M. YABLONSKIY

POLAND/Cultivated Plants. Commercial. Oil-Bearing. Sugars. M

Abs Jour: Ref Zhur-Biol., No 5, 1958, 20414.

Author : F. Dembinskiy, M. Yablonskiy, A. Gofmanova, B. Kelchevskiy
Inst : Not given.
Title : The Effect of Sowing Times and Spacing Between Plants on the Castor Oil Seed and Oil Harvest. (Vliyaniye srokov poseva i rasstoyaniya mezhdu rasteniyami na urozhay semyan kleshcheviny i sbor masla).

Orig Pub: Roczn. nauk. rolniczych, 1956, A72, No 3, 465-501.

Abstract: The tests were made with the Pulavskaya variety which belongs to the stock of Ricinus chinensis. The highest yield was obtained with spacing the plants at 40 X 40 cm and with the planting times between the 5th and 30th April. Dense spacing of the plants reduced the damage

Card : 1/2

POLAND/Cultivated Plants. Commercial. Oil-Bearing. Sugars. M

Abs Jour: Ref Zhur-Biol., No 5, 1958, 20414.

caused by late frosts, did not lower the average weight of 1,000 seeds, did not lessen the oil output and had no effect on the quality of the oil.

Card : 2/2

YABLONSKIY, M.F.

Medicolegal qualification of hip and shin fractures. Sud. med. ekspert. 7 no.4:18-21 O-D '64 (MIRA 18:1)

1. Kafedry sudebnoy meditsiny (zav. - dotsent M.A. Vasil'yew) Vitebskogo meditsinskogo instituta.

YABLONSKIY, Mikhail Pavlovich; POROSYAGNIKOV, A.V., nauchn. red.;

[Manual on the operation of RVZ-6 streetcars] Pamiatka po ekspluatatsii tramvainogo vagona RVZ-6. Moskva, Stroiizdat, 1965. 86 p. (MIRA 18:9)

YABLONSKIY, N.

Employ every means for uncovering potentials. Den. i kred. 21 no.7:36-39 Jl '63. (MIRA 16:8)

1. Upravlyayushchiy Rostovskoy oblastnoy kontoroy Gosbanka.
(Rostov Province--Banks and banking)
(Rostov Province--Industrial management)

YABLONSKIY, N. S. Cand Tech Sci -- (~~dissn~~ diss) "Problems of the designing manufacture and ~~production~~ of noncircular gear wheels." Len, 1957. 11 pp (Min of Higher Education USSR. Len Polytechnic Inst im M. I. Kalinin), 100 copies.

(KL, 6-58, 101)

YABLONSKIY, N.S.

LITVIN, F.L.; YABLONSKIY, N.S.

Designing and cutting teeth of multiturn noncircular gearwheels. Priborostroenie no.6:22-24 Je '57. (MIRA 10:7)
(Gearing)

YABLONSKIY, N.S.

Designing simple four-link mechanisms equipped with noncircular wheels. Trudy LPI no.191:21-43 '57. (MIRA 11:9)
(Mechanical movements) (Mechanical engineering)

YABLONSKIY, N.S.

Relationship between the strength calculation and the determination of losses caused by friction in a mechanism combining a differential with noncircular wheels. Trudy LPI no.219:20-27 '62. (MIRA 15:12)

(Mechanical movements)

YABLONSKIY, N.S., kand. tekhn. nauk

Differential mechanism combined with two pairs of noncircular wheels. Izv. vys. ucheb. zav.; mashinostr. no.11:11-16 '63. (MIRA 17:10)

1. Leningradskiy politekhnicheskiy institut.

LITVIN, F.L., doktor tekhn.nauk, prof.; YABLONSKIY, N.S., kand.tekhn. nauk, dotsent

Reversing symmetric mechanism with noncircular wheels. Izv.vys. ucheb. zav.; mashinostr. no. 12:23-29 '63. (MIRA 17:9)

1. Leningradskiy politekhnicheskiy institut.

YABLONSKIY, N.S., kand. tekhn. nauk, dotsent

Simple and planetary train of noncircular gear wheels. Izv. vys. ucheb. zav.; mashinostr. no.2:12-20 '64. (MIRA 17:5)

1. Leningradskiy politekhnicheskiy institut.

3(7) SOV/10-59-3-18/32

AUTHOR: Yablonskiy, O.A. [Deceased]

TITLE: About Anti-Avalanche Research Methods

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geograficheskaya, 1959, Nr 3, pp 116-118 (USSR)

ABSTRACT: This is a new typology and classification of avalanches. The author studied those problems in the middle strip of the Dzhungarskiy Alatau in Tyan-Shan in 1955/56. That area has been evaluated as industrially important in the future. The new classification covers 9 types of avalanches. The avalanche station "Yukspor" is mentioned by name. The author died on 16 July 1958 during snow research on Novaya Zemlya. The author mentions the names of the following scientists: G.K. Tushinskiy, A. Allix and P.N. Chirvinskiy. There is 1 diagram and 3 references, 2 of which are Soviet and 1 English.

Card 1/1

for release

ZINGER, Ye.M.; ENGEL'GARDT, V.V.; YABLONSKIY, O.A.[deceased]; AVSYUK, G.A., otv. red.; OGANOVSKIY, P.N., red.

[Novaya Zemlya: Snow cover]Novaia Zemlia: Snezhnyi pokrov. Moskva, (Its Materialy gliatsiologicheskikh issledovanii) No.1.[Stationary observations at the Ledorazdel'naya and Bar'er Somneniy Stations]Statsionarnye nabliudeniia na stantsiiakh Ledorazdel'naia i Bar'er Somnenii. 1962. 131 p. No.2.[Field observations]Marshrutnye nabliudeniia. 1962. 103 p. (MIRA 16:3)

1. Akademiya nauk SSSR. Institut geografii.
(Novaya Zemlya--Snow)

YABLONSKIY, O.V., inzh.

Studying the energetics of the DT-75 tractor in plowing. Trakt. i sel'khozmash. no.12:11-12 D '64 (MIRA 18:2)

1. Volgogradskiy sel'skokhozyaystvennyy institut.

Posobiye dlya samostoyatel'nogo izucheniya kursa raschet i konstruirovaniye khimicheskoy apparatury (Manual For An Independent Study Course. Computation And Designing Of Chemical Apparatus) Leningrad, Lengorispolkoma, 1948-

V. diagrs.

At head of title: Russia. Ministerstvo Vysshego Obrazovaniya.

Library has: V. 1

YABLONSKIY, P.A.

The laws of air classification of solids in straight-through separator [illegible] and P. A. Yablonskiy

[illegible] criterion depends on the properties of the sepd. material. The theoretical results were tested on an exptl. app. which included a straight-through separator with 2 rows of rotating impact blades (21 blades, 8.5 mm high) in a row. The [illegible] of the coarse and fine fractions of the material.

W. M. Sternberg

SOV/64-59-1-15/24

25(2)
AUTHORS: Romankov, P. G., Doctor of Technical Sciences, Yablonskiy, P.A., Candidate of Technical Sciences

TITLE: The Influence of Various Internal Devices in the Separator With Revolving Breaking Blades Upon the Efficiency of Classification (O vliyanii razlichnykh vnutrennikh ustroystv v separatore s vrashchayushchimisya otboynymi lopatkami na effektivnost' klassifikatsii)

PERIODICAL: Khimicheskaya promyshlennost', 1959, Nr 1, pp 68-70 (USSR)

ABSTRACT: In a former paper (Ref 1) equations (1) and (2) on the extraction of the fine fraction and for the Galilean criterion for experimental separators without internal devices (Fig 1) were derived. In the present case experimental results are given for the following types of classifcator: figure 1 without internal device, figure 2 with two deflectors, figure 3 with one deflector, figure 4 with a derivation of the products from the mixing zone of the blades for repeated classifcation. A barite was classified, the value Re was constantly 5450, and the residue was determined on a control screen with 63 μ. Graphic representations (Figs 1-5) of the experimental results show that the work with the classificator (Fig 4) does not

Card 1/2

The Influence of Various Internal Devices in the Separator With Revolving Breaking Blades Upon the Efficiency of Classification

offer advantages but disadvantages, that the efficiency of the types mentioned in figures 1 and 2 is about the same, but that with reference to the residue on the control screen the construction scheme of figure 1 is most adequate. A table of the individual data of the 4 types of classification is given. There are 5 figures, 1 table and 1 Soviet referemce.

Card 2/2

85289

S/153/60/003/005/014/016
B013/B058

11.9000

AUTHORS: Yablonskiy, P. A., Romankov, P. G.

TITLE: Physical Significance of Some Similitude Criteria, and Their Influence on the Heat Transfer Coefficient of Liquids

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1960, Vol. 3, No. 5, pp. 928-932

TEXT: The applicability of equations based on the theory of similitude for the practical calculation of the influence of physical properties of liquids on the heat-transfer intensity, as well as for thermodynamic calculations of chemical apparatus, is analyzed in this paper. The following conclusions were drawn from this analysis: 1) The calculation of the influence of physical properties of liquids on the heat-transfer intensity, customary in publications, which starts from the functional dependence of the Nusselt, Reynolds, Prandtl and Grashof criteria, shows that the Nusselt index increases with an increase of the Prandtl number (Pr) and constant Reynolds number (Re). The increase of the Pr number is, however, correlated with an increase of the kinematic viscosity ν. This

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Physical Significance of Some Similitude Criteria, and Their Influence on the Heat Transfer Coefficient of Liquids

S/153/60/003/005/014/016
B013/B058

leads simultaneously to a decrease of the Re number. The actual consumption of liquid must, therefore, be increased to warrant Re = const. A calculation made in this way of the influence of physical parameters on the heat-transfer coefficient is not justified in practical calculations.
2) Thermodynamic calculations of chemical apparatus: a) At a given size of the apparatus, the liquid consumption can directly be calculated from the equations for turbulent and laminar flow at Pr = const., since the flow velocity is only contained in the Reynolds number. b) For the calculation of the influence of physical properties on the heat-transfer coefficient, the index equations for turbulent, laminar, and free flows are to be brought into the form $\alpha = f(Pr^{-n})$ or $\alpha = f_1(Pr^{-m})$, at a constant consumption of liquid and equal d. From equations solved according to the heat-transfer coefficient α, it follows that an increase of the Prandtl number reduces the intensity of heat transfer at the same flow velocity w. S. S. Kutateladze is mentioned. There are 2 Soviet references.

Card 2/3

86389

Physical Significance of Some Similitude Criteria, and Their Influence on the Heat Transfer Coefficient of Liquids

S/153/60/003/005/014/016
B013/B058

ASSOCIATION: Leningradskiy tekhnologicheskiy institut im. Lensoveta, Kafedra protsessov i apparatov (Leningrad Technological Institute imeni Lensovet, Department of Processes and Apparatus)

SUBMITTED: March 23, 1959

Card 3/3

ROMANKOV, P.G.; RASHKOVSKAYA, N.B.; BEREZOVSKAYA, Z.A.; YABLONSKIY, P.A.

Drying some pastelike pigments in a fluidized bed. Lakokras. mat. i ikh prim. no.6:61-64 '61. (MIRA 15:3)

1. Leningradskiy tekhnologicheskiy institut imeni Leningradskogo Soveta.
(Pigments) (Drying apparatus)

ROMANKOV, P.G., doktor tekhn.nauk; RASHKOVSKAYA, N.B., kand.tekhn.nauk; YABLONSKIY, P.A., kand.tekhn.nauk; BEREZOVSKAYA, Z.A., kand. tekhn.nauk

Drying of a pastelike copper-nickel catalyst in a fluidized bed. Masl.-zhir.prom. 28 no.7:10-13 Jl '62. (MIRA 15:11)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.

(Nickel catalysts--Drying)
(Fluidization)

KOZLOV, T.I., prepod.; KULINENKOVA, Ye.Ya., prepod.; KUROCHKINA. M.I., prepod.; LEPILIN, V.N.; MEDVEDEV, A.A.; NOSKOV, A.A. OVECHKIN, I.Ye.; PAVLUSHENKO, I.S.; PLYUSHKIN, S.A.; RASHKOVSKAYA, N.B.; ROMANKOV, P.G.; FROLOV, V.F.; YABLONSKIY, P.A.;

[Manual on practical work in the laboratory on the processes and apparatus of chemical technology] Rukovodstvo k prakticheskim zaniatiiam v laboratorii po protsessam i apparatam khimicheskoi tekhnologii. Izd.2., ispr. i dop. Moskva, Khimiia, 1964. 243 p. (MIRA 18:2)

YABLONSKIY, S. V.

Functions

Convergent series of continuous functions. Vest. Mosk. un., 5, No. 9, 1950.

Monthly List of Russian Accessions, Library of Congress, October 1952. UNCLASSIFIED.

YABLONSKIY, S.V.

Mathematical Reviews
Vol. 14 No. 10
November 1953
Foundations

6-23-54
LL

Yablonskiĭ, S. V. On superpositions of functions of the algebra of logic. Mat. Sbornik N.S. 30(72), 329–348 (1952). (Russian)

The problem is to find necessary and sufficient conditions that a given finite set of expressions of the classical 2-valued propositional calculus form a basis for all truth-functions; more precisely, conditions that from m expressions $\Phi_r(A_1, A_2, \cdots, A_n)$, each in n variables, all truth-functions are obtainable by combinations of the operations (1) "superposition", i.e., replacement of any occurrence of a variable by an expression already obtained, and (2) replacement of $A_1, A_2, \cdots, A_n$ by any other set of variables $B_1, B_2, \cdots, B_n$, not necessarily all distinct. Call an expression, Φ, "of type α" if $\Phi(A_1, A_2, \cdots, A_n) \not\equiv \neg\Phi(\neg A_1, \neg A_2, \cdots, \neg A_n)$ (the inequality meaning that they have not the same truth-table); of type β if it is not expressible (in the same sense) with the help of $\equiv$ alone; of type γ if $\Phi(T, T, \cdots, T) = F$; of type δ if $\Phi(F, F, \cdots, F) = T$; of type ϵ if it is not expressible by means of & and $\vee$ alone. The main theorem states that the expressions $\Phi_1, \Phi_2, \cdots, \Phi_m$ form a basis if and only if they include at least one of each of the types $\alpha, \beta, \gamma, \delta, \epsilon$; and if the base is minimal, $m \leqq 4$. The proof is long and complicated, and cannot be summarised here.

M. H. A. Newman (Manchester).

1
3000

YABLONSKIY, S.V.

Yablonskiĭ, S. V. Realization of a linear function in a class of Π-schemes. Doklady Akad. Nauk SSSR (N.S.) 94, 805–806 (1954). (Russian)

A bound due to J. Riordan [See C. E. Shannon, Bell System Tech. J. 28, 59–98 (1949); these Rev. 10, 671] for the number of contacts required for the series-parallel realization of the linear Boolean functions $c_0+c_1x_1+\cdots+c_nx_n$ (mod 2) is established. *C. Saltzer* (Cleveland, Ohio).

Math Inst. im. Steklov, AS USSR

USSR/Math YABLONSKIY, S. V.

Card 1/1

Author : Yablonskiy, S. V.

Title : About a functional completeness in a triple system of calculations.

Periodical : Dokl AN SSSR 95, 6, 1153 - 1155, 21 Apr 1954

Abstract : Some results of an analysis of the functional completeness in a K - value iterated system of calculations are given. For example, the functional completeness has been proved in the article for a system of calculation where K = 3.

Institution : V. A. Steklov, Math. Inst. of the Acad. of Scs. of the USSR

Submitted : 29 Jan 1954

YABLONSKIY, S. V., POLETAYEV, I. A., KITOV, A. I. and LYAPUNOV, A. A.

"On Cybernetics," Trudy tret'yego Vsesoyuznogo matematicheskogo s"yezda /Proceedings of the Third All-Union Mathematics Congress/, Vol. II. Brief outline of survey and sectional papers, Publishing House of the Academy of Sciences USSR, Moscow, 1956, Pages 76 - 77.

YABLONSKIY, S. V., Cand. in Phys. Math. Sci.

"Multiple Valued Logic and Theory of Electric Circuits" a paper presented at the Conference on Methods of Development of Soviet Mathematical Machine-Building and Instrument-Building, 12-17 March 1956.

Translation No. 596, 8 Oct 56

Yablonskiy, S. V.

AUTHOR: YABLONSKIY, S.V. 42-6-14/17

TITLE: On Function Classes of Symbolic Logic Admitting a Simple Realization by Schemes (O klassakh funktsiy algebry logiki, dopuskayushchikh prostuyu skhemnuyu realizatsiyu)

PERIODICAL: Uspekhi Matematicheskikh Nauk, 1957, Vol.12, Nr.6, pp.189-196 (USSR)

ABSTRACT: This is a representation of the author's delivery on the Third Mathematical Union Congress. It is already published in "Trudy tret'yego matematicheskogo s"yezda" 2, 1956.
Five Soviet and 4 foreign references are quoted.

SUBMITTED: November 2, 1956
AVAILABLE: Library of Congress

Card 1/1

YABLONSKIY, S.V.

LYAPUNOV, A.A.; YABLONSKIY, S.V.

An outstanding contribution to mathematics. Priroda 46 no.8:54-56 Ag '57. (MLRA 10:9)

1. Matematicheskiy institut im. V.A. Steklova Akademii nauk SSSR, Moskva.

(Groups, Theory of)

YABLONSKIY, S.V.

16(1) PHASE I BOOK EXPLOITATION SOV/1708

Akademiya nauk SSSR. Matematicheskiy institut

Sbornik statey po matematicheskoy logike i yeye prilozheniyam k nekotorym voprosam kibernetiki (Collection of Articles on Mathematical Logic and Its Applications to Certain Problems of Cybernetics) Moscow, Izd-vo AN SSSR, 1958. 362 p. (Series: Its: Trudy, t. 51) 3,500 copies printed.

Resp. Ed.: S.V. Yablonskiy, Candidate of Physical and Mathematical Sciences; Ed. of Publishing House: A.Z. Ryvkin and L.K. Nikolayeva; Tech. Ed.: T.P. Polenova.

see also card 2, 6

PURPOSE: This collection of articles contains original contributions of Soviet mathematicians in mathematical logic and is intended for mathematicians working in this field.

COVERAGE: The articles deal with studies of problems connected with mathematical logic and their applications to certain problems of cybernetics. Primarily, Switching circuits are studied, but many

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of the results obtained are of a more general character. The content of the collection of articles is closely connected with many branches of cybernetics which study the methods of describing the processing of discrete information, problems of the analysis and synthesis of control systems, and methods of controlling the performance of control systems. The characteristic feature of these articles is their connection with various fields of mathematics such as mathematical logic, combination analysis, set theory, algebra, topology and theory of numbers. All articles were written in the years 1954-1955, and the concepts presented are arranged in the book in a systematic order. The first articles concern problems of mathematical logic, then problems of the theory of the synthesis of circuits are examined, and finally problems of the theory of controlling the performance of circuits are considered. The editor thanks Professor A.A. Lyapunov, Professor S.A. Yanovskiy, B.Yu. Pil'chak, A.P. Yershov, V.A. Uspenskiy, and Yu.I. Yanov for their remarks in connection with the final editing of the collection.

TABLE OF CONTENTS:

of the results obtained are of a more general character. The content of the collection of articles is closely connected with many branches of cybernetics which study the methods of describing the processing of discrete information, problems of the analysis and synthesis of control systems, and methods of controlling the performance of control systems. The characteristic feature of these articles is their connection with various fields of mathematics such as mathematical logic, combination analysis, set theory, algebra, topology and theory of numbers. All articles were written in the years 1954-1955, and the concepts presented are arranged in the book in a systematic order. The first articles concern problems of mathematical logic, then problems of the theory of the synthesis of circuits are examined, and finally problems of the theory of controlling the performance of circuits are considered. The editor thanks Professor A.A. Lyapunov, Professor S.A. Yanovskiy, B.Yu. Pil'chak, A.P. Yershov, V.A. Uspenskiy, and Yu.I. Yanov for their remarks in connection with the final editing of the collection.

TABLE OF CONTENTS:

Collection of Articles on Mathematical Logic (Cont.) SOV/1708

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AVAILABLE: Library of Congress
Card 7/7

LK/ad
6-16-59

YABLONSKIY, S. V.

"The Application of the Existing Theory for New Elements with Relay Effect."

report presented at All-Union Conference on Problems in the Theory of Relay Devices, Inst. for Automation and Remote Control AN USSR. 3-9 Oct 1957.
Vestnik AN SSSR, 1958, No. 1, v. 28, pp. 131-132. (author Ostianu, V. M.)

YABLONSKIY, S.V.

"Review of Works on the Algebra of Logic and Its Application" (5 April 1957)

paper presented at the Seminars on Cybernetics at Moscow University during the 1956-57 school year.

Problemy Kibernetiki, No. 1, 1958

YABLONSKIY, S. V.

"Review of Culbertson's article 'Certain Uneconomical Works'" (in collection Avtomaty (Automata)) (30 November 1956).

Paper presented at the Seminars on Cybernetics at Moscow University during the 1956-57 school year.

Problemy Kibernetiki, No. 1, 1958

YABLONSKIY, S.V.

"Application of Multivalued Logic to the Synthesis of Electronic Circuits" (17 May 1957).

paper presented at the Seminars on Cybernetics at Moscow University during the 1956-57 school year.

Problemy Kibernetiki, No. 1, 1958

LYAPUNOV, Aleksey Andreyevich; LUPANOV, O.B., red.; PIL'CHAK, B.Yu., red.; O.S. KULAGINA, red.; YABLONSKIY, S.V., red.; SHOLYANSKIY, M.L., red.; KOLESNIKOVA, A.P., tekhn.red.

[Problems in cybernetics] Problemy kibernetiki. Moskva, Gos. izd-vo fiziko-matem. lit-ry. No.1. 1958. 268 p. (MIRA 12:1)

1. Matematicheskiy institut AN SSSR (for Lyapunov, Kulagina)
(Cybernetics)

YABLONSKIY S.V.

24-2-28/28

AUTHOR: None Given.

TITLE: All-Union Conference on the Theory of Relay Systems. (Vsesoyuznoye soveshchaniye po teorii ustroystv releynogo deystviya).

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, No.2, pp. 167-168 (USSR).

ABSTRACT: The Institute of Automation and Telemechanics of the Ac. Sc. USSR (Institut Avtomatiki i Telemekhaniki Akademii Nauk SSSR) convened in October, 1957 an All Union Conference on the theory of relay systems. The aim of the conference was to evaluate the present state of the problem of the theory of relay operation, particularly evaluation of the problems of synthesis, analysis and transformation of the structure of relay equipment, optimum construction and assembly of such structures, automation of the processes of synthesis and analysis of such structures. Over 330 representatives of research establishments, works' laboratories and project organisations from numerous centres of the USSR as well as scientists from Roumania, Hungary and Czechoslovakia participated in the conference.

In his opening address M. A. Gavrilov reported on the

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All-Union Conference on the Theory of Relay Systems. 24-2-28/28

present state and the main trends of development of the theory of relay circuits.
Thirty papers were read including "On the Development of Mathematical Logic and its Engineering Applications" by S. A. Yanovska, "Algebraic Theory of the Operation of Relay-Contact Circuits" by Gr. K. Moisil (Bucharest), "On the Inversion Complexity of a System of Functions" by A. A. Markov, "Minimum Disjunctive Shape of "Bull" Functions" by K. Popovich (Bucharest), "On Certain Mathematical Problems of the Theory of Relay Circuits" by S. V. Yablonskiy.
The technique of operation in this field was dealt with in the following papers: "Technique of Determining the Minimum Number of Relays Necessary for the Construction of a Relay Circuit with Given Conditions of Operation" by V. G. Lazarev; "Matrix Method and Method of Characteristic Functions in the Theory of Contact Circuits" by A.G.Luntz; "On the Theory of Synthesis of Contact Circuits" by F. Svobodin (Prague); "Construction of Relay Circuits with Bridge Connections" by M. A. Gavrilov; "Method of Synthesis of Multi-Pole Relay-Contact Circuits" by V. N. Grebenshchikov; "Application of the Method of

Card 2/5

All-Union Conference on the Theory of Relay Systems.

Probability Graphs for the Analysis of Switching Circuits" by A. D. Kharkevich; "Graphical Method of Constructing Relay-Contact Circuits" by Ya. I. Mekler; "On the Algebraic Method of Analysis and Synthesis of Multi-Contact Relay Circuits" by V. I. Shestakov. The following papers dealt with acute topics: "Automation of the Process of the Analysis of Relay Circuits" by P. P. Parkhomenko; "Matrix Analyser of Relay-Contact Circuits" by T. T. Tsukanov; "Mechanisation of the Process of Synthesis of Relay Circuits" by A. A. Arkhangel'ska; V. G. Lazarev and V. N. Roginskiy; "The Szeged Logical Machine and Some of its Applications" by L. Kalmar (Hungary). The participants of the conference arrived at the conclusion that in the field of synthesis of relay equipment the fundamental problem is that of developing a method of determining the most rational structures. Existing methods solve fundamentally the problem of creating a structure of relay equipment in accordance with exactly formulated conditions of operation. However, for complicated relay systems containing a large number of inter-related blocks, the existing methods are quite cumbersome. The problem arises of general

Card 3/5

investigation of symbolic recording of the conditions of operation for determining the existing relations and particularly for developing methods of sub-dividing the general sequences into sequences corresponding to the various functions to be fulfilled and synthesis of relay equipment in sections. In some cases, the statistical characteristics of individual connections being occupied has to be taken into consideration. An important problem of the theory of relay systems is that of minimising the size of their structure. In view of the complexity of the structures of modern relay systems it is of great importance to develop automatic machinery for synthesis and analysis of relay apparatus and the first successes achieved in this field were reported on at the Conference. The Institute of Automatics and Telemechanics, Ac.Sc., USSR has developed a universal machine for analysing the structure of relay systems on twenty relay elements which permits solution of a very wide class of problems. In the Computer Institute of the Czechoslovak Ac.Sc. and in the Laboratory of Problems of Wire Communcation of the Ac.Sc. USSR, the first machines were built for synthesis

of structures of relay equipment. This work requires further development, particularly as regards machines for the synthesis of structures. The members of the conference pointed out the advisability of organising a coordinating commission relating to work on the theory of relay systems and of establishing an International Federation relating to this problem.

(Note: This is a complete translation).

AVAILABLE: Library of Congress.

Card 5/5

20-118-4-9/61

AUTHOR: Yablonskiy, S.V.

TITLE: On Limit Logics (O predel'nykh logikakh)

PERIODICAL: Doklady Akademii Nauk SSSR, 1958, Vol.20, Nr 4, pp.657-660 (USSR)

ABSTRACT: The k-adic logics P_k treated in an earlier paper of the author [Ref 1] can be generalized to the $\aleph_0$-adic logic $P_{\aleph_0}$. Thus $P_{\aleph_0}$ is the set of all functions $\phi(x_1,\ldots,x_n)$, the arguments of which are defined on the set $E^{\aleph_0} = \{0,1,2,\ldots\}$, where $\phi(\alpha_1,\alpha_2,\ldots,\alpha_n) \in E^{\aleph_0}$ if $\alpha_i \in E^{\aleph_0}$ $(i=1,2,\ldots,n)$. The closed class $P \in P_{\aleph_0}$ is called limit logic if 1) P consists of a countable set of functions, 2) P contains the homomorphic inverse images of the k-adic logics P_k $(k=2,3,\ldots)$. The author investigates the question how many pairwise non-isomorphic limit logics are existing. The answer is given by the following theorem:

Theorem: The cardinality of the maximal subset of all pairwise non-isomorphic limit logics of $P_{\aleph_0}$ is a continuum.

Card 1/2

On Limit Logics 20-118-4-9/61

The proof bases on three lemmas. Finally the author gives examples of two limit logics.
There are 3 tables and 2 references, 1 of which is Soviet, 1 English.

PRESENTED: July 18, 1957, by M.V.Keldysh, Academician
SUBMITTED: July 16, 1957
AVAILABLE: Library of Congress

Card 2/2

YABLONSKIY, S.V.

On limit logics. Dokl. AN SSSR. 188 no.4:657-660 F '58.
(MIRA 11:4)

1.Predstavleno akademikom M.V. Keldyshem.
(Logic, Symbolic and mathematical) (Aggregates)

YABLONSKIY, S.V.

9(5) p.2-4 PHASE I BOOK EXPLOITATION SOV/3176

Problemy kibernetiki, vyp. 2 (Problems of Cybernetics, No. 2) Moscow, Fizmatgiz, 1959. 323 p. Errata slip inserted. 18,000 copies printed.

Ed.: A. A. Lyapunov; Compilers-Editors: O. B. Lupanov, B. Yu. Pil'chak, S. V. Yablonskiy, and Yu. I. Yanov; Eds.: A. A. Konoplyankin, and M. L. Smolyanskiy; Tech. Ed.: S. N. Akhlamov.

PURPOSE: The purpose of this collection of articles is to organize scientific papers on cybernetics and to unite the efforts and interests of Soviet scientists working in this field.

COVERAGE: This is the second volume of "Problemy kibernetiki", dealing with problems of biology, mathematics and engineering as they relate to cybernetics. The first volume, which appeared in 1958, considered problems of programming, machine translation and computer design. Future volumes propose to include a still greater number of subjects related to cybernetics. The editors list 5 recent Soviet books (including 2 translations) dealing

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with cybernetics. They thank the following persons for their help in preparing the book for publication: G. V. Vakulovskaya, T. L. Gavrilova, A. A. Muchnik, B. I. Finikov, M. L. Tsetlin and V. S. Shtarkman. References follow each article.

TABLE OF CONTENTS:

perform these functions, a universal, abstract machine language must be created. The author discusses the ideas of various authors on this subject. There are 14 references: 9 Soviet (5 are translations) and 5 English.

Kaluzhnin, L. A. (Kiyev) Algorithmic Expression of Mathematical Problems 51

The author reports on the work of two seminars in Kiyev: one at the Institute of Mathematics, Academy of Sciences, USSR, under the supervision of V. S. Korolyuk and Ye. L. Rvacheva-Yushchenko on automatic programming ("programs that program"), the other at Kiyev State University, under the supervision of the author on the theory of algorithms and mathematical logic. The aim of both seminars is to find general methods of preparing mathematical and logical problems for processing and solving in modern high-speed computers. There are 7 references: 5 Soviet (1 is a translation) and 2 English.

Mikheyev, V. M. (Moscow). On Sets Containing the Largest

The author attempts to explain algorithmic difficulties arising when solving problems of cybernetics which allow for a trivial solution on the basis of the classical definition of the algorithm. However, such a solution is impracticable because of its cumbersomeness. The author suggests two variations for the solution of the problem. One consists in renouncing the minimum of circuits. The other consists in renouncing investigation of all the functions of the algebra of logic. There are 27 references: 21 Soviet (3 translations), 5 English and 1 French.

Krichevskiy, R. Ye. (Moscow). On the Realization of Functions by Superposition 123

The article consists of three parts. In the first part the author presents fundamental definitions: the superposition of elementary objects, realization, and the simplicity index. In the second part, the fundamental result (the value of $L(D_h)$, which is the upper bound of the indexes of the simplest constructions expressing functions of D_h) is obtained if the realizing constructions are superpositions of

16(1)

AUTHOR: Yablonskiy, S.V.

SOV/20-124-1-11/69

TITLE: On the Impossibility to Avoid the Trial of all Functions of P_2 for the Solution of Some Problems of Circuit Theory (O nevozmozhnosti eliminatsii perebora vsekh funktsiy iz P_2 pri reshenii nekotorykh zadach teorii skhem)

PERIODICAL: Doklady Akademii nauk SSSR,1959,Vol 124,Nr 1,pp 44-47 (USSR)

ABSTRACT: The paper contains a summarizing representation of the results published in detail in "Problemy kibernetiki", Nr 2. There are 6 references, 5 of which are Soviet and 1 American.

ASSOCIATION: Matematicheskiy institut imeni V.A. Steklova AN SSSR (Mathematical Institute imeni V.A. Steklov, AS USSR)

PRESENTED: August 11, 1958, by M.V. Keldysh, Academician

SUBMITTED: August 5, 1958

Card 1/1

16(1)

AUTHOR: Yablonskiy, S.V.

SOV/20-124-5-8/62

TITLE: On Some Properties of Countable Closed Classes in $P_{\aleph_0}$ (O nekotorykh svoystvakh schetnykh zamknutykh klassov iz $P_{\aleph_0}$)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 5, pp 990-993 (USSR)

ABSTRACT: The class $P_{\aleph_0}$ is the set of all functions $f(x_1, x_2, \ldots x_n)$, the arguments of which are defined on the set $E^{\aleph_0} = \{0, 1, 2, \ldots\}$ and for which it is $f(\alpha_1, \alpha_2, \ldots, \alpha_n) \in E^{\aleph_0}$ if $\alpha_i \in E^{\aleph_0}$. Let P be a class of functions from $P_{\aleph_0}$ which is closed with respect to the superposition operation (see author [Ref 1]). The system of functions from P is called complete in P, if the superposition of the functions generates the whole class P. The system of functions from P forms a basis of P, if it is complete, while every subsystem is incomplete. The

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On Some Properties of Countable Closed Classes in $P_{\aleph_0}$ SOV/20-124-5-8/62

closed class P, $P \subset P_{\aleph_0}$ is called limit logic, if 1.) P consists of countably many functions 2.) P contains the homomorphic originals of the k-valent logics P_k (k=2,3,...) (see author [Ref 2,3]). Theorem : There exists a limit logic P containing no basis. Theorem : There exists a limit logic with a basis in which it cannot be obtained a basis from each complete system. Theorem : Every closed countable class of functions P from $P_{\aleph_0}$ can be extended to a closed class Q from $P_{\aleph_0}$, where Q is generated by one function.

There are 4 tables, and 4 references, 3 of which are Soviet, and 1 English.

Card 2/2 Math. Inst. im V. A. Steklov AS USSR

TRAKHTENBROT, Boris Avraamovich; YABLONSKIY, S.V., red.; GORYACHAYA, M.M., red.; AKSEL'ROD, I.Sh., tekhn.red.

[Algorisms and machine solving of problems] Algoritmy i mashinnoe reshenie zadach. Izd.2. Pod red. S.V.IAblonskogo. Moskva, Gos. izd-vo fiziko-matem.lit-ry, 1960. 117 p.

(MIRA 14:3)

(Electronic calculating machines)

R. L. Dobrushin, Second International Congress on Cybernetics (3 March 1958); contents of the paper were published in the second issue of Problemy kibernetiki in the "Khronika" section.

Discussion of I. A. Poletayev's book Signal (17 October 1958).

S. N. Braynes and O. Yu. Kofriankyn, Investigation of the Physiological Mechanism of a Complex Motor Act Under Labyrinth Conditions (31 October 1958).

A. M. Petrovskiy, Report on the Mission to the US (14 November 1958).

A. A. Lyapunov, and S. V. Yablonskiy, Problem of the Systematization of the Basic Concepts of Cybernetics (20 November 1958).

A. Yu. Aksenov, Conference on Automation in Railroad Transportation (12 December 1958).

Yu. A. Shreydar, Means of Describing the Structure of Computers (26 December 1958).

A. P. Yershov, Report on the Cybernetics Symposium in London (26 December 1958).

M. G. Gaaze-Rapoport, Certain Problems of the Behavior of Living Organisms (3) (February 1959).

I. Ye. Fabrikantov, Cybernetic Problematic Topics in Economics (27 February 1959).

D. I. Volovyk, The Basis of Technical Norms of Weight and Speed of River Craft with the Aid of Electronic Digital Computers (13 March 1959).

G. V. Skvirsov, Electrical Simulation of Certain Self-Adaptive Systems (10 April 1959; a part will be published in Problemy kibernetiki, No. 4).

A. A. Lyapunov, O. S. Kulagina, and T. N. Nikishova, Report on the Leningrad Conference on Mathematical Linguistics (24 April 1959, cf., pp 273-278 of this book).

Report presented at the Moscow University Seminar on Cybernetics during 1958-59 school year. (under direction of A. A. Lyapunov) (reported in Problemy kibernetiki, No. 3, 1960, p. 273)

S/020/60/132/01/19/064
B014/B014

AUTHORS: Yablonskiy, S. V., Gil'man, A. M., Kotel'nikov, I. V., Potylitsyn, P. M.

TITLE: A Device for Studying the Control Algorithms of Traffic

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 132, No. 1, pp. 78-81

TEXT: By way of introduction, the authors refer to an investigation carried out by V. V. Korobkov at Moskovskiy gosudarstvennyy universitet (Moscow State University) in which it is shown that automatons for traffic regulation, which meet the requirements of modern traffic, are very complicated. It was necessary to build a device for the proper choice of control algorithms. Such a device was designed at Gor'kovskiy gosudarstvennyy universitet (Gor'kiy State University), and its mode of operation is described in the article under review. First, the main elements of traffic on a crossroad are explained, and the traffic itself is divided into three groups according to the direction and change in direction on the crossroad. Furthermore, the geometric conditions and the control algorithm are referred to as being the main elements of traffic on a crossroad. Here, the six control algorithms shown in Fig. 1 are discussed,

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A Device for Studying the Control Algorithms of Traffic

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each of which is assumed to hold for some time. In order to be able to observe the traffic with a given control algorithm, the device mentioned above was built. The authors chose a type of crossroad at which two two-way roads meet, and it was assumed that regulation be carried out by means of a four-point traffic light. The control circuit is illustrated in Fig. 2. Random traffic events are simulated here by means of eight buzzer generators which indicate the vehicles approaching the crossroad by emitting pulses. Eight counters count the vehicles which are indicated by fifteen lights. The control algorithm is realized by a special programing device. The codes are transformed by a device which also processes information. Digital computers may be used for these two devices. The observer's desk is shown in Fig. 3. There are 3 figures.

ASSOCIATION: Issledovatel'skiy fiziko-tekhnicheskiy institut Gor'kovskogo gosudarstvennogo universiteta im. N. I. Lobachevskogo (Research Institute of Physics and Technology of Gor'kiy State University imeni N. I. Lobachevskiy)

PRESENTED: October 3, 1959, by M. V. Keldysh, Academician

SUBMITTED: September 24, 1959

Card 2/2

83895

S/020/60/134/003/003/020
B019/B060

13,2000

AUTHORS: Potapov, Yu. G., Yablonskiy, S. V.

TITLE: The Synthesis of Self-correcting Contact Circuits

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 134, No. 3, pp. 544 - 547

TEXT: A control system U_α is always realized by a circuit Σi_α, the behavior of which is described by the function $\Phi 1_\alpha$. The latter can be unequivocally determined from Σi_α in a number of cases. Σi_α is then realized by the function $\Phi 1_\alpha = F(\Sigma i_\alpha)$, and in this case a function is established between the set U of control systems (after Yablonskiy, Ref. 1) and the sets $S = \{\Sigma i_\alpha\}$ and $F = \{\Phi 1_\alpha\}$ in such a way that $\Phi = F(\Sigma)$. It is further assumed that the circuits Σ go over into a troubled state Σ', so that $\Sigma' \in S$ holds. Then there exists a subset S_Σ of all circuits Σ', which represents the troubled states of circuits Σ.

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The Synthesis of Self-correcting Contact Circuits

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These troubled states are described by a function G, so that $S_\Sigma = G(\Sigma)$. The authors then offer a definition of a self-correcting circuit, according to which, in the case of any trouble, the circuit Σ' is realized by the same function as the circuit Σ. The question is raised as to whether such circuits exist at all, and it is shown that a self-correcting contact circuit can be set up for any function $\Phi(x_1,\ldots x_n)$. These circuits, however, are very complicated, and reference is made to first results reached by Potapov under restricting premises. A more general solution of the problem is dealt with in the present article. The authors define a function $L_3^m(n)$ which characterizes the complicacy of a circuit. This circuit is based on the premise being described by a function $\Phi(x_1,\ldots x_n)$ and of being self-correcting in the case of short-circuits in m contacts. Theorem 1 is set up and demonstrated, and according to it $L_3^1(n) \sim (2^n)/n$. A paper by O. B. Lupanov (Ref. 2) is referred to in the demonstration. Fig. 2 shows the self-correcting circuit constructed by the authors, and function L is estimated. Theorem 1 is

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The Synthesis of Self-correcting Contact Circuits

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found to hold for the case considered. The authors finally note that by slightly complicating the method given here, the following general theorem 2 is obtained: $L_3^m(n) \lesssim \{[m/2] + 1\}(2^n)/n$. There are 3 figures, 1 table, and 4 references: 2 Soviet and 2 US.

PRESENTED: May 10, 1960, by M. V. Keldysh, Academician

SUBMITTED: May 6, 1960

Card 3/3

YABLONSKIY, S. V. and POTAPOV, Yu. B.

"On the Synthesis of Self-Correcting Networks" (18 March 1960), DAN SSSR 344, No. 3, 1960, 544.

paper delivered at the Moscow State University in 1959/1960 academic year at the seminar on mathematical problems of cybernetics under the leadership of S. V. Yablonskiy

YABLONSKIY, S. V. and LUPANOV, O. V.

"On Certain Problems of Theory of Control Systems"

presented at the All-Union Conference on Computational Mathematics and Computational Techniques, Moscow, 16-28 November 1961

So: Problemy kibernetiki, Issue 5, 1961, pp 289-294

YABLONSKIY, S. V.

Dissertation defended for the degree of Doctor of Physicomathematical Sciences at the Mathematical Institute imeni V.A. Steklova 1962:

"Several Mathematical Problems of Control System Theory."

Vest. Akad. Nauk SSSR. No. 4, Moscow, 1963, pages 119-145

YABLONSKIY, S.V. (Moskva)

Problem concerning the evaluation of the length of disjunctive dead end nor.al forms. Prob. kib. no.7:229-230 '62. (MIRA 15:4)
(Information theory)

LYAPUNOV, A.A. (Novosibirsk); YABLONSKIY, S.V. (Moskva)

Theoretical problems of cybernetics. Probl. kib. no.9:5-22 '63.
(MIRA 17:10)

YABLONSKIY, S.V. (Moskva)

Superpositions of functions in P_k. Probl. kib. no.9:336-340 '63.
(MIRA 17:10)

ZAKHAROVA, Ye.Yu. (Moskva); YABLONSKIY, S.V. (Moskva)

Some properties of essential functionals of P_k. Probl. kib. no.12:247-252 '64. (MIRA 18:6)

ACC NR: AM6027423 Monograph UR/

Yablonskiy, Sergey Vsevolodovich; Gavrilov, Gariy Petrovich; Kudryavtsev, Valeriy Borisovich

Functions of the algebra of logic and Post's classes (Funktsii algebry logiki i klassy Posta) Moscow, Izd-vo "Nauka", 1966. 119 p. illus., biblio., index. 10,000 copies printed.

Series note: Matematicheskaya logiki i osnovaniya matematiki

TOPIC TAGS: ~~logic algebra~~, ~~logic algebra function~~, cybernetics, algebraic logic, mathematic logic, class theory

PURPOSE AND COVERAGE: This book is intended for all those interested in the algebra of logic and theoretical cybernetics. The work is based on Post's work in the algebra of logic and is essentially a summary of his "Two-valued Iterative Systems", first published in 1941. The general concept of proof, the formulation of many of the lemmas, and some of the reasoning is borrowed from Post's work. However, in an effort to simplify the presentation, the authors obtain a structure for closed classes of logic algebra functions which is simpler than Post's.

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Card 1/2 UDC: 512.8+164

ACC NR: AM6027423

SUB CODE: 12/ SUBM DATE: 11Jan66/ SOV REF: 033/ OTH REF: 017/

Card 2/2

YABLONSKIY, V.S. [deceased]; KHARLAMENKO, V.I.; GALLYAMOV, A.K.; BORODAVKIN, P.P.

Tensimetric pressure measurement in flows of viscous and solidifying petroleums and petroleum products. Transp. i khran. nefti no.7:9-12 '63. (MIRA 17:3)

1. Ufimskiy neftyanoy institut.

TUGUNOV, P.I.; YABLONSKIY, V.S. [deceased]

Determining the temperature field of the ground around a pipeline in the process of cooling. Neft. khoz. 41 no.6: 51-53 Je '63. (MIRA 17:6)

KHARLAMENKO, V.I.; YABLONSKIY, V.S. [deceased]

Displacement of petroleums and petroleum products in pipelines under laminar-flow conditions. Izv.vys. ucheb. zav.; neft' i gaz. 6 no.5:71-78 '63 (MIRA 17:7)

1. Ufimskiy neftyanoy institut.

YABLONSKIY, V.S. [deceased]; KHARLAMENKO, V.I.; GALLYAMOV, A.K.; BORODAVKIN, P.P.

Tensometric pressure measurement in flows of viscous and solidifying petroleums and petroleum products. Transp. i khran. nefti no.7:9-12 '63. (MIRA 17:3)

1. Ufimskiy neftyanoy institut.

GALEYEV, V.B.; YABLONSKIY, V.S. [deceased]

Experimental investigation of gas-space saturation in the filling of containers. Transp. i khran. nefti no.7:21-24 '63. (MIRA 17:3)

1. Ufimskiy neftyanoy institut.

TUGUNOV, P.I.; YABLONSKIY, V.S. [deceased]

Ground warm-up by linear and cylindrical sources. Izv.vys.ucheb. zav.; neft' i gaz 6 no.9:81-86 '63. (MIRA 17:2)

1. Ufimskiy neftyanoy institut.

NECHVAL', M.V.; YABLONSKIY, V.S. [deceased]

Gas mixing in consecutive pumping. Izv.vys.ucheb.zav.; neft' i gaz 6 no. 12:75-80 '63. (MIRA 17:5)

1. Ufimskiy neftyanoy institut.

KORNILOV, G.G.; SVIRIDOVA, A.S.; YABLONSKIY, V.S. [deceased]

Estimating the head losses in the motion of gas-liquid mixtures. Trudy NIITransneft' no.3:35-41 '64.

Experimental investigation of the motion of gas-liquid mixtures through pipelines. Ibid.:42-57

(MIRA 18:2)

YABLONSKIY, V.S. [deceased]; SVIRIDOV, V.P.; TONKOSHKUROV, B.A.

Determining the heat transfer and the power of the drive of heaters with mixers. Trudy NIITransneft' no.3:70-76 '64.
(MIRA 18:2)

YABLONSKIY, V.S. [deceased]; SVIRIDOV, V.P.; MUKHAMEDZYANOV, Sh.S.

Curved trajectories of free flooded streams. Trudy NIITransneft' no.3:84-93 '64. (MIRA 18:2)

YABLONSKIY, V.S. [deceased]; SVIRIDOV, V.P.

Determining the optimal parameters when heating mazut in tank cars. Trudy NIITransbeft' no.3:94-103 '64.

(MIRA 18:2)

TUGUNOV, P.I.; YABLONSKIY, V.S. [deceased]

Determining the temperature outlet time of a pipeline through which a hot petroleum product is pumped in a conditionally stationary regime. Trudy NIITransneft' no.3:138-141 '64. (MIRA 18:2)

KHARLAMENKO, V.I.; YABLONSKIY, V.S. [deceased]

Experimental study of the displacement of high-viscosity petroleums and petroleum products in a laminar regime. Trudy NIITransneft' no.3:142-147 '64. (MIRA 18:2)

GAIEYEV, V.B.; YABLONSKIY, V.S. [deceased]

Experimental study of the evaporation of isooctane from the surface of a freely falling stream. Trudy NIITransneft' no.3:148-154 '64. (MIRA 18:2)

BORODAVKIN, P.P.; BYKOV, L.I.; YABLONSKIY, V.S. [deceased]

Stability of underground ar' surface pipelines. Trudy NIITransneft' no.3:155-164 '64. (MIRA 18:2)

YABLONSKIY, Vsevolod Sergeyevich, prof.doktor tekhn.nauk[deceased]; NOVOSELOV, Viktor Fedorovich, dots., kand. tekhn. nauk; GALEYEV, Vil' Bareyevich, st. prepod., inzh.; ZAKIROV, Gaffan Zakirovich, st. prepod., inzh.; KULIKOV, A.A., retsenzent; ZUBAREVA, Ye.I., ved. red.

[Planning, operation and repair of petroleum products pipelines] Proektirovanie, ekspluatatsiia i remont nefteproduktov. [By] V.S.IAblonskii i dr. Moskva, Nedra, 1965. 410 p. (MIRA 18:5)

1. Zamestitel' nachal'nika Glavnogo upravleniya po snabzheniyu narodnogo khozyaystva nefteproduktami RSFSR (for Kulikov).

YABLONSKIY, V.V.

109-9-6/15

AUTHORS: Kaptsov, L.N. and Yablonskiy, V.V.

TITLE: Analysis of a High Frequency Oscillator Employing a Junction Transistor (Analiz vysokochastotnogo avtogeneratora na ploskostnom poluprovodnikovom triode)

PERIODICAL: Radiotekhnika i Elektronika, 1957, Vol.II, Nr 9, pp. 1138 - 1145 (USSR)

ABSTRACT: It is assumed that a junction transistor at high frequencies can be represented by the usual three frequency independent resistances and a collector capacitance C_k (see Fig.1).

The equivalent circuit is employed in the analysis of a grounded base oscillator which contains a resonant circuit in its collector (see Fig.3) and in which the feedback to the emitter is provided by means of a coupling capacitor C_c.

It is assumed that the condition of oscillation requires that the input admittance of the transistor plus feedback circuit be equal to the admittance of the resonant circuit (see Fig.4). It is shown that this condition results in an oscillation frequency:

$$\omega_r \approx \frac{1}{\sqrt{L(C + C_c + C_k)}} , \qquad (12)$$

while the self-excitation condition is expressed by Eq.(13) which can approximately be represented by:,

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Analysis of a High Frequency Oscillator Employing a Junction Transistor.

$$|\omega_n C_c \mathrm{Im}\,\alpha| \geqslant \omega_n^2 (C_k + C_c)^2 r_{\sigma\sigma} \quad . \qquad (14)$$

From the above it follows that the maximum oscillation frequency can be attained when $C_k = C_c$, in which case:

$$\left|\frac{\mathrm{Im}\,\alpha}{\omega_n}\right| = 4C_k r_{\sigma o} \quad , \quad (15), \text{ where } \mathrm{Im}\alpha \text{ is the imaginary}$$

part of the transistor current amplification factor. It is shown that $\mathrm{Im}\alpha$ can be approximately represented by Eq.(16) where $x = \sqrt{1.215\ f/f_{kp}}$, where f_{kp} is the limiting frequency for α . Eq.(15) can then be represented by Eq.(17) and this is plotted in Figs.6 for a transistor having f_{kp} = 500 kc/s, $r_{\sigma o}$ = 140 ohms, and C_k = 19 pF. The results obtained from the above analysis were checked experimentally on a number of Soviet junction transistors and it was found that the calculated values for the maximum oscillation frequencies were up to 30% higher than the

Analysis of a High Frequency Oscillator Employing a Junction Transistor.

measured quantities. From both the theory and experiments it is concluded that the maximum oscillation frequency can be 3 to 4 times higher than f_{kp}.

There are 7 figures, 2 tables and 9 references, 2 of which are Slavic.

ASSOCIATION: Physics Faculty of the Moscow State University im. M.V. Lomonosov (Fizicheskiy Fakul'tet Moskovskogo Gosudarstvennogo Universiteta im. M.V.Lomonosova)

SUBMITTED: February 25, 1957.

AVAILABLE: Library of Congress.

Card 3/3

L 7048-66 EWT(m)/EWP(w)/ETC(m) WW/EM

ACC NR: AP5027721 SOURCE CODE: UR/0380/65/000/005/0055/0058

AUTHORS: Genkin, M. D. (Moscow); Yablonskiy, V. V. (Moscow)

ORG: none

TITLE: Vibration energy flow as a criterion for the vibroactivity of a mechanism

SOURCE: Mashinovedeniye, no. 5, 1965, 55-58

TOPIC TAGS: vibration, vibration measurement, energy theory, shock absorber

ABSTRACT: A vibration energy flow criterion is developed to analyze the vibration mechanism and spectra of different mechanisms. The model is shown schematically on Fig. 1. The time-averaged energy spectrum for the vibration is expressed by

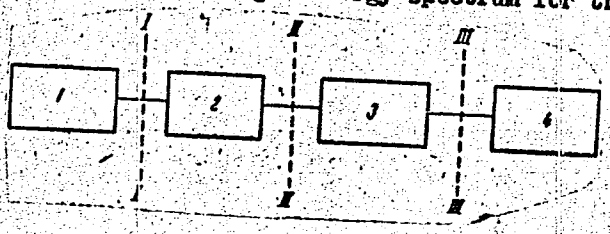

Fig. 1. System of mechanism-foundation-base: 1- mechanism; 2- intermediate support (bolts, shock absorbers); 3- foundation; 4- base

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UDC: 621.01/543

L 7048-66

ACC NR: AP5027721

$$N_t = \frac{1}{T}\int_0^T \left[\int_{S_t} (fv)\,dS\,dt,\right]$$

where f(S,t) is the dynamic pressure vector, S is an area, and v(St) is the velocity vector. This expression is then shown to be given by two n-dimensional vectors F and V

$$N_t = \frac{1}{T}\int_0^T \left[\sum_{k=1}^{n} F_k(t)\,V_k(t)\right]dt = \sum_{k=1}^{n}\frac{1}{T}\int_0^T F_k(t)\,V_k(t)\,dt,$$

$$F = (F_1, F_2, \ldots, F_n), \quad V = (V_1, V_2, \ldots, V_n).$$

Under the assumption that the oscillations are sinusoidal, F and V are related by F = ZV where Z is a square matrix of n-th order signifying the input impedance of the system. With the aid of the above formulae and various instruments such as strain gages, accelerometers, integrators, and amplifiers, this energy flow is measured on various machinery. Orig. art. has: 7 equations and 2 figures.

SUB CODE: ME/ SUBM DATE: 27Apr65/ ORIG REF: 010/ OTH REF: 003

BC

Card 2/2

YABLONSKY, YE. A.

USSR/Plant Physiology - Respiration and Metabolism. I-2

Abs Jour : Ref Zhur - Biol., No 6, 1958, 24628

Author : Yablonsky E.A.
Inst :
Title : On the Significance of the "Eyes" in Potato Tubers.

Orig Pub : Dokl. AN SSSR, 1957, 112, No 2, 352-354

Abstract : In the Crimea branch of the Academy of Sciences of the Ukrainian Soviet Socialist Republic the significance of the "eyes" the tubers of Early Rose potato was studied, for the water -exchange and respiration processes. The "eyes" on the tested tubers were sealed with a molten mixture of wax, rosin and vaseline (20: 8: 1). The processes of water-exchange and exosmosis carried out primarily through the periderm proper and the "eyes" functions were manifested only at some periods during the plant' vegetation. However, in the respiration of the tubers the "eyes" played a substantial role: their

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