"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

UDC: 62-52

ROYTENBERG, Ya. N.

"Automatic Control"

Moscow, "Nauka," 1971, p 3

Translation

FOREWORD

The theory of automatic control has grown into a broad discipline with results of basic and practical value. The study of this science has become a necessity even for those not specializing in control. Problems in control theory are now being studied by many students in various specialties. The basis of our book is a course of lectures given by the author to students in the Mechanical-Mathematical Department of Moscow University.

In leading the reader from the initial concepts of control theory to its modern applications, the author has attempted also to show the connection of the problems and methods of the theory of motion control with the general principles of analytical mechanics.

3/17

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

ROYTENBERG, Ya. N., "Nauka" 1971, p 8

There is very little of the slapdash treatment accorded to the many problems of modern control theory. The author has therefore given detailed and, wherever possible, rigorous analyses of several central problems in control theory. Several questions, important in themselves, are provided for possible use as a base of future study of monographs and articles on special problems in control theory -- problems of the control of systems with distributed parameters, of pursuit theory, of optimal stabilization, of adaptation theory, and the like.

The author expresses his gratitude to Academician Nikolay Nikolayevich Krasovskiy, who has read the manuscript and kindly offered a number of important suggestions for improving the book.

4/17

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

UDC: 62-52

ROYTENBERG, Ya. N.

"Automatic Control"

Moscow, "Nauka," 1971, pp 3-7

TABLE OF CONTENTS

Foreword . . . . . .

Chapter 1

Linear Controlled Systems. . . . . .

1. Unidimensional controlled systems. . . . . .

1. Systems with one degree of freedom. 2. Weight *functions and transfer functions. 3. The frequency character-istic. 4. The closed controlled system. 5. The open controlled system. 6. Reproduction of the transformed input signal. 7. Uni-dimensional controlled system with a finite number of degrees of* freedom. 8. A note regarding integration of equations of motion for the unidimensional system.

5/17

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

ROYTENBERG, Ya. N., Nauka, 1971, pp 3-7

1. Transforming the characteristic determinant of the closed controlled system. 2. Criteria for the asymptotic stability of closed controlled systems containing only stable circuits (the Nyquist criterion). 3. Applying the Nyquist criterion to systems with neutral circuits. 4. Applying the Nyquist criterion to systems with unstable circuits. 5. Frequency characteristics of controlled systems and their experimental determination. 6. An example of Nyquist diagram plotting. 7. Controlled systems containing delay circuits and the stability criteria for these systems. 8. Logarithmic frequency characteristics. 9. Determining the stability of a closed control system from the logarithmic frequency characteristics of the open control system.

2. Multidimensional controlled systems. . . . . .

1. The closed controlled system. 2. Characteristic determinant of the closed control system. 3. Automatic control equation. 4. The open controlled system. 5. Interpretation of matrix operators $W(D)$ and $E_{m1} + W(D)$. 6. Reproduction of the input signal in the multidimensional controlled system.

6/17

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

ROYTENBERG, Ya. N., Nauka, 1971, pp 3-7

3. Frequency methods for investigating the stability of linear controlled systems. . . . . .

4. The weight function and the transfer function of a stationary linear system . . . . . .

1. The unidimensional controlled system. 2. The unidimensional controlled system whose transfer function is an improper fraction. 3. Multidimensional controlled systems.

5. Transient and steady-state processes in closed controlled systems. . . . . .

1. Determining the weight function from the frequency characteristic of the closed system. 2. Determining the transfer function from the frequency characteristic of the closed system. 3. Minimal-phase systems. 4. Steady-state processes in closed controlled systems; error coefficients. 5. Steady-state processes in servo systems.

7/17

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

ROYTENBERG, Ya. N., Nauka, 1971, pp 3-7

Chapter 2

Nonlinear Controlled Systems

6. Stability of nonlinear controlled systems; frequency criteria; applying the direct Lyapunov method. . . . .

1. One class of nonlinear controlled systems. 2. Interpreting the function W(D). 3. The form-varying frequency characteristic. 4. The Popov theorem. 5. Geometrical formulation of the Popov theorem. 6. The possibility of being limited by the case $q > 0$ in the proof of the theorem. 7. Lemma 1. 8. Lemma 2. 9. Proof of the Popov theorem. 10. Applying the direct Lyapunov method; the Lur'ye method in the theory of absolute stability of nonlinear systems.

7. Nonlinear systems under outside forces . . . . . .

1. Reducing the problem to integral equations. 2. Constructing approximate solutions.

6/11

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

ROYTENBERG, Ya. N., Nauka, 1971, pp 3-7

8. Qualitative methods for investigating the motion of nonlinear systems . . . . . .

1. Nonlinear systems with one degree of freedom. 2. Conservative systems. 3. Dissipative systems. 4. Self-oscillating systems; the method of point transformations.

9. Nonlinear systems under periodic outside forces. . . .

1. Forced oscillations of a nonlinear system. 2. Steady-state oscillations with the frequency of the external force and their stability.

Chapter 3

Systems With Finite Control Time . . . . . .

10. Functions of matrices and their application to the integration of linear differential equation systems . . . . . .

9/17

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

ROYTENBERG, Ya. N., Nauka, 1971, pp 3-7

1. Generalization of the Bézout theorem. 2. The Hamilton-Cayley theorem. 3. The minimum polynomial of a matrix. 4. Functions of a matrix. 5. The Lagrange-Sylvester interpolation polynomial. 6. Constructing the function e^{At}. 7. Components of the matrix A. 8. General formulas determining the components Z_{kj} of the matrix A. 9. Representing the functions of matrices by series. 10. Extending the Cauchy integral formula for analytic functions to functions of matrices. 11. Some properties of functions of matrices. 12. Integrating systems of linear differential equations with constant coefficients using functions of matrices. 13. Comparison with solutions obtained by means of the Laplace transform.

11. Controllability and observability of linear systems. . . . . .

1. Controllability of systems describable by linear differential equations with constant coefficients. 2. Systems with one controlling force. 3. Observability of systems describable by linear differential equations with constant coefficients.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

ROYTENBERG, Ya. N., Nauka, 1971, pp 3-7

4. Systems with one observable coordinate. 5. The duality principle in controllability and observability. 6. The controllability of linear nonstationary systems. 7. The observability of linear nonstationary systems. 8. Controllability conditions for linear stationary systems in the mobile ends problem. 9. Controllability condition of a linear nonstationary system in the mobile ends problem.

Chapter 4

Method of Dynamic Programming

12. Optimal control in systems with limited resources. . .

1. Variational problems in control theory. 2. The Bellman method of dynamic programming; the optimalness principle.

13. Applying dynamic programming to discrete systems. . . . . .

1. The recurrent Bellman relationship. 2. Multidimensional discrete systems.

11/17

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

ROYTENBERG, Ya. N., Nauka, 1971, pp 3-7

14. Applying dynamic programming to continuous action systems. . . . . .

1. Problem with fixed time and free trajectory end. 2. Problem with fixed trajectory end and free time. 3. Rapid action problem.

15. Sufficient conditions of optimality confirmation of the method of dynamic programming for continuous action systems; the Boltyanskiy theorems. . . . . .

1. Statement of the problem; geometric interpretation of the Bellman equation in the rapid action problem. 2. The Boltyanskiy theorem for the rapid action problem. 3. The Boltyanskiy theorem for the general problem of dynamic programming.

16. Connection between the Bellman and Hamilton-Jacobi equations in problems of analytical mechanics. . . .

12/17

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

ROYTENBERG, Ya. N., Nauka, 1971, pp 3-7

1. The problem of minimizing an integral of the form $Q = \int_{t_0}^{t} G(x,u,\nu)d\nu$. 2. Obtaining the Hamilton-Jacobi equation from the Hamilton principle.

Chapter 5

The Pontryagin Principle of the Maximum in Optimal Control Theory . . . . . .

17. Theorem of the necessary conditions of optimality . . . . . .

1. Pontryagin principle of the maximum. 2. The Pontryagin principle in the rapid action problem. 3. Proof of the theorem of the necessary optimalness condition (the principle of the maximum) in the problem of the fixed time T and the free end of the trajectory.

13/17

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

ROYTENBERG, Ya. N., Nauka, 1971, pp 3-7

18. Principle of the maximum for nonautonomous systems . . . . . .

1. Theorem of the necessary condition of optimalness for nonautonomous systems. 2. Proof of the theorem of the necessary optimalness condition for a nonautonomous system with linear input control. 3. Reduction of the rapid action problem to a boundary value problem.

19. The mobile ends problem; application of the principle of the maximum; the transversality conditions. . . . . .

20. The regular synthesis concept in optimal system theory. . . . . .

21. Sufficient optimality condition in the form of the principle of the maximum; the Boltyanskiy theorem . . . . . .

14/17

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

ROYTENBERG, Ya. N., Nauka, 1971, pp 3-7

22. Connection between the principle of the maximum and the dynamic programming method. . . . . .

23. Some examples of the application of the maximum principle . . . . . .

1. Theory of the number of control switchings in the linear rapid action problem. 2. The maximum deviation problem. 3. Applying the principle of the maximum with no limits on the control.

24. Optimal linear systems with quadratic quality criterion . . . . . .

1. The regulator state problem. 2. The output regulator problem. 3. Stationary systems with infinite observation time. 4. The tracking problem.

15/17

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

ROYTENBERG, Ya. N., Nauka, 1971, pp 3-7

Chapter 6

Stochastic Systems . . . . . .

25. Transformation of random signals by linear systems.

26. Prognosis and filtration of unidimensional random processes . . . . . .

1. The Kolmogorov and Wiener methods. 2. Stationary random processes. 2. Solving the integral equation determining the weight function of an optimal system. 3. Nonstationary random processes; the integral equation for the optimal weight function. 4. Optimal Kalman-Bucy filters.

27. Multidimensional random processes; optimal Kalman-Bucy filters. . . . . .

16/17

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

ROYTENBERG, Ya. N., Nauka, 1971, pp 3-7

1. Systems with finite observation time. 2. Stationary systems with infinite observation time. 3. Nonstationary systems with infinite observation time. 4. Optimal filtration of correlated noise.

Bibliography . . . . . .

Index. . . . . .

17/17

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

1/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--ON THE OBSERVABILITY OF THE SOLUTIONS OF SOME NON LINEAR DIFFERENTIAL EQUATIONS IN HILBERT SPACE -U-

AUTHOR--ROYTENBERG, YE.YA.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK MOSKOVSKOGO UNIVERSITETA, MATEMATIKA, MEKHANIKA, 1970, NR 1, PP 48-54

DATE PUBLISHED--------70

SUBJECT AREAS--MATHEMATICAL SCIENCES

TOPIC TAGS--HILBERT SPACE, NONLINEAR DIFFERENTIAL EQUATION, DIFFERENTIAL EQUATION SOLUTION, ASYMPTOTIC PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0519 STEP NO--UR/0055/70/000/001/0048/0054

CIRC ACCESSION NO--AP0117753

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

2/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0117753

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER DEALS WITH THE PROBLEM OF FINDING THE SOLUTION OF A NONLINEAR DIFFERENTIAL EQUATION WITH AN UNKNOWN INITIAL CONDITION IN THE HILBERT SPACE E AT A CERTAIN INSTANT T SUB1 IS GREATER THAN T SUB0. AN AUXILIARY EQUATION WITH AN ADDITIONAL (CONTROL) TERM IS PUT INTO CORRESPONDENCE TO THE ORIGINAL EQUATION. THE CONTROL TERM IS FORMED USING THE DATA ON THE DIFFERENCE BETWEEN THE "TRACKS" OF THE SOLUTIONS OF THE ORIGINAL AND AUXILIARY EQUATION. THE LAW OF FORMATION OF THE CONTROL TERM IS CHOSEN SO AS TO MAKE THE NORM OF THE DIFFERENCE BETWEEN THE SOLUTIONS OF THE ORIGINAL AND AUXILIARY EQUATION APPROACH ZERO UNIFORMLY AND ASYMPTOTICALLY.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

UDC 539.374

ROYTMAN, A. B., KUDRICHENKO, G. P., and T. A. REZNIKHENKO (Zaporoz'ye)

"Increasing the Corrosion Resistance of Parts Made of Alloys 2Kh15N3M-Sh and 1Kh17N2 by Magnetization"

Kiev, Problemy Prochnosti, No 9, Sep; 73, pp 82-85

Abstract: Results are presented of tests conducted on specimens made of alloy 2Kh15N3M-Sh and blades of the eighth and tenth stages of a gas-turbine compressor, made of steel 1Kh17N2 and preliminarily magnetized, on corrosion resistance and fatigue strength. Magnetization of the specimens and blades was conducted in a magnetic field of 350-400 oersted to the limit value. On the basis of the obtained results, conclusions were drawn concerning the positive influence of magnetization upon the corrosion resistance of the indicated alloys, confirmed by statistical analysis. 3 figures. 5 tables, 3 references.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR UDC 620.178.5

TROSHCHENKO, V. T., GRYAZNOV, B. A., GORODETSKIY, S. S., ROYTMAN, A. B., NALIMOV, Yu. S., (Kiev)

"Study of the Influence of Technological Factors on the Endurance of Gas Turbine Blades"

Kiev, Problemy Prochnosti, No 8, 1972, pp 8-12.

Abstract: This work presents an analysis of the influence of certain technological factors on the endurance of the third stage of a gas turbine engine. The blade manufactured by mechanical working of stamped blanks of EI437B vacuum-arc remelted alloy. The deviations in the technology of manufacture of the working turbine blades (scratches, burns, and additional operation called "lustering") have no significant influence on the fatigue strength of blades with a test base of 10^7 cycles at 20 and 570°C. The range of change of fatigue limits in the test blades in comparison with a control group of blades at 20°C was from -0.5% to +7%, at 570°C -- from 0 to +5%. The technological deviations studied do increase the scattering of blade test results in the area of limited durability.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

UDC: 621.372.5/.6

ZELYAKH, E. V., ROYTMAN, L. M.

"Methods of Calculating the Z-Parameters of a Nonautonomous Two-Terminal Network"

V sb. Vopr. elektrosvyazi (Problems of Electrical Communications--collection of works), Kiev, "Tekhnika", 1970, pp 9-15 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11A111)

Translation: Two methods of calculating the z-parameters of nonautonomous 2n-terminal networks are presented. The first method utilizes the resistance matrix of a circuit made up of 2n-terminal networks by short-circuiting the terminals in each pair, while the second method utilizes the conductance matrix of a circuit made up of 2n-terminal networks with open terminal pairs. Three illustrations. Resumé.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR UDC 539.389.1

PODKUYKO, V. P., PUSTOVALOV, V. V., ROYTMAN, L. U., STARTSEV, V. I., (Khar'kov)

"Temperature Dependence of Critical Shear Stress of Al-Mg Single Crystals of Various Concentrations at Temperatures Between 1.6 and 300°K"

Kiev, Problemy Prochnosti, No 8, 1972, pp 61-65.

Abstract: This work studies the influence of various concentrations of magnesium on the critical shear stress (CSS) and temperature dependence of CSS over a broad range of low temperatures. Magnesium concentration was varied between 0 and 5.52 at.%. The temperature dependence of CSS was found to have three sectors: 1) between 300 and 120-130°K, the CSS is independent of temperature; 2) between 120 and 4.2°K, the CSS increases with decreasing temperature; 3) below 4.2°K the CSS decreases with decreasing temperature. The value of CSS is proportional to $\sqrt{c}$ in the temperature intervals studied and is satisfactorily described by the concepts of Fleischer concerning the interaction of edge dislocations with maximum elastic stress fields and local changes in the shear modulus with concentration. The absolute value of the drop of CSS at temperatures below 4.2°K increases in proportion to the value of $\sqrt{c}$, while the relative values are independent of Mg concentration in the alloy.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

ROYTMAN, M. P.

UDC: 362.11:65.012.2

SOME SUGGESTIONS FOR CALCULATING ANNUAL MEAN BED OCCUPANCY IN MUNICIPAL HOSPITALS

[Article* by M.P. Roytman, L.V. Lokshina, All-Union Scientific Research Institute of Social Hygiene and Public Health Organization imeni N.A. Semashko (Professor I.D. Bogatyrev, director), Moscow; Moscow, Sovetskoye Zdravookhraneniye, Russian, No 3, 1972, submitted 16 August 1971, pp 15-19]

In the Directives of the 24th Congress of the CPSU pertaining to the five-year plan of development of the USSR economy in 1971-1975, it is indicated that a most important prerequisite for creating the material and technical base for communism is implementation of comprehensive intensification of the national product and increase in its effectiveness. Improvement of the system of planning and management of the economy under modern conditions implies the renewal and organization of the base standards in all of its branches. This will provide for the changeover to broad use of economic and mathematical methods and computer technology which, in turn, will expedite receipt and processing of information, development of different plan variants and determination of optimum planning decisions.

In the USSR, public health planning, which is an inseparable element of planning of the nation's entire economy should provide for the most rational and efficient use of financial and material resources as well as personnel at the disposal of public health agencies and institutions. In this connection, a large and important task emerges which deals with working out the standards base in public health, determination of the scope and nature of information for the purpose of management at different levels, determination of the set of indices of quality and efficiency of different types of public health agencies and institutions.

Substantiation of a standard such as the mean annual hospital occupancy becomes quite serious in increasing the efficiency of using the material base of public health and, in particular, the available hospital beds. This index is also needed for establishment of the requirements for beds for different special purposes.

*Published for the purpose of discussion.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

ROYTMAN, M. P.

SO: JPRS 53402
18 JAN 71

UDC: 614:061.14(100)].003.1

PROBLEMS PERTAINING TO PUBLIC HEALTH PLANNING AND ECONOMICS IN THE WORLD HEALTH ORGANIZATION [WHO]

[Article by M.P. Roytman, All-Union Scientific Research Institute of Social Hygiene and Public Health Planning imeni N.A. Semashko, Moscow; Moscow, Sovetskoye Zdravookhraneniye, Russian, No 5, 1971, submitted 4 August 1970, pp 50-55]

In the last few years problems pertaining to public health planning and economics are reflected more and more in the activities of WHO. Thus, public health planning was discussed, in 1960-1967 alone, at four sessions of the Committee of Experts on Public Health Planning of WHO [1] and included at the technical discussion of the 8th session of World Health Assembly in 1965. Special courses on planning were created for responsible WHO workers in the field of public health organization.

Within the research program of the WHO, in the field of public health organization special scientific research is in progress on economics thereof. WHO publishes the results of such research. In 1969, it published the results of a study of public health expenditures in different countries from the standpoint of their significance to planning of public health services [2]. Professor R. Abel-Smith (London School of Economics and Political Sciences) analyzed, in this work, international information on expenses for public health services in a number of nations, he discussed the systems of financing them in these countries, and determined the correlation of expenses on them and national resources.

Much is being done with respect to investigation of public health planning and economics by the European Regional Office of WHO. These issues are touched upon at many conferences organized by this office, and some meetings are specially devoted to public health planning and economics. The leading specialists in the field of public health planning and economics from many European nations and the USA participate in such conferences.

Reports on these conferences (seminars, conferences, symposiums) are published regularly, and in Russian as well. However, in view of the fact that the printing is small, they are sent to a limited number of

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

Photoelectric Effect

USSR

UDC: 621.317.326

BOYTMAN, M. S., Tomsk

"Theory of Photovoltaic Energy Converters"

Novosibirsk, Avtometriya, No 1, Jan/Feb 72, pp 54-63

Abstract: A system of nonlinear differential equations is presented for determining the static and dynamic characteristics of a photovoltaic energy converter made up of a low-power miniature incandescent lamp and a photoresistor.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

UDC: 621.373:621.316.722(088.8)

ROYTMAN, M. S.

"Variable Sinusoidal Voltage Oscillator"

/Tomsk. politekhn. in-t/, Avt. sv. SSSR (Tomsk Polytechnical Institute, Author's certificate USSR) Class 21 a4, 35/14, (H 02 m), No. 270831, Application 8.04.68, Publication 21.08.70 (from RZh-Radiotekhnika. No. 3, March 71, Abstract No. 3A422P)

Translation: A variable sinusoidal voltage oscillator is proposed in the circuit of a symmetrical double-ended amplifier with positive feedback, the outputs of which are connected through a switch and a filament lamp to a measurement stage in the form of a bridge circuit; in one of the arms of the bridge a photoresistor is connected, and in the bridge diagonal is a voltage indicator. Present oscillators of this type are complex and still do not provide sufficient output power. In the proposed oscillator, for the purpose of stabilizing the output voltage, an additional photoresistor whose resistance varies as a function of the light intensity of the filament lamp connected in the indicator circuit, is put in the positive feedback network. L. L.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

UDC: 621.317.616

ROYTMAN, M. S., STUDENIKIN, V. N.

"On the Possibility of Using Phase Relationships to Evaluate the Frequency Error of Symmetric Attenuation Boxes"

Izv. Tomsk. politekhn. in-ta (News of Tomsk Polytechnical Institute), 1970, 184, pp 85-90 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11A320)

Translation: The paper points out the difficulties which arise in measuring the frequency error of attenuation boxes. These devices may be classified as minimum phase circuits for which there is a single-valued phase relationship between the phase and frequency characteristics. A brief theoretical basis is given as well as a procedure for studying the phase and frequency characteristics of attenuation boxes. On the basis of the results, the authors conclude that phase relationships may be used for determining the frequency error of attenuation boxes for frequencies of no more than 150 kHz, since the phase characteristics in this range are steeper than the frequency characteristics. For higher frequencies, it is simpler to evaluate errors from the frequency characteristic. Bibliography of four titles. E. L.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR UDC 621.373.421.1(088.8)

ROYTMAN, M. S.

"Generator of Harmonic Oscillations of Stable Amplitude"

USSR Author's Certificate No 259173, Filed 26 Feb 68, Published 28 Apr 70 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9D252)

Translation: This author's certificate introduces a generator of harmonic oscillations of stable amplitude in the form of a cathode repeater by the White scheme with positive feedback and containing a positive feedback voltage divider taken off the output of the step-up transformer with a parallel oscillatory circuit in the output arm and also a thermoresistor. In order to insure extremely small nonlinear distortions, the thermoresistor is included in the positive feedback circuit between the output of the step-up transformer and the common bus, and the resistance of the plate load of the cathode follower tube (under conditions of identity of the tube characteristic and absence of local negative feedback) is selected within the limits of (1.5-1.7)/S where S is the steepness of the plate characteristic of the tube.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

R

UDC 621.375.132.9(088.8)

SERGEYEV, V. M., ROYTMAN, M. S.

"Amplifier with Parallel Control"

USSR Author's Certificate No 254575, Filed 30 Apr 67, Published 11 Mar 70 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9D128P)

Translation: This author's certificate introduces an amplifier with parallel control and series power supply for the input and output transistors with respect to direct current. In order to improve the phase-frequency characteristic and increase the linearity of the amplitude characteristic and temperature stability, the input transistor is included with respect to a circuit with a common base, and a series connected resistor and capacitor are introduced between the base of this transistor and the emitter of the output transistor included with respect to a circuit with a common collector.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

UDC: 616-082(470.26-22)

CENTRALIZATION OF MEDICAL CARE IN RURAL AREAS (ON THE MODEL OF KALININGRADSKAYA OBLAST)

[Article by V.P. Fofanov, I.Ya. Bobokhodzhayev, M.P. Roytman, I.A. Volkova, V.M. Bychkov, All-Union Scientific Research Institute of Social Hygiene and Public Health Organization imeni N.A. Semashko, USSR Ministry of Health, Moscow; Moscow, Sovetskoye Zdravookhraneniye, Russian, No 1, 1973, submitted 3 August 1972, pp 18-23].

The program of the CPSU provides for meeting in full the demands of the urban and rural population with respect to all forms of highly qualified medical care. The need for bringing the level and quality of medical care in rural areas closer to the level provided to urban regions was indicated in the decision of a session of the USSR Supreme Council (June, 1968) and Decree of the Central Committee of the CPSU and USSR Council of Ministers, No 517 dated 5 July 1968: "On Measures for Further Improvement of Public Health and Development of Medical Science in the Country"; this was also discussed at the 24th Congress of the CPSU.

The system of medical care based on the principle of stage development and combining a set of therapeutic and prophylactic institutions, provides the rural population with all forms of qualified specialized medical care. More than 100,000 different therapeutic and prophylactic institutions participated in implementing this task in 1971; they included more than 15,000 hospitals, 247 of them oblast hospitals (regional, republic level), 2,899 central rayon, 789 rayon (numbered), and 11,051 rural district hospitals.

The existing system of public health organization has made it possible to eliminate almost entirely the difference between availability of hospital care for the rural and urban population. This is achieved, to some extent, by hospitalization of rural residents in urban hospitals. In some republics, more than 40 percent of the rural population was hospitalized in urban hospitals in 1970. For the USSR as a whole, an average of 204 per 1,000 rural residents were hospitalized, and this applied to 207 per 1,000 urban residents.

JPRS 58275
21 Feb 73

Roytman, M.P.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

UDC 612.8.015.1

MAKARCHENKO, A. F., ROYTRUB, B. A., ZLATIN, R. S., GENIS, Ye. D., and KOSTYUK, O. I., Institute of Physiology imeni A. A. Bogomolets, Academy of Sciences Ukrainian SSR, Kiev

"Acetylcholinesterase Activity in Hypothalamic and Cortical Structures During the Action of Pharmacological Agents"

Kiev, Neyrofiziologiya, Vol 5, No 1, Jan/Feb 73, pp 47-53

Abstract: Acetylcholinesterase (AChE) activity in rat brain was recorded continuously by the automated electrometric method. In intact rats aged 1 month, AChE activity is highest in the sensory and motor cortex, while various lower levels are assumed in the posterior hypothalamus, anterior hypothalamus, and hippocampus. With advancing age (6, 12, and 24 months), the center of AChE activity is shifted to the posterior hypothalamus, and there is a general decrease in AChE activity per gram of tissue. Adrenaline, injected subcutaneously in a dose of 300 mcg/kg, redistributes AChE activity within 15 min, shifting the maximum to the anterior hypothalamus. An identical dose of chloral hydrate reduces AChE activity and equalizes it in all these structures. The histochemical method, though good for determining the location of AChE in cell organelles, is unable to detect small variations in AChE activity. Since

1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

MAKARCHENKO, A. F., et al, Neyrofiziologiya, Vol 5, No 1, Jan/Feb 73, pp 47-53

AChE activity reflects the physiological activity of the given structure, the electrometric method is recommended for determinations of the functional state of nervous tissues.

2/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

KOBRIN, M. M., REZCHIKOV, A. S., ROYTSHTEYN, M. M.

"Increasing the Fatigue Strength of Welded Elements in Prestressed Guy Structures"

III Mezhdunar. Konf. Po Predvarit. Napryazh. Metal. Konstruktsiyam., T. 3, [Third International Conference on Prestressed Metal Structures, Volume 3 -- Collection of Works], pp 130-140. (Translated from Referativnyy Zhurnal Mekhanika, No 1, 1972, Abstract No 1V1178 by Ya. M. Ayzenberg).

Translation: A description is presented of typical forms of bending of mechanical Guy parts. Changes are suggested in the design of equipment in order to increase the endurance and reliability under cyclical operating loads. Results are presented from experimental tests of the effectiveness of structures suggested and technological measures performed at the Central Scientific Research Institute of Structural Parts imeni V. A. Kucherenko. It is concluded that consideration of the actual operating conditions of structures during planning by shifting of welded seams to the least stressed areas, as well as strain hardening and working of seams can increase the reliability of mechanical parts in prestressed Guy structures significantly. The method suggested are recommended also for increasing the reliability of other types of prestressed structures.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

UDC 621.317.794

KREMENCHUGSKIY, L. S., ROYTSINA, O. V., SAMOYLOV, V. B.

"A Thermal Receiver for the Measurement of Radiation by the Comparison Method"

Leningrad, Optiko-Mekhanicheskaya Promyshlennost', No 12, Dec 70, pp 11-14

Abstract: An analysis is given of the operation of a thermal receiver for the measurement of electromagnetic radiation by the comparison method. The receiver operates on the basis of a modulated radiation flux, and employs the electrical replacement of this flux by the power of the alternating-current joule loss. It is shown that receiver sensitivity depends on the thickness of the dielectric layer, the thermophysical properties of the dielectric layer and the characteristics of the sensitive element. The measurement installation used with the receiver is described. Some data are given on a pyroelectric receiver that operates on the basis of a sinusoidally modulated radiation flux. 3 figures, 1 table, 8 bibliographic entries.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR UDC: 681.3.06:51

ROZENKNOP, V. D., ROYTVAN, A. I., LIFSHITS, V. N.

"Expanding the Library of Standard Programs for the TAM-22 Translator"

V sb. Primeneniye vychisl. tekhn. v elektrotekhn. prom-sti (Using Computer Technology in the Electrical Engineering Industry--collection of works), Moscow, 1971, pp 272-274 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V591)

[No abstract]

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

1/2 020 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--DUALITY AND MULTIPERIPHERAL PROCESSES -U-

AUTHOR-(02)-DREMIN, I.M., ROYZEN, I.I.

R

COUNTRY OF INFO--USSR

SOURCE--PHYS. LETT.; 31B: 71-4 (19JAN 1970)

DATE PUBLISHED--19JAN70

SUBJECT AREAS--PHYSICS, ATMOSPHERIC SCIENCES

TOPIC TAGS--COSMIC RAY, DIFFERENTIAL CROSS SECTION, INELASTIC SCATTERING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1982/0654 STEP NO--NE/0000/70/000/000/0071/0074

CIRC ACCESSION NO--AP0052114

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

2/2 020 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0052114

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COMBINED USE OF THE FINITE ENERGY SUM RULES APPROACH FOR THE TREATMENT OF CROSS SECTIONS IN THE RESONANCE REGION AND OF THE BETHE SALPETER EQUATION FOR THE DESCRIPTION OF INELASTIC PROCESSES AT HIGH ENERGIES LEADS TO A RELATION BETWEEN THE LEADING REGGE TRAJECTORY AND OTHER TRAJECTORIES. AN UPPER LIMIT OF THE RESONANCE REGION APPEARS IN EQUATIONS AS A PARAMETER, WHICH, WITHIN THE FRAMEWORK OF THE BETHE SALPETER EQUATION, WAS PREVIOUSLY SHOWN TO BE OF THE ORDER OF A FIREBALL MASS. AN ESTIMATE OF ITS VALUE (WITH REGGE TRAJECTORIES ASSUMED TO BE KNOWN) SHOWS THAT IT COINCIDES WITH VALUES GIVEN BOTH BY FINITE ENERGY SUM RULES AND BY COSMIC RAY EXPERIMENTS.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

UDC: None

AKIMOV, V. N. and ROYZEN, I. I.

"Some Consequences of the Peripheral Interaction Theory"

Moscow, Yadernaya Fizika, Vol. 11, No. 2, 1970, pp 472

Abstract: Earlier papers have shown that a correct qualitative description of the characteristics of inelastic processes of the fireball type can be obtained by starting from the general limitations on the behavior of the elastic interaction amplitude and the Bethe-Salpeter equation. On the basis of this approach, the current paper considers three questions: the multiplicity in the peripheral interaction of high-energy particles; the inclination of vacuum trajectories at t = 0; the pre-asymptotic behavior of the cross section. The first two are answered by starting from the Bethe-Salpeter equation. The authors conclude, in considering the third question, that the existence of inelastic processes of the fireball type leads to a moving vacuum singularity: i.e., to elastic dispersion with a narrow diffraction cone. They make the further conclusion that the existence of a region of cross-section growth with energy is still not a unique confirmation of the existence of the Pomeranchuk band. They express their gratitude to D. S. Chernavskiy for his many comments.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR UDC 681.325.65:621.374.33

IVAKIN, B. F., ROYZEN, ~~V. Z.~~, ROZENTAL', N. K., Leningrad Production Amalgamation "Krasnaya Zarya"

"A Logic Element"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 2, Jan 71, Author's Certificate No 290453, division H, filed 30 Jun 69, published 22 Dec 70, p 161

Translation: This Author's Certificate introduces: 1. A logic element which contains a symmetric magnetic system with control windings, and a contact system. As a distinguishing feature of the patent, the logical possibilities of the element are expanded by forming the magnetic system from a horizontal bridge and six vertical rods with control windings in sets of three on opposite sides of the horizontal bridge, a permanent magnet set in the middle of the horizontal bridge between the above-mentioned rods, and a double-arm rotating armature fastened over the permanent magnet in such a way that one of the arms touches the end faces of the right or left rods. 2. A modification of this element distinguished by the fact that control of the element is simplified by making the control windings with two sections, one section being on the upper half of one rod, while the other section is on the lower half of another rod.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR UDC 621.382.3

ROYZIN, N. M.

"Theory of the MIS Transistor With Surface Capture Centers"

Kiev, IVUZ Radioelektronika, Vol 14, No 11, Nov 71, pp 1340-1352

Abstract: The author investigates the effect of surface captuer centers on the electrical characteristics of the MIS transistor. Formulas are derived which relate the current and rms fluctuation of current to such parameters as the surface density of capture centers, their energy position and the gate potential. The spectral power distribution of electrical fluctuations is determined and analyzed as a function of the nature of the distributions of capture centers in a dielectric film. Two figures, bibliography of seven titles.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

1/2 039 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--VIBRATIONS AND BALANCING OF AIRCRAFT ENGINE ROTORS -U-

AUTHOR-(02)-LEVIT, M.YE., ROYZMAN, V.P.

COUNTRY OF INFO--USSR

SOURCE--(VIBRATSIYA I URAVNOVESHIVANIYE ROTOROV AVIADVIGATELEY) MOSCOW, MASHINOSTROYENIYE, 1970, 171 PP

DATE PUBLISHED--------70

SUBJECT AREAS--PROPULSION AND FUELS

TOPIC TAGS--SHAFT VIBRATION, AIRCRAFT ENGINE, JET ROTOR, ENGINE MAINTENANCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0243 STEP NO--UR/0000/70/000/000/0001/0172

CIRC ACCESSION NO--AM0132508

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

2/2 039

UNCLASSIFIED

CIRC ACCESSION NO--AM0132508 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PREFACE 3. INTRODUCTION 5. CHAPTER I THEORETICAL PRINCIPLES OF BALANCING OF ELASTICALLY DEFORMABLE ROTORS 12. II METHODS FOR BALANCING OF ELASTICALLY DEFORMABLE ROTORS 41. III CERTAIN SPECIAL BALANCING METHODS 82. IV EQUIPMENT AND AAPPARATUS FOR INVESTIGATION OF AIRCRAFT ENGINES AND BALANCING OF THEIR ROTOR SYSTEMS 113. V EXAMPLES FOR INVESTIGATIONS OF VIBRATIONS AND BALANCING 159. BIBLIOGRAPHY 170. THE BOOK CONTAINS A REVIEW OF CONTEMPORARY METHODS FOR BALANCING OF AIRCRAFT ROTORS FACTORS WHICH EFFECT THE LEVEL OF VIBRATIONS OF ENGINES. CONSIDERABLE ATTENTION IS GIVEN TO THE COMPLEX METHOD FOR INVESTIGATION OF AIRCRAFT ENGINE DYNAMICS AS A STAGE PRECEEDING THE SELECTION OF THE METHOD FOR ROTOR BALANCING. GIVEN ARE RESULTS OF INVESTIGATIONS OF VIBRATIONS OF FULL SCALE GAS TURBINE AIRCRAFT ENGINES, THEIR COMPRESSORS AND TURBINES. GIVEN ARE SOLUTIONS TO PROBLEMS CONNECTED WITH AUTOMATION OF BALANCING PROCESSES AND DEVELOPMENT OF NEW BALANCING METHODS, AS WELL AS EQUIPMENT.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

UDC 541.67:547.241

ROMM, I. P., ROZANEL'SKAYA, N. A., GUR'YANOVA, Ye. N., BOKANOV, A. I., and STEPANOV, B. I., Scientific Physical-Chemical Research Institute imeni L. Ya. Karpov and Moscow Chemical Technological Institute imeni D. I. Mendeleyev

"Dipole Moments of Methyl Substituted Triphenylphosphines"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 7, Jul 73, pp 1650-1651

Abstract: Dipole moments of tri-, hexa-, and nonamethyl substituted triphenylphosphines have been determined. All the results except for the nonamethyl homolog agreed with literature data. The trimesitylphosphine dipole was lower by 0.5 D than that of the triphenylphosphine. This indicates considerable change in the geometry of triphenylphosphine upon introduction of two methyl groups into the orthopositions of each ring.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

1/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--PHASE EQUILIBRIUMS IN THE FERRITE REGION OF A MANGANESE,IRON,OXYGEN SYSTEM -U-

AUTHOR-(02)-BULGAKOVA, T.I., ROZANOV, A.G.

R

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(3), 693-8

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--MANGANESE, IRON, OXYGEN, SPINEL, FERRITE, PHASE DIAGRAM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1102 STEP NO--UR/0076/70/044/003/0693/0698

CIRC ACCESSION NO--AP0123094

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

2/2 022 UNCLASSIFIED

CIRC ACCESSION NO--AP0123094 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE EQUIL. IN THE SYSTEM MNFE SUBN O SUBX H SUB2 H SUB2 O WAS STUDIED AT 969 AND 1000DEGREES FOR 3.852 LARGER THAN OR EQUAL TO N LARGER THAN OR EQUAL TO 1.180 WITHIN THE LIMITS FROM THE SPINEL TO MNO PLUS FE. THE STABILITY LIMITS OF THE SPINEL AND LOWER OXIDE PHASES WERE ESTABLISHED. THE PHASE DIAGRAM IN THE FERRITE REGION OF THE MN-FE-O SYSTEM FOR 969DEGREES IS PRESENTED.

FACILITY: KHIM. FAK., MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

4

ARAKSLOV, A. G., KOLESNIKOV, B. P., KONONENKO, V. A., LUK'YANOV, A. N., MALOV, V. V., POLYAK, L. Z., ROZANOV, A. N., and TITOV, B. V.

"Device for Studying Structural Changes in Refractory Metals and Alloys"

USSR Authors' Certificate No 356536, Cl. G 01n 23/20, filed 7 Dec 70, published 23 Oct 72 (from Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 32, 1972, p 121)

Abstract: The device, which studies structural changes during high-temperature strain in a vacuum or other environment, contains a working chamber with a beryllium window located on the front cover, a loading mechanism, clamps for the specimen, heaters, mechanisms for measurements and the recording of readings. For purposes of studying the structure of a specimen during tests, the front cover of the working chamber has mounted on it a device for X-ray analysis with a mechanism for the vertical displacement of this device along the specimen and a mechanism for rotating it around a horizontal axis.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

UDC 577.16:576.314.612.12

TOTSKIY, V. M., ROZANOV, A. Ya., BEKKER, B. Z., Biochemistry Department of Odessa University imeni I. I. Mechnikov

"Effect of Vitamins on Erythrocyte Permeability for Nicotinate-C^{14} under the Effect of Acceleration on the Organism"

Kiev, Ukrains'kiy Biokhimichniy Zhurnal, Vol 44, No 4, 1972, pp 509-514

Abstract: In experiments in vitro a study was made of the characteristic features of the absorption and binding of nicotinic acid tagged with C^{14} ($NA-C^{14}$) by the blood cells of rats under supergravitation conditions. The effect on these processes of certain other functionally bound vitamins was also determined. It was established that riboflavin and pantothenate have no effect on the intensity of the $NA-C^{14}$ absorption by erythrocytes at the same time as thiamine and lipoate promote it. Under other equal conditions, the erythrocytes of the experimental animals absorb a larger amount of $NA-C^{14}$ than the control animals, and they lose it faster during repeated lavages. This indicates an increase in the permeability of the biological membranes under the effect of supergravitation. The presence of individual vitamins in the incubation medium not only does not prevent the loss of $NA-C^{14}$ by the erythrocytes of the experimental 1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

TOTSKIY, V. M., et al., Ukrains'kiy Biokhimichniy Zhurnal, Vol. 44, No 4, 1972, pp 509-514

animals with subsequent lavages, but it even promotes an increase in the losses. The complex application of the investigated vitamins has no effect on the NA-C^{14} absorption by the erythrocytes; however, it has a positive effect on the mechanisms promoting retention of nicotinic acid and its metabolites in the blood cells.

2/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

UDC 615.372:576.851.551].033.81.018.1

BONDARCHUK, N. G., KRYZHANOVSKIY, G. N., and ROZANOV, A. Ya., Chair of Biochemistry, Odessa University imeni I. I. Mechnikov, and Laboratory of the Pathophysiology of Infection Intoxications, Institute of Normal and Pathological Physiology, Academy of Medical Sciences USSR, Moscow

"The Effect of Natitoxin on Tetanus Toxin Fixation by Subcellular Structures of the Brain"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 75, No 3, 1973, pp 39-42

Abstract: Experimental findings indicate that purified tetanus toxin labeled with I^{131} is bound by the so-called crude mitochondria fraction of guinea pig brain, which includes mitochondria, synaptosomes, and myelin fragments. The largest portion of the toxin is bound by synaptosomes, a smaller by myelin fragments, and the smallest by mitochondria. Tetanus toxin neutralized by antitoxin is also bound by these structures but to a somewhat lesser extent. No such reduction in fixation occurs when tetanus toxin and antitoxin are added to the crude mitochondria extract simultaneously. The data support the previously advanced hypothesis that the tetanospasmin molecule has separate sites at which fixation to nervous tissue and to antitoxin takes place.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

1/2 019 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--BIOSYNTHESIS OF COENZYME A FROM PANTOTHENATE DERVIATIVES IN RATS -U-

AUTHOR-(04)-ROZANOV, A.YA., SAVLUCHINSKAYA, L.G., ZHDANOVICH, YE.S., KOPELEVICH, V.M.

COUNTRY OF INFO--USSR

R

SOURCE--BIOKHIMIYA 1970, 35(1), 58-63

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ENZYME, BIOSYNTHESIS, CELL PHYSIOLOGY, MITOCHONDRION, VITAMIN B COMPLEX, ADENOSINE TRIPHOSPHATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/0839 STEP NO--UR/0218/70/035/001/0058/0063

CIRC ACCESSION NO--AP0055541

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

2/2 019 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0055541

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PANTOTHENATE ADMINISTERED PARENTERALLY TO RATS INCREASED THE CONTENT OF COA IN ORGANS ONLY WHEN ATP, CYSTEINE, THIAMINE, AND NICOTINATE WERE ADMINISTERED SIMULTANEOUSLY. THE DEGREE OF COA BIOSYNTHESIS CORRELATED WITH INCREASING DOSES OF ITS PRECURSORS AND OF THE VITAMINS AND WAS INCREASED BY HYDROCORTISONE. 4-PHOSPHO-D-PANTOTHENATE AND ESP. S-BENZOYL-D-PANTETHEINE AND 4-PHOSPHO-S-BENZOYL-D-PANTETHEINE WERE MORE EFFECTIVE THAN PANTOTHENATE IN INDUCING COA SYNTHESIS, POSSIBLY DUE TO THEIR CLOSER STRUCTURAL SIMILARITY TO THE COENZYME AND THEIR MORE RAPID PERMEABILITY THROUGH THE BLOOD TISSUE BARRIERS AND THE CELLULAR AND MITOCHONDRIAL MEMBRANES.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

Acc. Nr: AP0047221

Ref. Code: UR 0300

PRIMARY SOURCE: Ukraynsʼkiy Biokhimichniy Zhurnal, 1970, Vol 42, Nr 1, pp 8-11

EFFECT OF PANTOTHENATE, RIBOFLAVIN AND NICOTINATE ON DEPOSITION OF THIAMINE-S^{35} IN ORGANISM OF ALBINO RATS

A. Ya. Rozanov, Vu Van Anʼ

Department of Biochemistry, the I. I. Mechnikov State University, Odessa

Summary

The intensity was determined of thiamine-S^{35} deposition in homegenates of the liver, kidneys, small intestines myocardium and skeletal muscles and brain of albino rats at different times (in 1, 2, 4, 8, 16 and 24 hrs) under the effect of pantothenate, riboflavin and nicotinate.

These vitamins increase the intensity of thiamine-S^{35} deposition in the liver, kidneys and to a less degree — in the membranes of small intestines during the first hours after injection, and in the myocardium and brain during the next 24 hrs.

1/1

REEL/FRAME
19790723

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

CAROL

JPRS 59985
7 SEP 73

(3)

UDC 621.396.628:523.164

A SYSTEM FOR AUTOMATING OBSERVATIONS ON THE RTI-7.50/250 MVTU RADIOTELESCOPE

[Article by A.A. Pershchikov, ~~D.A. Rozanov~~, and V.S. Sagatelov of the Moscow Higher Technical School imeni N.E. Bauman; Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Radiofizika, Russian, Vol 16, No 5, 1973, submitted 4 November 1972, pp 703-706]

The first solar and lunar observations made on the RTI-7.5/250 MVTU [Moscow Higher Technical School imeni N. E. Bauman] radiotelescope showed that the minimal width of the radiation pattern was close to that computed ($\theta_{0.5} \approx 30''$ at $\lambda =$ 1 millimeter). For practical work on radio sources the position of the antenna's radiation pattern must be controlled in space with a precision of no less than $(1/3-1/6)\theta_{0.5}$, that is, 10 to 5". To solve this problem, a design has been developed for a high-precision synchronous-tracking drive (SSP) system whose implementation will permit RTI-7.5/250 antennas to have the following operating modes:

Automatic guidance and tracking per UVM [general-purpose computer] data, with or without scanning of the target;

Semiautomatic guidance of slow and rapid motion;

Automatic tracking per a photo-guide;

Rapid resetting of antennas in all operating-angle bands; and

Functional monitoring of the whole control complex in a local control mode.

Investigations of the precision and stability of the radiotelescope's control systems, which were examined as a combined linear pulsed (impul'snyy) system[1], were made with a

ROZANOV, B.A.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

UDC 546.65'173'185

ROZANOV, I. A., BERNIKOV, V. R., TANANAYEV, I. V., and CHEL'TSOV, P. A., Institute of General and Inorganic Chemistry imeni N. S. Kurnakov, Academy of Sciences USSR Moscow

"Trimetaphosphimates of Multivalent Metals. I. Investigation of the Interaction in the System $LaCl_3$-$Na_3(PO_2NH)_3$-H_2O"

Moscow, Doklady Akademii Nauk SSSR, Vol 201, No 4, Dec 71, pp 872-874

Abstract: Sodium trimetaphosphimate -- $Na_3(PO_2NH)_3 \cdot 4H_2O$ -- was obtained by hydrolysis of the phosphonitrile chloride trimer -- $(PNCl_2)_3$. $LaCl_3$ was then reacted with $Na_3(PO_2NH)_3^{3-}$ changing the initial ratio n of $(PO_2NH)_3^{3-}$ to La^{3+} from 0.25 to 6. The mixture was then stirred for 24 hrs to reach an equilibrium state, and the solid separated from solution by filtration. The results of the analysis of the solution and solid showed that during the reaction of $Na_3(PO_2NH)_3$ with $LaCl_3$ in the 0.25-1 range of n continuous decrease of the final concentration of La_3^{3+} takes place, equivalent to the quantity of trimetaphosphimate added. The residual concentrations of $(PO_2NH)_3^{3-}$ are all in

1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

ROZANOV, I. A., et al., Doklady Akademii Nauk SSSR, Vol 201, No 4, Dec 71, pp 872-874

the range of $2 \cdot 10^{-4}$ g-ion/l -- corresponding to the solubility of the precipitate. In this range one solid phase is formed with n = 1, the composition of the product being $La(PO_2NH)_3 \cdot 5.5\ H_2O$. This product persists up to n = 2, after which the ratio begins to change, until at n = 5 it reaches the level of 2. The product isolated at n = 5 has the composition $Na_3La[(PO_2NH)_3]_2 \cdot 8\ H_2O$. The first product is crystalline, the octahydrate is amorphous. Both materials are colorless, insoluble in water, alcohol, acetone, and ether; they dissolve with decomposition in concentrated HCl.

2/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

1/2 026 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--THE DIAGNOSIS OF PANCREATIC TUMORS -U-

AUTHOR-(02)-RUZANOV, I.B., SADELNIKOV, G.I.

COUNTRY OF INFO--USSR

SOURCE--KHIRURGIYA, 1970, NR 2, PP 76-80

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PANCREAS, TUMOR, JAUNDICE, DIAGNOSTIC METHODS, ANGIOGRAPHY, LIVER, METASTASIS, BILE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/1330 STEP NO--UR/0531/70/000/002/0076/0080

CIRC ACCESSION NO--AP0054214

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

2/2 026 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0054214

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FOR THE PURPOSE OF PREOPERATIVE DIAGNOSIS OF MECHANICAL JAUNDICE THE AUTHORS CONDUCTED AN ANGIOGRAPHIC INVESTIGATION OF PANCREATIC VESSELS IN 17 CASES, CELIACOGRAPHY, IN 14 CASES, MESENTERICOGRAPHY, IN 5 CASES AND BOTH TECHNIQUES WERE COMBINED IN 2 CASES. IN VIEW OF RICH PANCREATIC VASCULARIZATION THE METHOD OPENS UP WIDE VISTAS IN THE DIAGNOSIS OF TUMORS AND LESIONS OF THE PANCREAS. ANGIOGRAPHY ENABLED TO ESTABLISH A DIAGNOSIS OF PANCRATIC TUMOR IN 9 PATIENTS, IN SOME CASES ALL OTHER TECHNIQUES PROVED TO INEFFECTIVE. SELECTIVE ANGIOGRAPHY OF THE CELIAC STEM ALSO MAKES IT POSSIBLE TO DETECT METASTASES INTO THE LIVER. A COMBINATION OF CELIACOGRAPHY WITH TRANSCUTANEOUS CHOLANGIOGRAPHY AFFORDS COMPLETE INFORMATION ON THE LOCALIZATION OF THE TUMOR, ITS SPREAD AND STATE OF THE BILE DUCTS.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR UDC 331.02.001.33

MARCHENKO, YE. N., KANDROR, I. S., and ROZANOV, L. S., Institute of Labor Hygiene and Occupational Diseases, Academy of Medical Sciences USSR, and Institute of the Hygiene of Railroad Transportation

"Principles of Classifying Work by Strenuousness, Harmfulness, and Danger"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 3, 1972, pp 4-12

Abstract: Modern industrial jobs are classified into four categories -- light, medium, heavy, and very heavy -- on the basis of the following criteria: physical power (expressed in watts and exerted by each part of the body as well as the maximum weight of objects lifted); static load (in kg/sec, exerted on each part of the body as well as work posture and freedom of movement); and psychic tension with such subcategories as attention (number of important objects observed simultaneously, % duration of concentrated attention, % duration of active operation, average number of information signals observed per hr, and emotional tension), number of the shift, analysis of visual and auditory feedback, volume of operative memory, intellectual difficulty, and monotony. The industrial environment is classified into eight classes (from optimum to dangerous) according to the following criteria: temperature and humidity (cooling and heating the body); concentration of toxic substances; concentration of industrial dust; intensity of electric and magnetic fields, and industrial noise and vibration.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

UDC: 621.372

VARFOLOMEYEV, I. N., YERMOLEYEV, A. A., ROZANOV, N. Ya., STRAUTMANIS, G. F.

"A Generalized Method of Analyzing Active Microelectronic RC Filters"

Teor. elektrotekhnika. Resp. mezhved. nauch.-tekhn. sb. (Theoretical Electrical Engineering. Republic Interdepartmental Scientific and Technical Collection), 1971, vyp. 11, pp 86-93 (from RZh-Radiotekhnika, No 3, Mar 72, Abstract No 3A128)

Translation: The paper shows the necessity of four basic steps in design of microelectronic active RC filters. Particular attention is given to the first stage of design -- analysis. A generalized method is proposed for analyzing microelectronic RC filters in the steady-state mode on the BESM-4 digital computer. Three illustrations, five tables, bibliography of five titles. Resumé.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

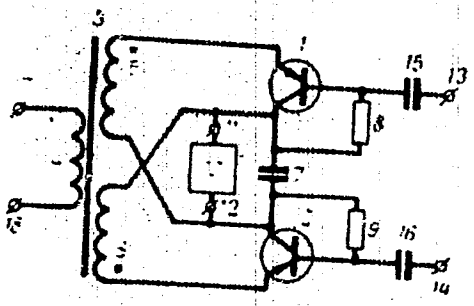
"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

AA0039825 R

Soviet Inventions Illustrated, Section II Electrical, Derwent, UR 0482

238619 TWIN BALANCED FREQUENCY MODULATOR

containing two transistors associated with secondary windings of output transformer. The generator of modulating frequency (10) is connected to the collectors of two transistors The control frequency is applied to terminals (13), (14). Linearity of modulation is improved by capacitor (7).



1/2

13.3.67. as 1138830/26-9, SUKHODOEV, I.V. and ROZANOV, N.A. (21.7.69) Bul. 10/10.3.69. Class 21a Int. Cl. H 03d.

4

19741183

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

AA0039825

AUTHORS: Sukhodoyev, I. V.; Rozanov, N. A.

2/2

19741184

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

1/2 031 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--NOISE IN THE LOCKING REGION OF A RING LASER -U-

AUTHOR--ROZANOV, N.N.

R

COUNTRY OF INFO--USSR

SOURCE--OPTIKA I SPEKTROSKOPIIA, VOL. 28, APR. 1970, P. 740-743

DATE PUBLISHED----APR70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--LASER GYROSCOPE, ELECTROMAGNETIC NOISE, FREQUENCY LOCKING, ERROR ANALYSIS, GYROSCOPE MOTION, PHASE MEASUREMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1217 STEP NO--UR/0051/70/028/000/0740/0743

CIRC ACCESSION NO--AP0124871

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

2/2 031 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124871

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THEORETICAL INVESTIGATION OF THE DETRIMENTAL EFFECT OF FREQUENCY LOCKING ON THE ACCURACY OF MEASURING THE ANGULAR VELOCITY FROM THE BEAT FREQUENCY OF OPPOSING MODES OF A RING LASER USED BY A LASER GYROSCOPE AND ON THE ACCURACY OF SUCH MEASUREMENTS BY A PHASE METHOD PROPOSED BY ROZANOV ET AL. (1967). IT IS SHOWN THAT THE ERROR RATIO OF THESE METHODS IS INDEPENDENT OF THE CHARACTERISTICS OF THE NOISE SOURCE, AND THAT THE MEASUREMENT ACCURACY CAN BE CONSIDERED TO BE EQUAL FOR BOTH METHODS.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

BELOUSOVA, I. M., DANILOV, O. B., ZAPRYAGAYEV, A. F., and ROZANOV, N. N.

"Study of the Radiation Spectrum of a Laser Used as Receiver of a Signal With a Doppler Shift"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 58, No 2, Feb 70, pp 394-406

Abstract: The article describes results of a study of the radiation spectrum of a helium-neon laser which is acted on by a signal reflected from a moving object (a mirror or a reflector with a diffusing surface). It is shown that at a significantly low answer signal intensity ($\sim 10^{-4}$ of the output power) beats appear in the laser radiation whose frequency is determined by Doppler's law, with a modulation depth close to 100 percent. The low-frequency beat spectrum reveals harmonics. Two reasons are assumed for the appearance of the harmonics: 1) multiple passage of the signal between the laser and the moving object, and 2) (in the case of a multifrequency laser mode) non-

1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

BELOUSOVA, I. M., et al., Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 58, No 2, Feb 70, pp 394-406

linear interaction between the field of the answer signal of one mode and the field of another mode.

It was found experimentally that a mode of stimulated laser generation sets in after the signal reflected from the moving object ceases to act on it ("memorization" effect). It is shown that the existence of the "memorization" effect is due to the presence of harmonics in the beat spectrum. The question of the stability of the "memorization" mode is considered theoretically. It is suggested that there is a stability region for the case of three frequencies belonging to one longitudinal mode.

2/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

Acc. Nr: AP0043669

Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1970, Vol 58, Nr 2, pp 394-406

INVESTIGATION OF THE RADIATION SPECTRUM OF A LASER EMPLOYED AS A DETECTOR OF A DOPPLER SHIFTED SIGNAL

L. M. Belousova, O. B. Danilov, A. F. Zapryagayev, N. N. Rozanov

The radiation spectrum of a helium-neon laser subjected to the action of a signal reflected from a moving body is investigated. Stimulated generation arising on cessation of action of the external signal on the laser is observed.

1/1

REEL/FRAME
19770073

2/PI

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

(41)

		Page
Brikker, A. S., Krasovskiy, R. R.	Reception of a Fluctuating Optical Signal	144
Vavtsel', V. I.	Optimization of an Optical Heterodyning System	152
Shchelkunov, K. N.	Analysis of the Synchronization of an Optical Communication Channel with Time Division Multiplexing of the PCM Trunks	159
Litvinova, T. P., Lobkova, L. M.	Frequency-Space Correlation Function of the Amplitudes of Waves Propagated in a Locally Isotropic Turbulent Atmosphere	166
Lobkova, L. M., Chistyakov, A. B., Lobkov, M. M.	Effect of Amplitude and Phase Field Distribution at a Laser Output on the Spatial Coherence of the Laser Emission	174
Lobkova, L. M., Chistyakov, A. B., Lobkov, M. M.	Fast and Slow Fluctuations of the Angles of Arrival of Laser Emission	181
Kislitsin, N. V., Poddubnyy, V. V.	Statistical Description of Hermitian and Laguerre Photon Fluxes	189
Kislitsin, N. V., Poddubnyy, V. V., Fulemin, V. P.	Quantum Mechanical Description of Some Procedures of Nonparametric Statistics	194
Poddubnyy, V. V., Trivozhenko, B. Ye.	Potential Accuracy of Measuring the Angular Position of Photon Source	198
Yelisayev, P. G., Ismailov, I., Fedorov, Yu. F., Kazarnovskaya, L. G.	Application of Semiconductor Lasers for Multichannel Optical Communications	202
Strizhevskiy, V. L., Karpenko, S. G., Bigayev, A. V.	Relation of the Distribution Functions of a Quasimonochromatic Signal and Its Amplitudes ..	205
Deryugin, I. A., Kuratov, V. N.	Optimization of Optical-Band Quantum Counting Systems	210
Adrianova, I. I., Brodovich, N. A., Volchonskiy, V. B., Danilov, B. S., Nesterova, Z. V., Petrova, A. V., Popov, Yu. V., Rozanov, N. N.	Laser Emission Modulation	221

ROZANOV, N. N.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

TECHNICAL TRANSLATION

FSTC-HT-23-2015-72

ENGLISH TITLE: PROBLEMS OF LASER BEAM DATA TRANSMISSION
PROCEEDINGS OF THE FIRST ALL-UNION CONFERENCE, KIEV, SEPTEMBER 1968

FOREIGN TITLE: PROBLEMY PEREDACHI INFORMATSII LAZERNYM IZLUCHENIYEM

AUTHOR: I. A. DERYUGIN, ET AL.

SOURCE: KIEV ORDER OF LENIN STATE UNIVERSITY
IMENI T.G. SCHEVCHENKO

Translated for FSTC by ACSI

NOTICE

The contents of this publication have been translated as presented in the original text. No attempt has been made to verify the accuracy of any statement contained herein. This translation is published with a minimum of copy editing and graphics preparation in order to expedite the dissemination of information.

Approved for public release. Distribution unlimited.

- Title Page -

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR UDC:534.222.2

ROZANOV, O. K., DREMIN, A. N., Moscow

"Elastic Wave in Thin-Walled Envelope and its Role in the Occurrence of Low-Speed Detonation"

Novosibirsk, Fizika Goreniya i Vzryva, Vol. 6, No. 3, Sep 70, pp. 342-351

Abstract: The elastic wave propagating through the walls of a glass container is very significant for an understanding of the process of combustion of a liquid explosive contained in the container. This article presents a study of the pressure beyond the elastic wave in thin-walled glass envelopes, the rate at which the wave attenuates, the behavior of the cylindrical envelope under the influence of the elastic wave, and also an attempt to clarify its role in the process of low-speed detonation of the liquid contained in the envelope. The experimental results presented indicate that propagation of the elastic wave is independent of the course of the low-speed reaction process. This indicates that the question of the stability of the detonation mode must be left open, since the length of

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

UDC:534.222.2

ROZANOV, O. K., DREMIN, A. N., Novosibirsk, Fizika Goreniya i Vzryva, Vol. 6, No. 3, Sep 70, pp. 342-351

the cavitation zone should increase with time, and the nature of the behavior of the cavitation bubbles should change by the moment of arrival of the reaction zone. The authors investigated the propagation of this combustion mode in long glass tubes. The investigation did not reveal the mechanism of formation of cavitation bubbles under the influence of the elastic wave in the envelope.

2/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

UDC: 533.92

USSR

VEKHOV, A. A., NIKOLAYEV, F. A., ROZANOV, V. B., Physics Institute imeni P. N. Lebedev, Academy of Sciences of the USSR

"Investigation of the Space and Time Distribution of the Optical Density of High-Current Discharges of Indium and Lithium"

Moscow, Teplofizika Vysokikh Temperatur, Vol 10, No 4, Jul/Aug 72 pp 728-731

Abstract: The space and time distribution of optical density of a high--current discharge plasma in lithium and indium vapors is studied by the method of absorption of a helium-neon laser beam (6328 Å, 10 mW). The plasma was produced by exploding wires in a vacuum with typical Z-pinch geometry. The wire diameter was 0.1 and 0.17 mm for lithium, and 0.17 mm for indium. A glass discharge chamber was used with an inside diameter of 10 cm. Electrode spacing was 14.5 cm. The current pulse was made up of two half-periods produced by introducing a total energy of 17 kJ into the chamber with 14 kJ of the total falling to the first half-period (70 μs). The optical density κl was determined from the relation

1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

VEKHOV, A. A. et al., Teplofizika Vysokikh Temperatur, Vol 10, No 4, Jul/Aug 72, pp 728-731

$$J = J_0 \exp(-\kappa l)$$

where J_0, J are the fluxes of the quanta incident on the plasma and passing through the plasma respectively, κ is the coefficient of absorption, and l is the thickness of the absorbing layer. It was found that the optical density of a plasma filament is radially nonuniform with a maximum at a certain distance from the discharge axis. A model of discharge development is discussed according to which the plasma has a maximum temperature at the center of the discharge. The authors thank V. G. Bakayev for assisting with the experiment, and G. V. Mikhaylov for constructive criticism.

2/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

1

USSR UDC: 538.4

KLEMENTOV, A. D., MIKHAYLOV, G. V., NIKOLAYEV, F. A., ROZANOV, V. B., SVIRIDENKO, Yu. P.

"High-Current Pulse Discharge in Lithium"

V sb. Vopr. fiz. nizkotemperaturn. plazmy (Problems in the Physics of Low--Temperature Plasma--collection of works), Minsk, "Nauka i tekhn.", 1970, pp 269-275 (from RZh-Mekhanika, No 4, Apr 71, Abstract No 4B52)

Translation: The authors report on a study of a high-power pulse source of light produced by an electric discharge in a lithium plasma as the working medium. A cylindrical chamber with quartz walls was used with an inside diameter of approximately 90 mm, the distance between the steel hemispherical electrodes being 145 mm. The chamber was evacuated to a pressure of 10^{-5} mm Hg. The lithium wire was 0.1 mm in diameter. The discharge developed in lithium vapor formed by an electric explosion. The discharge was fed from two condenser banks -- a main bank and an auxiliary bank with energy capacities of 22 and 4.5 kJ respectively. The pulse from the auxiliary bank was delayed by 25 μs relative to the beginning of

1/3

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

KLEMENTOV, A. D., Vopr. fiz. nizkotemperaturn. plazmy, Minsk, "Nauka i tekhn.", 1970, pp 269-275

the discharge from the main bank. The duration of the first half-cycle of the current discharge from the main bank was 75 μs with a corresponding figure of 15 μs for the auxiliary bank. The current and voltage of the discharge were determined by a Rogowski loop and a voltage divider. The dynamic process of development of the discharge filament was recorded by the SFR instrument operating in the single-frame mode at a rate of 10^6 frames per second. Emission from the central zone of the discharge was registered by a spectrograph with time scanning and in the integrated exposure mode.

It was found that the discharge develops only in the exploding wire vapors. The discharge filament expanded at a nearly constant rate of approximately 1.3 km/s, reaching the walls of the chamber about 50 μs after beginning of the current pulse. Brightness distribution through the discharge filament is nonuniform,, which is due to localized non-uniformities of density and temperature. Discharge emission consists of an intense continuous spectrum which carries the main part of the energy, and superimposed complex line emission, which is analyzed. It is found that maximum brightness temperature in the 250 nm region is 17,000°K. Emission during the second half-cycle of the current is considerably weaker -- the

2/3

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

KLEMENTOV, A. D. et al., Vopr. fiz. nizkotemperaturn. plazmy, Minsk, "Nauka i tekhn.", 1970, pp 269-275

brightness temperature is 12,000°K. The spectral brightness distribution in the maximum current pulse (300 kA) is not described by the curve for black-body radiation of a definite temperature. A comparison of the luminous characteristics of a discharge in lithium and xenon tubes shows that with respect to the overall emission output, the lithium discharge is equivalent to the most powerful pulse tubes, and considerably surpasses these tubes with respect to brightness characteristics in the visible, and especially in the ultraviolet, spectral regions. O. K. Rozanov.

3/3

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

1/2 016 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--RADIO OBSERVATIONS OF SOME DETAILS IN THE H I LOCAL SPIRAL ARM -U-

AUTHOR-(05)-BYSTROVA, N.V., GOSSACHINSKIY, J.V., TGOROVA, T.M., ROZANOV, V.M., RYZHKOV, N.F.

COUNTRY OF INFO--USSR, SWITZERLAND

SOURCE--THE SPIRAL STRUCTURE OF OUR GALAXY; PROCEEDINGS OF THE SYMPOSIUM, UNIVERSITAT BASEL, BASEL, SWITZERLAND, AUGUST 29-SEPTEMBER 4, 1969.

DATE PUBLISHED--------70

SUBJECT AREAS--NAVIGATION, ASTRONOMY, ASTROPHYSICS

TOPIC TAGS--RADIO TELESCOPE, SPIRAL GALAXY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605030/F03 STEP NO--CZ/0000/70/000/038/0169/0172

CIRC ACCESSION NO--AT0141875

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

2/2 016 UNCLASSIFIED

CIRC ACCESSION NO--AT0141875 PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS OF RADIO OBSERVATIONS OF SOME DETAILS IN THE H I LOCAL SPIRAL ARM MADE WITH THE LARGE PULKOVO RADIOTELESCOPE (BEAMWIDTH 7 MIN, BANDWIDTH 20, AND 10KHZ). DRIFT CURVES ACROSS THE CLUSTER NGC 2264 AT DIFFERENT VELOCITIES RELATIVE TO THE LSR ARE PRESENTED, AS WELL AS OBSERVED DRIFT CURVES AT DIFFERENT VELOCITIES ACROSS LAMBDA ORIONIS. FACILITY: GLAVNAIA ASTRONOMICHESKAIA, OBSERVATORIIA, PULKOVO, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

(3)

USSR UDC 681.178.9

KAShchEYeV, A. M., KISELEV, V. M., LETYaGIN, Yu. V., NOVIKOV, V. A., ROZANOV, Ye. V., ROZENKRANTs, Yu -K. V. and ShAPIRO, B. I.

"A Device for Recording Pulse Signals"

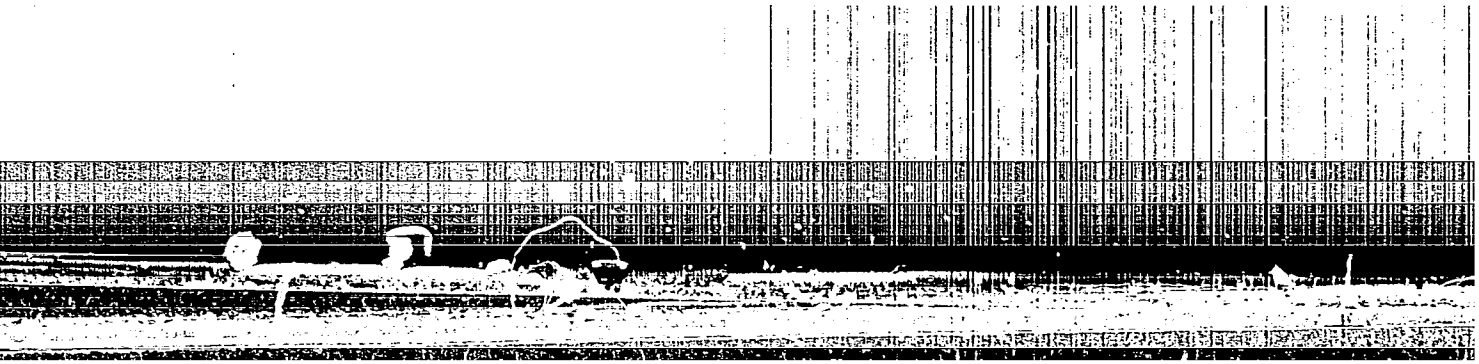
USSR Author's Certificate, Class G 01 d 9/36, G 06 m 3/00, No 334478, filed 25 Dec 70, published 23 May 72 (from RZh-Avtomatika Telemechanika i Vychislitel'naya Tekhnika, No 3, Mar 73, Abstract No 3 A378 P)

Translation: A device is proposed for recording pulse signals, containing "AND" circuits and an "OR" circuit, the latter attached to a decoder connected with electromagnetic recording machines. To ensure a quantitative evaluation of the information recorded over time, a reduction of deviations, and a simplification of service, the device contains a time code shaper connected directly and through the control block to distributors attached to the numeric code sensors, connected in turn to the corresponding AND circuits. The AND circuits are connected to the OR circuit. The outputs of the time code shaper are connected to the electromagnetic recording machines, and electromagnetic relays are connected to a pulse group generator. One illustration.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5



APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

UDC: 533.92

USSR

VEKHOV, A. A., NIKOLAYEV, F. A., ROZANOV, V. B., Physics Institute imeni P. N. Lebedev, Academy of Sciences of the USSR

"Investigation of the Space and Time Distribution of the Optical Density of High-Current Discharges of Indium and Lithium"

Moscow, Teplofizika Vysokikh Temperatur, Vol 10, No 4, Jul/Aug 72 pp 728-731

Abstract: The space and time distribution of optical density of a high-current discharge plasma in lithium and indium vapors is studied by the method of absorption of a helium-neon laser beam (6328 Å, 10 mW). The plasma was produced by exploding wires in a vacuum with typical Z-pinch geometry. The wire diameter was 0.1 and 0.17 mm for lithium, and 0.17 mm for indium. A glass discharge chamber was used with an inside diameter of 10 cm. Electrode spacing was 14.5 cm. The current pulse was made up of two half-periods produced by introducing a total energy of 17 kJ into the chamber with 14 kJ of the total falling to the first half-period (70 μs). The optical density κl was determined from the relation

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

VEKHOV, A. A. et al., Teplofizika Vysokikh Temperatur, Vol 10, No 4, Jul/Aug 72, pp 728-731

$$J = J_0 \exp(-\kappa l)$$

where J_0, J are the fluxes of the quanta incident on the plasma and passing through the plasma respectively, κ is the coefficient of absorption, and l is the thickness of the absorbing layer. It was found that the optical density of a plasma filament is radially nonuniform with a maximum at a certain distance from the discharge axis. A model of discharge development is discussed according to which the plasma has a maximum temperature at the center of the discharge. The authors thank V. G. Bakayev for assisting with the experiment, and G. V. Mikhaylov for constructive criticism.

2/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

1

UDC: 538.4

USSR

KLEMENTOV, A. D., MIKHAYLOV, G. V., NIKOLAYEV, F. A., ROTANOV, V. B., SVIRIDENKO, Yu. P.

"High-Current Pulse Discharge in Lithium"

V sb. Vopr. fiz. nizkotemperaturn. plazmy (Problems in the Physics of Low--Temperature Plasma--collection of works), Minsk, "Nauka i tekhn.", 1970, pp 269-275 (from RZh-Mekhanika, No 4, Apr 71, Abstract No 4B52)

Translation: The authors report on a study of a high-power pulse source of light produced by an electric discharge in a lithium plasma as the working medium. A cylindrical chamber with quartz walls was used with an inside diameter of approximately 90 mm, the distance between the steel hemispherical electrodes being 145 mm. The chamber was evacuated to a pressure of 10^{-5} mm Hg. The lithium wire was 0.1 mm in diameter. The discharge developed in lithium vapor formed by an electric explosion. The discharge was fed from two condenser banks -- a main bank and an auxiliary bank with energy capacities of 22 and 4.5 kJ respectively. The pulse from the auxiliary bank was delayed by 25 μs relative to the beginning of

1/3

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

KLEMENTOV, A. D., Vopr. fiz. nizkotemperaturn. plazmy, Minsk, "Nauka i tekhn.", 1970, pp 269-275

the discharge from the main bank. The duration of the first half-cycle of the current discharge from the main bank was 75 μs with a corresponding figure of 15 μs for the auxiliary bank. The current and voltage of the discharge were determined by a Rogowski loop and a voltage divider. The dynamic process of development of the discharge filament was recorded by the SFR instrument operating in the single-frame mode at a rate of 10^6 frames per second. Emission from the central zone of the discharge was registered by a spectrograph with time scanning and in the integrated exposure mode.

It was found that the discharge develops only in the exploding wire vapors. The discharge filament expanded at a nearly constant rate of approximately 1.3 km/s, reaching the walls of the chamber about 50 μs after beginning of the current pulse. Brightness distribution through the discharge filament is nonuniform,, which is due to localized non-uniformities of density and temperature. Discharge emission consists of an intense continuous spectrum which carries the main part of the energy, and superimposed complex line emission, which is analyzed. It is found that maximum brightness temperature in the 250 nm region is 17,000°K. Emission during the second half-cycle of the current is considerably weaker -- the

2/3

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

KLEMENTOV, A. D. et al., Vopr. fiz. nizkotemperaturn. plazmy, Minsk, "Nauka i tekhn.", 1970, pp 269-275

brightness temperature is 12,000°K. The spectral brightness distribution in the maximum current pulse (300 kA) is not described by the curve for black-body radiation of a definite temperature. A comparison of the luminous characteristics of a discharge in lithium and xenon tubes shows that with respect to the overall emission output, the lithium discharge is equivalent to the most powerful pulse tubes, and considerably surpasses these tubes with respect to brightness characteristics in the visible, and especially in the ultraviolet, spectral regions. O. K. Rozenov.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

KLEMENTOV, A. D. et al., Vopr. fiz. nizkotemperaturn. plazmy, Minsk, "Nauka i tekhn.", 1970, pp 269-275

brightness temperature is 12,000°K. The spectral brightness distribution in the maximum current pulse (300 kA) is not described by the curve for black-body radiation of a definite temperature. A comparison of the luminous characteristics of a discharge in lithium and xenon tubes shows that with respect to the overall emission output, the lithium discharge is equivalent to the most powerful pulse tubes, and considerably surpasses these tubes with respect to brightness characteristics in the visible, and especially in the ultraviolet, spectral regions. O. K. Rozanov.

3/3

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

1/2 016 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--RADIO OBSERVATIONS OF SOME DETAILS IN THE H I LOCAL SPIRAL ARM -U-

AUTHOR-(05)-BYSTROVA, N.V., GOSSACHINSKIY, J.V., TGOROVA, T.M., ROZANOV, V.M., RYZHKOV, N.F.

COUNTRY OF INFO--USSR, SWITZERLAND

SOURCE--THE SPIRAL STRUCTURE OF OUR GALAXY; PROCEEDINGS OF THE SYMPOSIUM, UNIVERSITAT BASEL, BASEL, SWITZERLAND, AUGUST 29-SEPTEMBER 4, 1969.

DATE PUBLISHED--------70

SUBJECT AREAS--NAVIGATION, ASTRONOMY,ASTROPHYSICS

TOPIC TAGS--RADIO TELESCOPE, SPIRAL GALAXY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO-----FD70/605030/F03 STEP NO--CZ/0000/70/000/038/0169/0172

CIRC ACCESSION NO--AT0141875

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

2/2 016 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0141875

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS OF RADIO OBSERVATIONS OF SOME DETAILS IN THE H I LOCAL SPIRAL ARM MADE WITH THE LARGE PULKOVO RADIOTELESCOPE (BEAMWIDTH 7 MIN, BANDWIDTH 20, AND 10KHZ). DRIFT CURVES ACROSS THE CLUSTER NGC 2264 AT DIFFERENT VELOCITIES RELATIVE TO THE LSR ARE PRESENTED, AS WELL AS OBSERVED DRIFT CURVES AT DIFFERENT VELOCITIES ACROSS LAMBDA ORIONIS. FACILITY: GLAVNAIA ASTRONOMICHESKAIA, OBSERVATORIIA, PULKOVO, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

UDC 681.178.9

USSR

KAShchEYeV, A. M., KISELEV, V. M., LETYaGIN, Yu. V., NOVIKOV, V. A., ROZANOV, Ys. V., ROZENKRANTs, Yu -K. V. and ShAPIRO, B. I.

"A Device for Recording Pulse Signals"

USSR Author's Certificate, Class G 01 d 9/36, G 06 m 3/00, No 334478, filed 25 Dec 70, published 23 May 72 (from RZh-Avtomatika Telemechanika i Vychislitel'naya Tekhnika, No 3, Mar 73, Abstract No 3 A378 P)

Translation: A device is proposed for recording pulse signals, containing "AND" circuits and an "OR" circuit, the latter attached to a decoder connected with electromagnetic recording machines. To ensure a quantitative evaluation of the information recorded over time, a reduction of deviations, and a simplification of service, the device contains a time code shaper connected directly and through the control block to distributors attached to the numeric code sensors, connected in turn to the corresponding AND circuits. The AND circuits are connected to the OR circuit. The outputs of the time code shaper are connected to the electromagnetic recording machines, and electromagnetic relays are connected to a pulse group generator. One illustration.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

IBRAGIMOV, I. A., and ROZANOV, Yu. A.

"On the Relationship Between Two Characteristics of the Dependence of Gaussian Random Vectors"

Moscow, Teoriya Veroyatnostey i Yeye Primeneniya, Vol 15, No 2, 1970, pp 304-309

Abstract: The following theorem is proved: let $\xi = (\xi_1, \ldots, \xi_n)$ and $\eta = (\eta_1, \ldots, \eta_m)$ be Gaussian random vectors with distributions $P_1(dx)$ and $P_2(dy)$ and the joint distribution $P_{12}(dxdy)$. $I_{\xi n} = I$ denotes the amount of information contained in the random vector ξ relative to η. It is also assumed that

$$V_{\xi n} = V = \mathrm{Var}[P_{12} - P_1 \times P_2].$$

The quantities I and V are non-negative ($0 \leq I \leq \beta$, $0 \leq V \leq 1$, so that both quantities I and V reduce to zero if and only if the vectors ξ and η are independent; consequently, the quantities I, V may be considered as quantitative characteristics of the dependence of the vectors ξ and η. Theorem: For Gaussian random vectors, with $V \to 0$,

$$8/\pi^2 = \underline{\lim}\, V^2/I < \overline{\lim}\, V^2/I = 4/\pi.$$

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

ROZANOV, Yu. A. UDC: 519.2

"Random Processes. A Short Course. Textbook for Students in Special Institutions of Higher Education Specializing in Mathematical Physics and Physical Engineering"

Sluchaynyye protsessy. Kratkiy kurs. Uchebn. posobiye dlya stud. fiz.-mat. i fiz.-tekhn. sptes. vuzov (cf. English above), Moscow, "Nauka", 1971, 286 pp, ill. 69 k. (from RZh-Kibernetika, No 5, May 72, Abstract No 5V26 K)

Translation: The book is written for beginning study of the theory of probabilities and random processes. The principal concepts and methods of modern probability theory are outlined. The most interesting properties of various types of random processes are studied on the basis of simple models. Problems of probability theory which are of interest for application are considered. In presenting the material, "direct probabilistic methods" are chiefly utilized, promoting the development of probabilistic intuition, which plays an important part in the solution of problems in probability theory. Annotation.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR UDC 621.314.57(088.8)

GUBANOV, V.V., LEDIN, A.A., PROKHOROV, V.V., ROZANOV, YU.M., RYABOV, S.P.

"Converter of D-C Voltage Into Stabilized A-C"

USSR Author's Certificate No 248789, Filed 27 May 68, Published 26 Jan 70 (from RZh--Elektronika i yeye primeneniye, No 10, October 1970, Abstract No 10B40P)

Translation: The invention pertains to a converter of d-c voltage into stabilized a-c, which contains a parallel thyristor inverter, a block for preliminary magnetization, and a ferroresonance transformer--regulator, the magnetic circuit of which has a nonlinear section. The secondary winding is placed on this section, and connected in series with the choke of a higher harmonic filter and with the linear part. The primary and compensation windings simultaneously include the linear and nonlinear sections of the magnetic circuit. With the object of reducing the weight of the converter, it is proposed to make the linear section of the magnetic circuit in the form of two identical cores with a gap, the over-all cross section of which is equal to the designed cross section of the linear part, and the choke of a filter with two identical windings is connected in counter series. Each of the windings is placed at one of the cores of the linear section of the magnetic circuit. With the object of increasing the reliability of operation and reducing the transition time, it is proposed to place on the nonlinear section a winding of the magnetic bias of the block for preliminary magnetization. 2 ill. I.R.
1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

1/2 010 UNCLASSIFIED PROCESSING DATE--02DEC70

TITLE--CATALYTIC PROPERTIES OF YTTRIUM DECATIONIZED ZEOLITES -U-

AUTHOR-(04)-ROSOLOVSKAYA, YE.N., TOPCHIYEVA, K.V., ZHAVORONKOV, M.N., ROZANOVA, O.N.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(3), 610-12

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CATALYST ACTIVITY, YTTRIUM, ZEOLITE, ISOPROPYL BENZENE, CATALYTIC CRACKING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1906 STEP NO--UR/0020/70/190/003/0610/0612

CIRC ACCESSION NO--AT0112883

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

UNCLASSIFIED PROCESSING DATE--02OCT70

2/2 010

CIRC ACCESSION NO--AT0112883

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CATALYTIC PROPERTIES OF TYPE Y, Y DECATIONIZED ZEOLITES, USED IN ISOPROPYLBENZENE CRACKING AT 280-450DEGREES WERE INVESTIGATED BY USING THE IMPULSE METHOD. CATION DECATIONIZED SAMPLES, CONTAINING VARIOUS PROPORTIONS OF Y, NA, AND DECATIONIZED RESIDUES, WERE OBTAINED IN 2 WAYS: (1) THE NA-NH SUB4 FORM OF THE ZEOLITE WAS TAKEN AND THEN Y WAS INTRODUCED BY ION EXCHANGE, (2) THE INITIAL FORM WAS NA-Y ZEOLITE, INTO WHICH NH SUB4 IONS WERE INTRODUCED. AN AMORPHOUS HOUDRY ALUMINOSILICATE WAS ALSO EXAMD. FOR COMPARISON. CELL PARAMETERS OF CRYST. SAMPLES WERE DETD. BY USING X RAY METHODS. CELL PARAMETERS, REACTION RATE CONSTS. AT 400DEGREES, AND ACTIVATION ENERGIES FOR 8 CATALYSTS ARE TABULATED. THE RATES DIFFER CONSIDERABLY (BY A FACTOR OF 20), BUT ACTIVATION ENERGIES ARE SIMILAR, SIMILAR TO 17 KCAL-MOLE. FOR A HIGH CATALYTIC ACTIVITY, THE RATIO OF ALL 3 COMPONENTS, DECATIONIZED RESIDUES, INTRODUCED CATION, AND REMAINING NA, IS IMPORTANT. FOR INCREASED ACTIVITY, THE LOWERING OF THE NA CONTENT BECAUSE OF AN INCREASE OF DECATIONIZED PARTS IS MORE EFFECTIVE THAN THAT BECAUSE OF AN INCREASE OF TRIVALENT CATION. THE MOST CATALYTICALLY ACTIVE SAMPLE CONTAINED THE SMALLEST AMT. OF NA. THE ORDER OF INTRODUCTION OF CATIONS WAS OF GREAT IMPORTANCE FOR STABILIZATION OF THE ACTIVE STRUCTURE OF THE CATALYST: BETTER CATALYSTS WERE OBTAINED BY 1ST TAKING NA ZEOLITE, INTRODUCING THE TRIVALENT CATION, AND THEN REPLACING NA BY NH SUB4. Y DECATIONIZED ZEOLITES ARE HIGHLY EFFECTIVE CATALYSTS FOR THE CRACKING REACTION. A COMPLEX INTERACTION OF COMPONENTS WITH THE ZEOLITE LATTICE ACCOUNTS FOR THIS HIGH AND STABLE CATALYTIC ACTIVITY.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR UDC 669.187.2.003

GOTIN, V. N., ZAYTSEV, B. YE., SHCHERBAKOV, A. I., ZHITKOV, N. K., OKONOKOV, G. N., BOYARASHINOV, V. A., VOYNOVSKIY, YE. B., TOPILIN, V. V., SHALINOV, AL. G., OSIPOVA, L. M., CHERNOV, YU. V., ROZANOVA, T. S., and LAKTIONOV, V. S.

"Influence of Wall Thickness of Crystallizer and Consumption of Cooling Water on Conditions of Formation of Ingot During Vacuum Arc Remelting"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 178-180

Translation: In a vacuum arc furnace in a crystallizer (C) 160 mm in diameter with a current of 2.0-3.7 ka, the influence of wall thickness of C and temperature of cooling water on conditions of formation of ingot of complexly alloyed nickel-based alloys is studied. C with wall thicknesses of 30 and 18 mm were studied, the temperature on the outer surface of the C reaching 75°C in the first case, 105°C in the second. The temperature of the internal surface of the C was identical, 140-150°C. Neither a change in C thickness nor a change in water consumption from 11 to 22 m^3/hr influenced the depth of the liquid metal bath, i.e., both repeated rolling of the C and reduced water consumption were permissible. 2 figures.

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

UDC 612.273+612.6

ROZANOVA, V. D. and UGOLBAYEVA, I. S., Laboratory of Age Physiology and Pathology, Institute of Normal and Pathological Physiology, Academy of Medical Sciences USSR

"Physiological Substantiation of Criteria of Resistance to and Tolerance for Hypoxia at Different Ages"

Leningrad, Fiziologicheskiy Zhurnal SSSR, No 10, 1971, pp 1,531-1,539

Abstract: The response of dogs of four different age groups (1 to 15 days, 18 to 60 days, 2-1/2 to 3 months, adults) to hypoxia was studied in pressure chamber experiments involving elevating the animals gradually or rapidly to simulated altitudes of 1 to 13 km. Resistance, as measured by the duration of maintenance of homeostasis, was found to be higher in the two oldest age groups, especially when hypoxia was created gradually. However, the "altitude ceiling" and survival time there (tolerance criteria) were lower in the older dogs than in the 1- to 15-day-old puppies. The authors suggest that a distinction be made between resistance (duration of maintenance of homeostasis) and tolerance (difference in "altitude ceiling" and survival time in a state of collapse).

1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

UDC 669.715:621.746.06

MIKHAYLOV, L. M., and ROZANOVA, V. S.

"Use of Asbestos Silicate as a Thermal Insulation Material in Equipment for Filling and Metering Aluminum and Its Alloys"

Moscow, Tsvetnyye Metally, No 12, Dec 70, pp 49-52

Abstract: The economic effectiveness and service qualities of equipment for measuring the pouring of aluminum alloys, specifically under pressure, are markedly affected by the design of the equipment, the metal chute, the thermal insulation, and the technological temperature of the melt during pouring. It is believed that the use of new insulation materials not wetted by aluminum and its alloys and other steps designed to inhibit the dissipation of heat will facilitate new equipment of smaller dimensions, longer life, and more reliable service. To investigate the potential replacement of the metal components and eliminate various shortcomings in the joints of the metal proportioning device contacting the liquid metal, use was made of a new thermal insulation material -- asbestos silicate (asbothermosilicate). The material features the following properties: heat conductivity, 0.08 to 0.18 kcal/m hr °C;

1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

USSR

MIKHAYLOV, L. M., and TOSANOVA, V. S., Tsvetnyye Metally, No 12, Dec 70, pp 49-52

volumetric weight, 0.5-0.8 g/cm^3; strength, about 100 kg/cm^2. The material will maintain these properties for two months at 700-500°C, will not interact with aluminum and its alloys, and is readily machinable. The components are, asbestos, lime, silica, and water. It may be used for lining transporting, distributing, and receiving devices for metal in pouring and is known to have good thermal insulation properties which makes possible delivery of material over greater distances without special heating of transporting equipment. A new design of a metal duct in the DU-68 pouring and measuring system using the new thermal insulation material is described. Both the efficiency and reliability of the equipment were tested and showed positive results.

2/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

Acc. Nr: AP0055147 Ref. Code: 21R0220

PRIMARY SOURCE: Mikrobiologiya, 1970, Vol 39, Nr 2, pp 372-378

PURPLE BACTERIA IN OIL STRATA OF THE APSHERON PENINSULA

Ye. P. Rozanova and A. I. Khudyakova

Purple bacteria are distributed in waters of the stratum of Balakhano-Sabunchino-Ramanino flexure of the Apsheron peninsula, watered by mixtures of stratum and sea water, exploited by compressor bore holes, into which air is pumped. These bacteria are found rather rarely in water samples from nonwatered strata of Surakhan flexure and were registered only in the water sample of one compressor bore-hole among 15 studied.

Ecological conditions of the habitat of purple bacteria were similar. Water samples, containing the bacteria, were of sodium hydrocarbonate type with a salinity of 15—39 g/l salts, contained sulphates, had weak alkaline reaction and rather high redox potential.

The cultures of purple bacteria, isolated from the oil stratum of Balakhano-Sabunchino-Ramanino flexure, watered by sea water, differed by their morphological proper-

REEL/FRAME
19840356

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5

AP0055147

ties from the cultures isolated from the stratum of Surakhan flexure. Their physiological properties were similar. The bacteria belonged to genera of the families Athiorhodaceae Rhodospirillum and Rhodopseudomonas. The organisms were capable to grow in dark in the presence of air on media with organic acids as well as in biocenosis in the presence of oil.

Biocenosis with purple bacteria in the zones of strata with compressor bore-holes contained also sulphate-reducing, hydrocarbon oxidizing and thionic bacteria, heterotrophs, growing on MPA, and oligocarbophils.

The sheme is suggested explaining penetration and distribution of purple bacteria in oil strata in dark in the presence of oxygen.

MK

2/2

19840357

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710011-5"