronic effects.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

USSR

UDC 542.91 + 661.718.1

MALAKHOVA, I. G., TSVETKOV, YE. N., and KABACHNIK, M. I., Institute of Element-Organic Compounds, Academy of Sciences USSR

"m- and p-Carbethoxyphenyldicnlorophosphines"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 11, Nov 70, pp 2602-2603

Abstract: m- and p-Carbethoxyphenyldichlorophosphines were synthesized by the reaction of m- and p-carbethoxyphenyldiazonium borofluorides with phosphorus trichloride in the presence of Cu_2Br_2 with subsequent reduction of the resultant complex compounds with magnesium. For purification the carbethoxyphenyldichlorophosphines were hydrolyzed to the corresponding phosphonous acids, which after recrystallization were converted to the initial dichlorophosphines by the action of PCl_3. Oxidation of the dichlorophosphines with sulfuryl chloride in CCl_4 gives corresponding m- and p-carbethoxyphenylphosphonic acid dichlorides.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

USSR UDC 542.952.6+541.15

VLASOV, A. V., KOMAROVA, L. I., Corresponding Member of the Academy of Sciences USSR KORSHAK, V. V., MALAKHOVA, I. I., MIKHELEVA, G. A., TSETLIN, B. L., SHABLYGIN, M. V., Institute of Organo Elemental Compounds, Moscow, Academy of Sciences USSR; All-Union Scientific-Research Institute of Synthetic Fibers, Kalinin, State Committee for Chemistry USSR

"Production of Multilayer Graft-Polymerized Materials ("Pemosors") by Radiation Polymerization in the Gas Phase"

Moscow, Doklady Akademii Nauk SSR, Vol 193, No 3, 21 Jul 70, pp 615-617

Abstract: Multiple graft polymerization should lead to the formation of multilayered materials, in the opinion of the authors. A synthesis was developed for doubly grafted materials by gas-phase polymerization of various monomers to stretched polyethylene and polypropylene films and fibers. The graft polymerization was carried out by irradiating with X-rays substrates (of fibers and films and singly grafted materials) in the presence of unsaturated

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VLASOV, A. V., et al, Doklady Akademii Nauk SSR, Vol 193, No 3, 21 Jul 70, pp 615-617

monomer vapors. The following monomer pairs were so polymerized: acrylonitrile/vinylidene chloride, vinylidene chloride/acrylonitrile, vinylidene chloride/acrylic acid, acrylic acid/vinylidene chloride, vinyl chloride/vinylidene chloride, styrene/vinylidene chloride, methyl methacrylate/vinylidene chloride, vinylidene chloride/methyl methacrylate, acrylic acid/acrylonitrile. Films and fibers of a three-layer structure with minute particles between the layers were obtained. The orientation of the grafted layers was studied by IR spectroscopy. It was found that a singly grafted material will add a third layer whenever its first layer has a highly ordered structure (for instance, polyvinylidene chloride, polyacrylonitrile). The orienting effect of the grafted layer is retained even when it is quite thick. Formation of the new (third) layer begins in the interfibrillar channels of the intermediate (second) layer and the process follows the same scheme as the one in the gas-phase polymerization on the initial stretched substrate.

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USSR

VLASOV, A. V., et al, Doklady Akademii Nauk SSR, Vol 193, No 3, 21 Jul 70, pp 615-617

The passage of the orienting effect of the substrate on the formation of the third graft layer through a nonoriented intermediate layer may possibly be due to a repetition of the microrelief of the surface of the orienting original substrate or there may be a long-range effect of charged point defects.

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USSR

UDC 681.32

MALAKHOVA, M. M., PLYASHKEVICH, YU. N., GRANEVA, V. M., LOZDERNIK, I. M., BATOASHVILI, SH. A., and KHEYFETS, V. I.

"Updating the Minsk-22 Computer"

Tr. N.-i. i proyekt. in-ta mekhaniz. i avtomatiz. upr. proiz-vom v avtomob. prom-sti (Works of Scientific-Research and Planning Institute for the Mechanization and Automation of Production Control in the Automobile Industry), 1971, vyp. 1, pp 132-141 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 5, May 72, Abstract No 5B75 by V. F.)

Translation: The article describes a number of modernizations in the Minsk-22 computer and gives circuits and descriptions of changes affecting the card and magnetic tape input units, the start-stop input mechanism, etc. Eight illustrations. Bibliography with two titles.

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MALAKHOVA, M. M., PLYASHKEVICH, Yu. N., GRANEVA, V., LOZDERNIK, I. M., BATUASHVILI, Sh. A., KHEYFETS, V. I.

"Modernization of the Minsk-22 Computer"

Tr. N.-i. i Proekt. In-ta Mekhaniz. i. Avtomatiz. upr Proiz-vom v Avtomob. Prom-sti. [Works of Scientific Research and Planning Institute for Mechanization and Automation of Production Control in the Motor Vehicle Industry], No 1, 1971, pp 132-141, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V482 by the author's).

Translation: A number of modernizations of the Minsk-22 computer are described. Diagrams and descriptions are presented of changes concerning the punch card input device, magnetic tape reader, input start stop mechanism card puncher and matching of magnetic drum to computer.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

Metrology, Surveying, Mapping, Graphics

USSR

MALAKHOVA, O. F. (Moscow)

"Concerning the Theory of Autonomous Inertial Meridian Determination"

Moscow, Mekhanika Tverdogo Tela, No 4, Jul-Aug 70, pp 23-32

Abstract: In the article is discussed a system for determining and fixing the direction of the meridian, which differs from the classical gyrohorizon compass and is constructed on the basis of a gyroplatform controlled according to the readings of accelerometers (newton meters). The operating stability of the system is investigated, the equations of its perturbed motion are investigated; these determine the influence of the instrumental errors upon the accuracy of determination and fixation of the direction of the meridian. 3 figures, 8 bibliographic entries.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

MALAKHOVA, V. M.

AA0044234 UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent, 2/70

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

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

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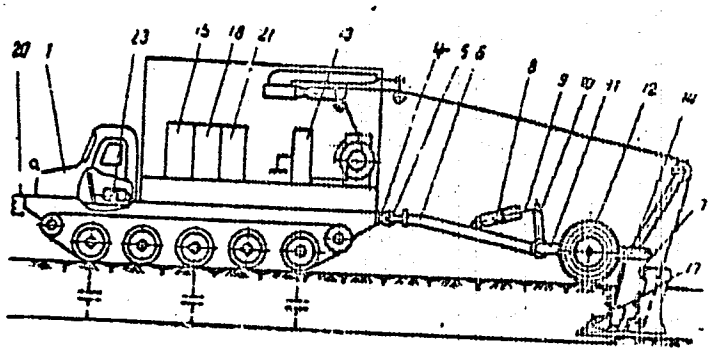

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

USSR

UDC 617-001.28-06:616.8

GLAZUNOV, I. S., BLAGOVESHCHENSKAYA, V. V., IVANOV, V. A., and MALAKHOVA, V. V., Moscow

"Clinical Characteristics and Some Problems of the Pathogenesis of Neurological Disturbances in Severe Forms of Acute Radiation Sickness"

Moscow, Zhurnal Nevropatologii i Psikhiatrii imeni S.S. Korsakov, Vol 73, Vyp 2, 1973, pp 165-168

Abstract: Nervous system pathology of eight patients receiving 400-900 rem gamma or neutron radiation is described. In the first stage acuteness could be diagnosed on the basis of the intensity of the initial reaction and the time of its appearance. Meningeal and general brain symptoms were most frequently characteristic of the intensity. Judging by them all patients had either mild or more pronounced radiation sickness. In the second stage these symptoms became less pronounced but persisted. In the critical third stage these symptoms intensified again, and various degrees of cerebral edema developed (the degree and the rapidity of onset depending on radiation dose). The whole range of neurological disruptions in the severe form of radiation sickness is described as a parenchymatic-meningeal syndrome of varying severity. Recovery was extremely slow, especially from vegetative-vascular instability accompanied by vestibular-vegetative reactions and asthenia. Rheoencephalographic studies supported the idea that such disruptions of the central nervous

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USSR

GLAZUNOV, I. S., et al., Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakov, Vol 73, Vyp 2, 1973, pp 165-168

system are a product of vascular disturbances and changes in vessel wall permeability. Venous outflow from the brain cavity was found to be encumbered very early, prior to appearance of edematic symptoms. Such studies also revealed considerable damage to the brain ventricular system. Thus in severe and extremely severe forms of radiation sickness the damage to various nervous system structures is considerable and can be direct or indirect.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

USSR

UDC 535.542

MALAKHOVSKIY, A. V.

"Automatic Spectropolarimeter"

Leningrad, Optika i Spektroskopiya, Vol 32, No 6, Jun 72, pp 1228-1233

Abstract: The article describes a spectropolarimeter whose polarizer and analyzer are motionless during measurement. The relation between the modulation of the luminous flux at the analyzer output and the magnetooptic rotation during periodical remagnetization of the specimen is used to determine the angle of magnetooptic rotation. Due to the presence of periodical remagnetization of the specimen (with a frequency of 40÷80 Hz), it is preferable to use this spectropolarimeter for the study of specimens of ferromagnetic (or ferrimagnetic) materials with a small coercive force. The instrument is simpler in design than polarimeters with a follow-up system. There is no follow-up system for the high-precision rotation of the analyzer, no system for converting the angle of rotation of the analyzer to an electric signal, nor is there a device to modulate the plane of polarization. Sensitivity is of the order of 0.0004°. The article includes a block diagram of the

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USSR

MALAKHOVSKIY, A. V., Optika i Spektroskopiya, Vol 32, No 6, Jun 72, pp 1228-1233

spectropolarimeter. To illustrate its operation, a recording was made of the dispersion of the meridian Kerr effect in manganese ferrite film (doped with 20 percent Fe_2O_3) during the s-polarization of incident light.

The author thanks I. S. EDEL'MAN for useful discussions and advice, as well as K. G. BOTSIYEV for his assistance in checking individual elements of the scheme on a mock-up.

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1/2 024 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--SIMULTANEOUS MEASUREMENT OF OPTICAL AND MAGNETOOPTICAL PARAMETERS -U-

AUTHOR--MALAKHOVSKIY, A.V.

COUNTRY OF INFO--USSR

SOURCE--OPT. SPEKTROSK. 1970, 28(2), 369-74

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PHOTOSENSITIVITY, LIGHT POLARIZATION, LIGHT MODULATION, OPTIC PROPERTY, MAGNETOOPTIC EFFECT, PHASE SHIFT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/0372 STEP NO--UR/0051/70/028/002/0369/0374

CIRC ACCESSION NO--AP0055157

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

2/2 024 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0055157

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE METHOD FOR SIMULTANEOUS MEASUREMENT OF N, EXTENCTION COEFF., AMPLITUDE, AND PHASE SHIFT IS GIVEN BASED ON 4 INDEPENDENT MEASUREMENTS OF TURN ANGLES OF THE POLARIZER AND THE ANALYZER. THESE MEASUREMENTS UTILIZED PROPERTIES OF THE ANODE SIGNAL OF THE PHOTOSENSITIVE UNIT DURING MODULATION OF THE PLANE OF POLARIZATION OF INCIDENT AND REFLECTED LIGHT.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

USSR

MALAKHOVSKIY, L. V.

UDC: 51:801

"On a Method of Handling Punctuation Marks in Automatic Translation from English to Russian"

V sb. Statistika rechi i avtomatich. analiz tekstov (Statistics of Speech and Automatic Text Analysis--collection of works), Leningrad, "Nauka", 1971, pp 452-463 (from RZh-Kibernetika, No 1, Jan 72, Abstract No 1V1148)

Translation: The paper is an investigation of the functions of punctuation marks within the framework of a written text, conducted to construct an algorithm for automatic translation. The author introduces the concept of a zero sign, i. e. the case where the sign in the source language corresponds to an absence of sign in the target language, and vice versa. Cases of divergence and coincidence of Russian punctuation are considered in detail in the paper. T. Nikolayeva.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

1/2 030 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--STUDIES OF SOVIET SCIENTISTS IN THE FIELD OF NUCLEAR METEOROLOGY, REVIEW OF WORK OF SOVIET SCIENTISTS ON NUCLEAR METEOROLOGY -U-

AUTHOR-(03)-KAROL, I.L., MALAKOV, S.G., MAKHONKO, K.P.

COUNTRY OF INFO--USSR

SOURCE--INSTITUTE OF EXPERIMENTAL METEOROLOGY; MOSCOW, IZVESTIYA AKADEMII NAUK SSSR, FIZIKA ATMOSFERY I OKEANA, VOL VI, NO 4, 1970, PP 352-365

DATE PUBLISHED--------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--ATMOSPHERIC RADIOACTIVITY, RADIOACTIVE AEROSOL, RADIOACTIVE TRACER, RADIOACTIVE FALLOUT, CLOUD PHYSICS, ATMOSPHERIC PHYSICS, RADIOACTIVE CONTAMINATION, ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0358 STEP NO--UR/0362/70/006/004/0352/0365

CIRC ACCESSION NO--AP0114554

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

2/2 030 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0114654

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS PAPER IS A CONCISE REVIEW OF THE MOST IMPORTANT RESULTS OBTAINED IN THE USSR DURING THE PAST DECADE IN THE STUDY OF NATURAL ATMOSPHERIC RADIOACTIVITY, IN THE INVESTIGATION OF THE SIZE AND COMPOSITION OF RADIOACTIVE AEROSOL PARTICLES AND THE REGULARITIES IN THEIR ATMOSPHERIC PROPAGATION, PROCESSES OF SELF PURIFICATION OF THE ATMOSPHERE FROM RADIOACTIVE CONTAMINATIONS AND THE USE OF RADIOACTIVE ISOTOPES AS ATMOSPHERIC TRACERS. EIGHTY RUSSIAN SOURCES ARE CITED AND THE REVIEW BRIEFLY DISCUSSES THE PROGRESS IN THE ABOVE FIELDS REPORTED IN EACH OF THESE CONTRIBUTIONS. THE REVIEW SHOWS THAT NUCLEAR METEOROLOGY HAS ALREADY BECOME A BRANCH OF ATMOSPHERIC PHYSICS WITH ITS OWN TASKS AND RESEARCH METHODS. AT PRESENT ISOTOPES ARE BECOMING INCREASINGLY IMPORTANT AS TRACERS FOR THE STUDY OF ATMOSPHERIC MOVEMENTS AT DIFFERENT SCALES, IN THE PHYSICS OF CLOUDS AND PRECIPITATION AND IN THE STUDY OF THE ATMOSPHERIC AEROSOL COMPONENT AND MOISTURE CYCLE; NATURAL ISOTOPES ARE BEING USED WITH INCREASING FREQUENCY. DATA FROM THE STUDY OF THE GLOBAL PROPAGATION AND FALLOUT OF PRODUCTS FROM NUCLEAR BURSTS MUST BE USED FOR DETERMINING AND REFINING THE GENERAL PATTERNS OF THESE PROCESSES FOR THEIR RELIABLE PREDICTION. MORE AND MORE PARCTICAL USE IS BEING MADE OF THE RESULTS FROM STUDY OF THE MIGRATION OF RADIOACTIVE CONTAMINANTS IN THE ATMOSPHERE AND BIOSPHERE IN GENERAL FOR MAKING QUALITATIVE AND QUANTITATIVE ESTIMATES OF THE PROPAGATION OF CHEMICAL, PRIMARILY INDUSTRIAL CONTAMINANTS.

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USSR UDC 616-057-084:629.113

MAL'KOVETS, M. V., SHAPIRO, I. P., and MASLOVSKAYA, V. P.

"Prophylaxis of Occupational Diseases at the Minsk Automobile Plant"

Minsk, Zdravookhraneniye Belorussii, Vol 17, No 5, May 71, pp 48-51

Abstract: Occupational diseases at the Minsk Automobile Plant during 1964-1969 were studied. The incidence of these diseases decreased from 1964 to 1966 and then apparently increased from 1967 to 1969. The apparent increase was due to a more thorough medical examination of the employees. In 1969 a renewed downward trend was observed. In 1964 there was a high incidence of pneumoconiosis (silicosis), a condition which was not adequately diagnosed prior to 1964. The frequency of occurrence of pneumoconiosis decreased in 1964-1968. The rise in the curve of occupational disease incidence during 1967-68 was due to an increasing number of detected cases of neuritis of auditory nerves and vibration sickness that were caused by extensive use of pneumatic equipment. Other occupational diseases including industrial dermatitis, bronchial asthma, and neuromyositis were encountered rarely. Occupational diseases occurred most frequently among workers at the foundry shops. Because of improved working conditions at these shops, the mean length of time after the start of employment within which vibration sickness and neuritis of auditory nerves

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USSR

MAL'KOVETS, M. V., et al., Zdravookhraneniye Belorussii, Vol 17, No 5, May 71, pp 48-51

developed increased from 8.8 to 11.6 and 11.2 to 14.6 yrs, respectively, from 1964-1966 to 1967-1969. In 1968-1969 measures to reduce the incidence of these two diseases were taken which included replacement of pneumatic with electrically driven and hydraulic tools in the section of chassis assembling and on the main assembly line. Work is being done on the installation of noisy equipment on springs supported on foundations that compensate for vibrations and on the replacement of such equipment with noiseless tools and machines.

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USSR UDC: 621.372.851

MALANCHENKO, V. P., KIZEYEVA, G. M.

"Propagation Ratio of a Waveguide With Two Inhomogeneities"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 1, Jan 72, pp 1-6

Abstract: The authors consider two identical infinitely thin arbitrarily spaced plane-transverse inhomogeneities in a waveguide. Solution of the electrodynamic problem by the Galerkin method in the single-parameter approximation gives the complex propagation ratio for the system of two homogeneities with regard to the interaction of the higher wave modes which arise on these inhomogeneities. A diaphragm of finite thickness in a waveguide is considered as a special case, and formulas are derived for calculating the parameters of its equivalent circuits. A study is made of the limits of applicability of the theory of long lines to the calculation of waveguide devices with closely spaced inhomogeneities. The expression found for the complex propagation ratio of

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USSR

MALANCHENKO, V. P., KIZEYEVA, G. M., Radiotekhnika i Elektronika, Vol 17, No 1, Jan 72, pp 1-6

two inhomogeneities in a waveguide is more accurate than the analogous expression known from the theory of long lines. For instance, the expression found in this paper can be used for calculating the parameters of thick diaphragms. Although the formulas derived are approximate, they are valid for diaphragms of practically any thickness with openings in them of any singly connected configuration in waveguides of arbitrary cross section. A numerical example shows that a distance of $1/K_{min}$ between inhomogeneities ensures weak interaction between their fields, and for practical purposes may be taken as the minimum spacing at which the theory of long lines is still applicable to calculation of waveguide devices with closely spaced inhomogeneities. Four figures, bibliography of five titles.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

USSR

MALANIN, V. V., ZLOTNIKOV, O. I.

"Problem of Optimal Stabilization of Rotary Motion of a Solid Acted upon by Gravitational and Aerodynamic Moments"

Vtoraya Chetayevsk. Konf. po Analit. Mekh., Ustoychivosti Dvizheniya i Optimal'n. Upr., 1973. Annotatsii Dokl. [Second Chetayev Conference on Analytic Mechanics, Stability of Motion and Optimal Control, 1973. Abstracts of Reports], Kazan', 1972, p 36 (Translated from Referativnyy Zhurnal Mekhanika, No 5, 1973, Abstract No 5B290).

Translation: Oscillations of an uncontrolled satellite in the plane of the orbit under the influence of aerodynamic and gravitational moments in a circular polar orbit and their stability are studied. Additionally, the magnetic moment is considered in the planar problem. Asymptotic methods are used to produce an approximate solution, determine resonances and define the periodic solution. Three areas of instability are constructed. The solution of the problem of three-dimensional optimal stabilization of rotary motion of a solid relative to its center of mass is based on the existence of a Jacobi-type integral in the uncontrolled motion and the theorems of the method of A. A. Krasovskiy for analytic design of the control circuits of a flight vehicle. The planar problem is additionally solved by the method of A. M. Letov.

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USSR

UDC: 533.652/.661.013

VERESHCHAGIN, I. F., MALANIN, V. V., PESTRENIN, V. M.

"Optimizing the Time of Flight of an Aircraft With Controllable Radial Thrust"

Uch. zap. Perm. un-t (Scientific Notes of Perm' University), 1971, No 239, pp 130-139 (from RZh-Mekhanika, No 7, Jul 71, Abstract No 7B341)

Translation: The authors consider motion of an aircraft in a central field of gravity with controllable radial force, the control function being limited with respect to absolute value to some fixed constant. The principle of the maximum is used to solve the problem of speed-optimum motion of the aircraft. Selected as phase coordinates are: the inverse of the radius vector of the vehicle and its derivative with respect to the polar angle. Two examples are presented, one of which is transition from an outer to an inner orbit. In this example, motion first takes place with maximum attraction, and then with maximum repulsion. G. S. Aronin.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

USSR

UDC: 533.652/.661.013

VERESHCHAGIN, I. F., MALANIN, V. V., SHLYAPIN, Ya. K.

"Motion of an Aircraft With Nozzle in a Cardan Suspension"

Uch. zap. Perm. un-t (Scientific Notes of Perm' University), 1971, No 239, pp 104-129 (from RZh-Mekhanika, No 7, Jul 71, Abstract No 7B340)

Translation: On the basis of previously derived equations of motion (see abstract 7B339), an investigation is made of the motion of an aircraft with nozzle in a Cardan suspension. In integration of the linearized equations of rotational motions, programmed rotation of the vehicle relative to the longitudinal axis is predetermined. The conditions of stability of this motion are considered in the absence of rotations relative to the other axes and when the nozzle is in the neutral position. Damping of the angular velocity is also considered in two modifications, as well as reduction of the rotation of the vehicle to a single axis and stabilization of the position of the vertical hull of the vehicle. The equations of motion of the center of mass are integrated for one special case -- horizontal flight with regard to atmospheric drag. G. S. Aronin.

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USSR UDC: 533.652/.661.013

VERESHCHAGIN, I. F., MALANIN, V. V., SHLYAPIN, Ya. K.

"Equations of Motion of an Aircraft With Nozzle in a Cardan Suspension"

Uch. zap. Perm. un-t (Scientific Notes of Perm' University), 1971, No 239, pp 85-103 (from RZh-Mekhanika, No 7, Jul 71, Abstract No 7B339)

Translation: Equations of motion (rotational motion and displacement of the center of mass) are derived for an aircraft consisting of two parts -- a rigid hull within which a solid fuel charge is located, and a nozzle held in a Cardan suspension with two degrees of freedom relative to the hull. Effects due to displacement of the center of mass and the geometric characteristics of the vehicle are taken into consideration. After derivation of the complete system of equations, simplifications are made for the case where the center of mass of the nozzle coincides with the center of suspension, and the hull is axisymmetric, and the equations are also linearized. The equations of motion of the center of mass are considered in localized, velocity, and absolute systems of coordinates. It is recommended that the velocity system be used in the presence of aerodynamic forces, and that the others be used in the absence of such forces. G. S. Aronin.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

USSR

UDC 531.55:521.1

MALANIN, V. V., MITEL'MAN, S. YE.

"Toward the Motion of an Apparatus With a Solar Sail in a Central Gravitational Field"

Uch. zap. Perm. un-t (Scientific Notes of Perm' University), 1971, No. 239, pp 263-273 (from RZh-Mekhanika, No 9, Sep 71, Abstract No 9A66)

Translation: The equations of motion of a cosmic apparatus (within the framework of the dynamics of a material point) were solved for motion with a constant angle of setting of the sail,for motion in a circular orbit, and for transfer between coplanar orbits. Certain problems of optimal motion are discussed. S. R.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910016-9

USSR UDC: 620.18.539.4.019.3:621.791

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

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

Moscow, Fizika i Khimiya Obrabotki Materialov [The Physics and Chemistry of Materials Processing], No 6, Nov-Dec 73, pp 123-126.

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

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TITLE--KINETICS OF SODIUM DISSOLUTION IN A SODIUM CHLORIDE MELT DURING DILUTION OF THE METALLIC PHASE WITH LEAD -U-

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DISSOLN. RATE OF NA FROM NA-PB LIQ. MIXTS. OF A 1-10 WT. PERCENT NA CONCN. IN AN AGITATED NACL MELT WAS STUDIED EXPTL. IN THE PRESENCE OF CL AT 850DEGREES. THE DEPENDENCE OF THE CURRENT D. OF NA DISSOLN. (I) IN A-CM PRIME2 ON THE NA CONCN. IN THE NA-PB MIXT. IN WT. PERCENT (C) WAS DETD. AS I EQUALS 0.0095C PRIME2. THE CURRENT EFFICIENCY OF THE ELECTROLYSIS OF THE NACL MELT WITH A PB CATHODE IN PERCENT (A) WAS CALCD. AS A EQUALS 100-0.95C PRIME2-I SUBT, WHERE I SUBT IS THE TOTAL CURRENT D. IN A-CM PRIME2. THE CALCNS. AGREE WITH EXPT. PROVING THE FACT THAT CURRENT LOSSES ARE PRIMARILY DETD. BY THE REVERSE DISSOLN. OF NA IN THE NACL MELT AND BY THE REACTION WITH CL.

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"Transplantation of Allogenous Bone Marrow to Thymectomized Irradiated Monkeys"

Moscow, Problemy Gematologii i Perelivaniya Krovi, Vol 16, No 3, Mar 71, pp 45-53

Abstract: Since transplantation of allogenous bone marrow to irradiated animals for the purpose of alleviating radiation sickness gives rise to a secondary disease due to differentiation of the transplanted tissue into lymphocytes which enter into an immunological reaction with the host, a study was performed in which thymectomized monkeys were irradiated with 800-1,000 r and then given allogenous bone marrow transplants. The thymectomy did not prevent the development of the secondary disease, but made it

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