

PA 64/49T110

USSR/Physic  
Computer

May/Jun 49

"The Fundamentals of Electronic Mathematical Instruments of Discrete Counting (True-False, Yes-No, One-Zero)," M. L. Bykhovskiy, 55 pp  
"Vyshehi Matemat Nauk," Vol. IV, No 3 (31)

Discusses natural application of the dyadic or binary system to calculating instruments. Numbers are thus expressed with the radix or base 2 (r=2 instead of 10), in the form of a series with r=2 and the expansion-coefficients 0 or 1. Impulses in the calculators follow the all-or-nothing principle: an undetermined

USSR/Physic (Cont'd 1) May/Jun 49

coefficient in the above series either becomes 0 (no current at all) or 1 (current regardless of strength). Any event becomes a succession of elementary events that either occur (on) or do not (off), thus corresponding to the  $\pi$  (true) or  $\bar{\pi}$  (false) in symbolic logic (i.e., "yes" or "no"), or to the 1 (certainty) or 0 (impossibility in probability theory). Following are the subjects: basic elements of electronic instruments; principles of action; "memory" circuits; valves (tubes); separator circuits; counter circuits; construction of the "memory"; multiplication by means of electronic instruments; electronic tabulation in multiplication (binary arithmetic); automatic control; formation of the impulses (impulse is 1, none is 0); introduction of the data and the taking off of the results, etc.

Translation - U-1326, 3 May 51

BYKHOVSKIY, M. L.

Bykhovskii, M. L. Principles of electronic mathematical machines for discrete calculation. *Uspehi Matem. Nauk* (N.S.) 4, no. 3(31), 69-124 (1949). (Russian)

This is an expository article on components of electronic digital computers. No one machine is described or even referred to: only fundamental components are treated. The article is well supplied with line drawings and a few photographs. The presentation is clear and straightforward and apparently regarded as sufficiently complete since the article contains no references to other works from which the material was extracted. Nothing new is contributed to the subject. The only major component apparently unknown to the author is the magnetic drum memory. Detailed descriptions (including values of resistors, etc., and tube numbers) are given of the following components: electronic static memories; ring counters and adders; memories: punch cards, paper tapes, selectron, cathode ray tubes, mercury delay lines; multipliers; control systems; pulse generators; punch card in- and output.

*D. H. Lehmer.*

Source: *Mathematical Reviews*, 1950 Vol 11 No. 2

FA 159T39

USSR/Mathematics - Computers

Laplacian

Apr 50

"Accuracy of Electrical Circuits, Designed for Solving Laplace Equations," M. S. Bykhovskiy, Inst of Precision Mech and Calculating Techniques, Acad Sci USSR, 38 pp

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 4

Discusses error in solving differential equations by electrical circuits as consisting of our parts, each of which can be studied independently: (1) error in method of solution, i.e., error arising in replacing

159T39

USSR/Mathematics - Computers (Contd) Apr 50

differential equation by algebraic (finite difference) equations, (2) interval error of circuit (resulting from inaccuracies in production of circuit components), (3) error caused by inaccurately assigned voltages and currents supplying circuit (error in setting up boundary conditions) and (4) error of measurement. Discusses second and third points, i.e., in-putting systems, in detail. Submitted 6 Jan 50 by Acad N. G. Bruyevich.

159T39

BYKHIVSKIY, M.L.

Die Genauigkeit Elektrischer Netze, Die Zur Lösung Von Laplace-Gleichungen  
Verwendet Werden. Berlin, Technik, 1952.

55 P. Diags., Tables.

Translation From The Russian, Tochnost' Elektricheskikh Setok Prednaznacheeniykh  
Dlya Resheniya Uravneniy Laplaca, 1950.

At Head Of Title: Schriftenreihe Der Verlages Technik, Bd. 48.

"Literaturhinweis": P. 55.

SO: N/5

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U S S R .

Byhovskii, M. L. The accuracy of electric circuits. Akad. Nauk SSSR. Tochnost' Meh. Mashin 1952, no. 1, 5-19 1 - F/W  
(1952). (Russian)

57 29/11

DYKHOVSKIY, M. L.

USSR,  
Dykhovskii, M. L. Estimate of the accuracy of the basic  
formulas of the theory of errors of electric circuits. 1 - F/W  
Akad. Nauk SSSR, Tekhnicheskii Mezhdunarodnyi Nauchnyi Zhurnal 1952, no. 1,  
20-31 (1952). (Russian)

BT

BYKHOVSKIY, M.L.

Precision of electric circuits operating in transitional processes. Trudy  
Sem. po toch.mash. no.4:3-55 '52. (MLRA 6:6)  
(Electric circuits)



BYKHOVSKIY, Mikhail Lazarevich; ARTOBOLEVSKIY, I.I., akademik, otvetstvennyy  
red.; ANTRUSHIN, B.D., red.izd-va; NOVICHKOVA, N.D., tekhn.red.

[Principles of dynamic precision of electric and mechanical circuits]  
Osnovy dinamicheskoi tochnosti elektricheskikh i mekhanicheskikh  
tsepei. Moskva, Izd-vo Akad.nauk SSSR, 1953. 155 p. (MIRA 11:3)  
(Automatic control) (Electric circuits)

BYKHOVSKIY, M.I.

Probability technique for estimating errors in the solution of  
nonlinear ordinary differential equations for electric amplifier  
systems. Trudy Sem. po toch.mash. no.6:3-17 '54. (MLRA 7:11)  
(Electronic calculating machines) (Differential equations)  
(Probabilities)

SOV/124-58-5-5040

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 5, p 14 (USSR)

AUTHOR: Bykhovskiy, M.L.

TITLE: Electrical-analog Investigation of the Dynamic Precision of Pneumatic Measuring Systems in Automatic Regulators (Issledovaniye dinamicheskoy tochnosti pnevmaticheskikh izmeritel'nykh sistem kontrol'nykh avtomatov)

PERIODICAL: V sb.: Tochnost' izgotovleniya sharikovykh i rolikovykh podshipnikov na avtomat. liniyakh. Moscow, AN SSSR, 1955, pp 137-181

ABSTRACT: Bibliographic entry

1. Pneumatic systems--Analysis
2. Measurement--Equipment
3. Mathematical computers--Applications

Card 1/1

Name: BYKHOVSKIY, Mikhail Lazarevich  
Dissertation: Principles of Dynamic Accuracy of  
Electrical and Mechanical Circuits  
(in Addition to the Measuring and Con-  
trol Circuits of Automatic Machines)  
Degree: Doc Tech Sci  
Affiliation: [Not indicated]  
Defense Date, Place: 4 Apr 56, Council of Inst of Machine  
Science, Acad Sci USSR  
Certification Date: 27 Oct 56  
Source: BMVO 6/57

BYKHOVSKIY M.L. (Dr. Tech. Sci.)

Dynamic precision of control automats of automatic lines.

paper read at the Session of the Acad. Sci. USSR, on Scientific Problems of  
Automatic Production, 15-20 October 1956  
Avtomatika i telemekhanika, No.2 p 182-192, 1957

9015229

ARTOBOLEVSKIY, I.I., akademik; BYKHOVSKIY, M.L., kandidat tekhnicheskikh nauk.

~~Program control of metalworking machines.~~ Vest.AN SSSR 26 no.6:51-57  
Je '56. (MIRA 9:9)

(Metalworking machinery) (Automatic control)

BYKHOUKIIY, M.L.

Effect of minor nonlinearities on the dynamic precision of measuring  
and control systems. Trudy Inst.mash.Sem.po toch.v mash.i prib.  
no.9:3-21 '57.

(MIRA 10:9)

(Differential equations) (Automatic control)

(Scales (Weighing instruments))

Bykhovskiy, M.L.

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PHASE I BOOK EXPLOITATION

SOV/2563

Akademiya nauk SSSR. Institut mashinovedeniya. Seminar po teorii mashin i mekhanizmov

Trudy, tom 18, vyp. 71 (Transactions of the Institute of Mechanical Engineering, Academy of Sciences, USSR. Seminar on the Theory of Machinery and Mechanisms, Vol 18, No. 71) Moscow, Izd-vo AN SSSR, 1958. 89 p. Errata slip inserted. 2,500 copies printed.

Ed. of Publishing House: M.L. Dobshits; Tech. Ed.: N.F. Yegorova; Editorial Board: I.I. Artobolevskiy, Academician (Resp. Ed.); G.G. Baranov, Doctor of Technical Sciences, Professor; V.A. Gavrilenko, Doctor of Technical Sciences, Professor; V.A. Zinov'yev, Doctor of Technical Sciences, Professor; A.Ye. Kobrinskiy, Doctor of Technical Sciences; N.I. Levitskiy, Doctor of Technical Sciences, Professor; N.P. Rayevskiy, Candidate of Technical Sciences; L.N. Reshetov, Doctor of Technical Sciences, Professor; and M.A. Skuridin, Doctor of Technical Sciences, Professor.

PURPOSE: This collection of articles is intended for scientific research workers and engineers.

Card 1/4



Transactions (Cont.)

SOV/2563

COVERAGE: This collection of articles deals with the following topics: thread control in textile machines, pneumatic devices with diaphragms, resonance in centrifugal pumps, the dynamics of electrically driven machinery, synthesis of four-link transmission mechanisms, and the design of link mechanisms. No personalities are mentioned. References follow several of the articles.

TABLE OF CONTENTS:

Preface

Kostitsyn, V.T. (Deceased) [Doctor of Technical Sciences, Professor]. Design of a Disk-type Thread Governor 3

The author points out the interdependence between the tension in the thread and the angle of contact between thread and spindle. 4

Gerts, Ye.V. [Candidate of Technical Sciences]. Dynamic Characteristics of Pneumatic Diaphragm-type Devices 11

(This theoretical and experimental investigation deals with the dynamic characteristics of a single-action pneumatic device with a plane diaphragm.)

Card 2/4

Transactions (Cont.)

SOV/2563

Examples of the calculations involved are presented.

Kononenko, V.O. [Doctor of Technical Sciences]. Resonance Properties of a Centrifugal Vibrator

22

Equations for the motion of a centrifugal vibrator are presented, and the basic interrelations between the parameters of the system and the regimes of the motion are established. Simplified geometrical criteria for steady motion and the effect of mechanical characteristics are presented.

Bykhovskiy, M.L. [Doctor of Technical Sciences ]. Problem of the Dynamics of Machinery With Electric Drives

43

The author derives a general equation for investigating the dynamics of d-c electromechanical systems, with consideration being given to electromagnetic processes in the motor. A comparison is made with other simplified methods which take only the static characteristics of the motor into consideration.

Cherkudinov, S.A., and N.V. Speranskiy. Synthesis of Four-bar Linkage Mechanisms by the Method of Interpolative Approximation With One Node of High Multiplicity. 60

This article is the continuation of an article published by the authors in

Card 3/4

Transactions (Cont.)

SOV/2563

Volume I, Number 67, 1957, under the same title. Methods developed in the first part are applied to the synthesis of the slider-crank mechanism.

Grodzenskaya, L.S. Design of Linkage Mechanisms for a Given Time of Dwell of the Follower Link 69

Methods for designing link mechanisms with a dwell in the extreme position (Chebyshev mechanisms) are discussed.

AVAILABLE: Library of Congress

GO/jb  
12-19-59

Card 4/4

PHASE I BOOK EXPLOITATION 688

Bykhovskiy, Mikhail Lazarevich

- . Osnovy dinamicheskoy tochnosti elektricheskikh i mekhanicheskikh tsepey (Principles of Dynamic Accuracy of Electric and Mechanical Circuits) Moscow, Izd-vo AN SSSR, 1958. 155 p. 5,500 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya.

Resp. Ed.: Artobolevskiy, I.I., Academician; Ed. of Publishing House: Antrushin, B.D.; Tech. Ed.: Novichkova, N.D.

PURPOSE: This book may be useful to engineers engaged in the development of automatic control systems.

COVERAGE: An investigation of the dynamic error of electric circuits is made, and methods of solving the dynamic problem of systems without the use of differential equations are presented. There are 89 references, 66 of which are Soviet (including 4 translations),

Card 1/4

Principles of Dynamic Accuracy (Cont.) 668

22 English and 1 German. No personalities are mentioned.

TABLE OF CONTENTS:

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Ch. I. Steady-state Dynamic Accuracy of Electric Circuits	
1. Circuits with resistive components (R-circuits)	12
2. Circuits with reactive components (R-C-L-M circuits)	14
3. Deviation of actual frequency characteristics of the system from the calculated. Frequency characteristics of system dynamics "in the small"	23
4. Circuits with distributed parameters	30
5. Circuits with nonlinear resistances	32
6. Probability analysis of circuit errors	34
7. Evaluation of method accuracy. Determination of higher-order corrective terms	40
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Principles of Dynamic Accuracy (Cont.)	668
Ch. II. Dynamic Accuracy of Electric Circuits With an Arbitrary Input Signal (Unsteady State)	56
1. Dynamic accuracy of linear circuits	61
2. Experimental method of determining different-order influence coefficients (partial derivatives) in the case of primary errors	73
3. The case when primary errors are time functions	88
4. Circuits with distributed parameters	95
5. Circuits with nonlinear components	95
6. Improving system accuracy by introducing controls	103
7. Probability analysis of the dynamic accuracy of electric circuits with arbitrary input signal	110
Ch. III. Extension of the Developed Theory to Mechanical Systems. Method of Electrical Analogy in the Problem of Dynamic Accuracy	121
1. Transformed circuit method in analysis of dynamic accuracy of mechanical systems	122

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Principles of Dynamic Accuracy (Cont.)	668	
2. Electrical modeling of mechanical transformed circuits		137
Ch. IV. Circuits With Small Intrinsic Nonlinearities		140
1. Equations of system dynamics "in the small"		140
2. Solution of dynamics equations "in the small" by the number series method. System phase diagram "in the small"		143
3. Analysis of dynamic accuracy on electric models of transformed circuits		149
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Bibliography

AVAILABLE: Library of Congress

JP/ksv  
10-20-58

Card 4/4

BYCHOVSKIY, M. L.

M. L. Bychovskiy, "The Present State of Accuracy Problems in Circuits."

paper presented at the 2nd All-Union Conf. on Fundamental Problems in the Theory of Machines and Mechanisms, Moscow, USSR, 24-28 March 1958.



BYCHOVSKIY, M. L.

M. L. Bychovskiy and A. E. Kobrinskiy, "On the Dynamics of Sensing Systems in Program Controlled Machinery."

paper presented at the 2nd All-Union Conf. on Fundamental Problems in the Theory of Machines and Mechanisms, Moscow, USSR, 24-28 March 1958.

BYKHOVSKIY, M.I., doktor tekhn.nauk, starshiy nauchnyy sotrudnik;  
KOBINSKIY, A.Ye., doktor tekhn.nauk, starshiy nauchnyy sotrudnik.

Investigating the dynamics of stepped systems for program control  
of machine tools. Izv.vys.ucheb.zav.; mashinostr. no.2:79-90  
'58. (MIRA 11:12)

1. Institut mashinovedeniya AN SSSR i Moskovskoye vyesheye  
tekhnicheskoye uchilishche im. Baumana.  
(Machine tools--Numerical control)

BYKHOVSKIY, M.L., doktor tekhn.nauk; BADULIN, S.S., kand.tekhn.nauk  
MOROZOV, K.K., inzh.; SCIBNEV, A.V., inzh.; TRIST'YAKOVA, N.I.,  
inzh.

Investigating the precision of amplifiers of intermediate  
frequency. Nauch.dokl.vys.shkoly; mash.i prib. no.2:162-173  
'58. (MIRA 12:10)

1. Predstavleno Moskovskim vysshim tekhnicheskim uchilishchem im.  
Baurmana.

(Amplifiers, Electron tube--Testing)

SOV/159-58-3-24/31

9(2)

AUTHOR:

Bykhovskiy, M.L.

TITLE:

The Principal Ideas in the Theory of Electrical Circuit Accuracy

PERIODICAL:

Nauchnyye doklady vysshey shkoly, Mashinostroyeniye i priborostroyeniye, 1958, Nr 3, pp 171-178 (USSR)

ABSTRACT:

This report was delivered at the inter-vuz scientific technological conference at the MVTU imeni Baumana in January 1958. The problem of providing the proper accuracy of electrical and electronic circuits is of great importance in modern engineering. Solving the problem of electric circuit accuracy is of equal importance for technology. Organizing the mass-production of electronic parts depends on the proper solution of interchangeability problems and tolerances. The theoretical principle of solving such technology tasks is the accuracy problem. It must be taken into consideration that solving the problem of electronic parts interchangeability is of great importance not only in the field of technology but also for practical

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The Principal Ideas in the Theory of Electrical Circuit Accuracy

operation. The accuracy problem is closely related with providing the necessary reliability of electric circuits. The basic tasks of the theory of electric circuit accuracy consists in creating general methods for investigating and calculating the accuracy of electrical circuits influenced by errors in circuit elements and the unavoidable presence of parasite elements which are not to be considered in the calculation systems. Further, the theory of the electric circuit accuracy serves for creating methods providing the required circuit accuracy. Thereby, the problem of providing the proper accuracy of electronic and electric circuits is principally a dynamical problem. Presently, the available methods provide the possibility of a correct performance of the analysis and the projecting of electrical circuits. Starting from the conditions of given accuracy, it is possible to determine the circuit sections in which installing regulating devices is required, to designate correctly the technology of adjusting and selecting tolerances for

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The Principal Ideas in the Theory of Electrical Circuit Accuracy

individual elements. Regardless to the specific achievements being available in this field, modern engineering presents a number of new theoretical tasks. They consist of problems of spatial system accuracy with distributed parameters (for example, wave guides), the accuracy of pulse systems and semi-conductor circuits. There are 4 block diagrams, 1 photograph and 5 Soviet references.

SUBMITTED: January 25, 1958

Card 3/3

9(2)

AUTHORS:

SOV/159-58-3-27/31  
Bykhovskiy, M.L., Badulin, S.S., Morozov, K.K., Sgibnev, A.V. and Tret'yakova, N.I.

TITLE:

An Investigation of the Accuracy of Intermediate Frequency Amplifiers

PERIODICAL:

Nauchnyye doklady vysshey shkoly, Mashinostroyeniye i priborostroyeniye, 1958, Nr 3, pp 190-196 (USSR)

ABSTRACT:

This is Part II of a paper of which Part I was published in the preceding number of subject periodical. In this part, the authors present the experimental determination of influence coefficients by the method of converted circuits. Figure 1 shows two graphs of the IF amplifier of the TV set "Start". Figure 2 shows the apparatus used for the experimental determination of the influence coefficients, consisting of a tube voltmeter LB-9, generator GSS-6 and oscillograph EO-7 for determining the phase by means of Lissajou figures. The final chapter is devoted to methods of adjusting and tuning IF amplifier stages. The authors then summarize the results of their investigations:

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SOV/159-58-3-27/31

An Investigation of the Accuracy of Intermediate Frequency Amplifiers

1) The basic conceptions were formulated for obtaining formulae for calculating the accuracy of intermediate frequency amplifiers, especially for determining the error in the amplitude-frequency characteristic, the irregularity error of the amplification factor and the phase errors of amplifiers; 2) Experimental methods for investigating and calculating of the IF amplifier accuracy; 3) Graphs were presented for influence coefficients; 4) The accuracy of amplifiers was analyzed; 5) Methods for tuning IF amplifiers were developed and equations were obtained describing the tuning processes. The theory developed in this paper and the methods are illustrated by typified IF amplifier networks. For other networks, the calculation results and the analyses will be different. However, the formulae explained in this paper may be used in an analogous manner without great difficulty for other networks, for example, amplifier stages

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An Investigation of the Accuracy of Intermediate Frequency Amplifiers

with grounded grids, etc. There are 1 photograph, 2 graphs and 1 table. This article was presented by the Kafedra "M-1" Moskovskogo vysshego tekhnicheskogo uchilishcha imeni Baumana (Chair "M-1" of the Moscow Higher Technical School imeni Bauman)

SUBMITTED: February 7, 1958

Card 3/3

BYKHOVSKIY, M.L.

Dynamics of machines with electric drives. Trudy Inst.mash.;  
Sem.po teor.mash. 18 no.71:43-59 '58. (MIRA 12:1)  
(Machine tools--Electric driving)

Bykhovskiy, M.L.

25(2); 9(7)

р. 3

PHASE I BOOK EXPLOITATION

SOV/3128

Akademiya nauk SSSR. Institut mashinovedeniya. Seminar po tochnosti v mashinostroyeni i priborostroyeni

Trudy, vyp. 13 (Transactions of the Institute of Mechanical Engineering, USSR Academy of Sciences. Seminar on Precision in Machine Building and Instrument Construction, Nr 13) Moscow, 1959. 61 p. 2,500 copies printed.

Ed. of Publishing House: D.M. Ioffe; Tech. Ed.: I.N. Guseva; Editorial Commission: N.G. Bruyevich, Academician (Resp. Ed.), G.G. Baranov, Doctor of Technical Sciences, M.L. Bykhovskiy, Doctor of Technical Sciences, A.P. Vladziyevskiy, Doctor of Technical Sciences, B.G. Dostupov, Doctor of Technical Sciences; M.I. Kochenov, Candidate of Technical Sciences, Yu.V. Lyubotov, Candidate of Technical Sciences, D.N. Reshetov, Doctor of Technical Sciences, V.I. Sergeyev, Candidate of Technical Sciences, A.S. Shatalov, Doctor of Technical Sciences

Card 1/4

SOV/3120

Transactions of the Institute (Cont.)

PURPOSE: This collection of articles is intended for scientists working in the field of computers and electronics.

COVERAGE: This collection of articles was originally read at a seminar of the Academy of Sciences on the topic of accuracy in machine and instrument building. Individual articles treat measuring and computing devices. No personalities are mentioned. References follow each article.

TABLE OF CONTENTS:

Chekhanadskiy, N.A. On Some Problems of Theoretical Probability Analysis of Static Errors of Measuring Systems and 3  
The author discusses some questions of terminology, derives an expression for the total error of a measuring system, giving particular cases of application of the obtained formulas, namely, when the external excitations are absent, when the external excitations are stationary random functions of time, and when the external excitations are constant magnitudes.

Matevosyan, P.A. Determining Power and Direction of Energy Flow in Connections of Complex Devices  
The author gives methods for determining the number of degrees of freedom, and for determining forces and direction of energy flow in connection of complex systems.

Card 2/4

SOV/3128

Transactions of the Institute (Cont.)

Ljubatov, Yu. V. Investigation of Errors in Methods in Sighting Systems  
With Movable Speculae 28

The author presents a universal way of determining methodic errors and parallaxes in an optical system with speculae in pencil beams, which almost eliminates the possibility of an error.

Kogutov, R.I. Some Problem of Increase of the Accuracy of Bar - type  
Computing Devices 34

The author derives a formula for determination of error of the mechanism in the case of adjustment by two parameters; determines the limit derivations of the mechanism error, taking into consideration adjustment by one, and by two parameters; also determines the error of the selected adjustment method; shows the adjustment of an tangential mechanism by two parameters, elimination of plays and clearances in kinematic couples, and the effect of plays on the accuracy of the mechanism

Bykhovskiy, M.L. Accuracy of Electric Circuit With Electron Tubes,  
Operating Under Large-Signal Conditions 53

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Transactions of the Institute (Cont.)

SOV/3128

The author discusses the error in circuit output voltage, due to the errors in the linear system, and to the errors in tube characteristics.

AVAILABLE: Library of Congress

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VK/gmp  
4-22-60

BYKHOVSKIY, M.L.; RADULIN, S.S.; MOROZOV, K.K.; SGIBNEV, A.V.; TRET'YAKOVA,  
N.I.

Investigating the precision of discriminators. Nauch. dokl. vys. shkoly;  
mash. i prib. no.2:201-220 '59. (MIRA 12:12)  
(Radio frequency modulation)

By K-H-O-V-S-K-I-Y, M-I-L.

report to be presented at the 1st Intl Congress of the Intl Federation of Automatic Control, 25 Jun-5 Jul 1960, Moscow, USSR.

BRUNOVSKI, B. L. - "Ultra stability in electronic calculating devices in the solution of nonlinear equations in indefinite form"

CHERVENIN, A. B. - "Methods of calculating devices in systems for the automatic control of rolling mills"

CHERNOMIR, V. K. - "Concerning some problems of the organization of self-adjusting and self-teaching systems of automatic control, based on principles of random search"

DANILEV, B. I. - "Development of automatic control systems for boiler plants"

DUBININ, Ye. G. - "Determination of optimum adjustments of industrial automatic regulation systems according to initial data obtained from experience"

DURVA, A. I., and NOZDRAVITSER, E. H. - "Methods of organizing dynamic functions in the theory of nonlinear regulating systems"

EREMENKO, E. M. - "Passive regulation and inter-communications of a multi-motor electric drive used technology in continuous rolling mills"

FILIPENKO, A. B. - "Problems of mathematical theory of automatic control systems"

FRIDLYANSKI, I. - "Automation of a reversible cold rolling mill for continuous casting"

KALITVINSKI, A. P. - "Application of the theory of differential equations with a discontinuous right side to nonlinear problems of automatic regulation"

KAPITANOV, M. A. - "Structural synthesis and operational reliability of relay devices"

KARIN, M. Z. - "Automation of investigation systems"

KOROTKIY, G. Z., and SHUMILOV, V. Z. - "Problems of disturbance and problems of control of electric power systems"

KURKOVA, S. - "Logical method of synthesis of functional converters in the theory of automatic control"

KURKOVA, S., and LITVINOV (Ivanov), I. - "The control of a gas pipe line"

IVANOV, A. G. - "Concerning some applications of the theory of combined measurement for dispatched operations of automatic systems"

IVANOV, E. B., and SHUMILOV, V. Z. - "A quasi-equilibrated bridge regulation systems for synchronous control"

KAZEMKIN, V. V. - "Concerning the process of extra regulation of inert objects in the presence of disturbances"

KAZEMKIN, V. V. - "Some problems of the theory of statistical linearization in its application"

KAZEMKIN, V. V. - "Some problems of the theory of impulse systems with delay"

KAZEMKIN, V. V., and SHUMILOV, V. Z. - "Investigation of the dynamics of the hydraulic part of a copying lathe"

KAZEMKIN, V. V., and SHUMILOV, V. Z. - "Dynamics of continuous systems of automatic regulation with extra self-adjustment of corrective devices"

KAZEMKIN, V. V., and SHUMILOV, V. Z. - "Concerning the selection of parameters of automatic stability systems"

KAZEMKIN, V. V., and SHUMILOV, V. Z. - "The dynamics of devices imitating living organisms"

KAZEMKIN, V. V., and SHUMILOV, V. Z. - "The dynamics of automatic regulation and control systems"

KAZEMKIN, V. V., and SHUMILOV, V. Z. - "Automatic calculating devices as a means of insuring the reliability of complex automatic systems"

KAZEMKIN, V. V., and SHUMILOV, V. Z. - "Mechanization of processes of analysis and synthesis of the structure of relay devices"



By KHovSKIY, M.L

PHASE I BOOK EXPLOITATION

Akademiya nauk SSSR. Institut mashinovedeniya. Seminar po teorii mashin i mekhanizmov

Trudy, tom 20, vyp. 78 (Transactions of the Institute of Mechanical Engineering, Academy of Sciences USSR. Seminar on the Theory of Machines and Mechanisms, Vol. 20, No. 78) Moscow, 1960. 59 p. Errata slip inserted. 2,700 copies printed.

Editorial Board: I. I. Artobolevskiy (Resp. Ed.), Scientific Supervisor of the Seminar, Academician; G. G. Baranov, Professor, Doctor of Technical Sciences; V. A. Gavrilenko, Professor, Doctor of Technical Sciences; V. A. Zinov'yev, Professor, Doctor of Technical Sciences; A. Ye. Kobrinskiy, Doctor of Technical Sciences; N. I. Levitskiy, professor, Doctor of Technical Sciences; N. P. Rayevskiy, Candidate of Technical Sciences; L. N. Reshetov, Professor, Doctor of Technical Sciences; Ed. of Publishing House: M. M. Knoroz; Tech. Ed.: I. F. Koval'skaya.

Card 1/4

Transactions of the Institute of (Cont.)

SOV/4571

**PURPOSE:** This book is intended for scientific research workers and engineers concerned with the theory and design of mechanisms.

**COVERAGE:** The collection contains articles dealing with theoretical problems of mechanisms and machines. Included are discussions on the simplification of various solutions, experimental methods of investigation of dynamic systems, the application of the Bode [?] and Chebyshev points to solution of some problems of synthesis, and an article describing an analytical method of design. Academician I. I. Artobolevskiy, scientific supervisor of the seminar, wrote the preface to this collection. No personalities are mentioned. References accompany each article.

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Preface	3
Shakhbasyan, K. Kh. Analytical Method of Design of Slider-Crank Space-Mechanism With Lower Pairs (Submitted March 25, 1958)	5
The author simplifies the calculating operations for determining unknown parameters and facilitates design of the mechanism in orthogonal projections by selecting a proper system of coordinates. This article is a continuation of works previously published by the author together with N. I. Levitskiy.	

Card 2/4

Transactions of the Institute of (Cont.)

SOV/4571

Sasskiy, K. F. Some Problems of Design of Spherical Hinged-Link Mechanisms (Submitted March 26, 1958) 10

The author gives convenient formulas for determining angular and linear velocities and accelerations of links of spherical hinged-link mechanisms and formulas for kinematic and kinetostatic design of n-link spherical mechanisms.

Bogolyubov, A. N. On the History of Development of the Theory of Mechanisms and Machines (Submitted March 24, 1959) 20

The author reviews one period of the above-mentioned history. For this purpose he has studied the original scientific and technical literature of the late 18th and early 19th centuries. A detailed review of the works of the founders of the theory of mechanisms and machines is given with critical analysis and historical evaluation of these works.

Card 3/4

Transactions of the Institute of (Cont.)

SOV/4571

Rykhovskiy, M. L., V. A. Zinov'yev, and T. T. Pavlova. Experimental Investigation of Electrically-Driven Dynamic Systems (Submitted April 7, 1959)

The authors make a theoretical and experimental investigation of the effect of electromagnetic inertia of a motor on the performance of a motor-machine unit. Also discussed is a resonance method for determination of the dynamic parameters of the motor, which was developed by the authors.

33

Geronimus, Ya. L. Application of the Boll and Chebyshev Points to the Solution of Some Problems of the Synthesis of Mechanisms

The author gives graphical and analytical solutions of the problem of synthesizing straight-line mechanisms in which any given point of the connecting-rod has a third-order (Boll's point) or fifth-order (Chebyshev's point) contact, with the straight-line segment. This solution is based on Burmaster's theory and uses a number of transformations which have not been applied before in the synthesis of mechanisms.

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AVAILABLE: Library of Congress

Card 4/4

VK/wrc/fal  
12-14-60

S/196/61/000/004/001/002  
E073/E135

**AUTHORS:** Bykhovskiy, M.L., and Kobrinskiy, A.Ye.

**TITLE:** On the Dynamics of Stepping Systems of Programme Control

**PERIODICAL:** Referativnyy zhurnal, Elektrotehnika i energetika, 1961, No.4, abstract no. 4K104, pp.16-17. Sbornik "Teoriya mashin avtomat. deystviya i teoriya tochnosti v mashinostr. i priborostr.", Moscow, Mashgiz, 1960, 19-35

**TEXT:** The advantages and disadvantages of open and closed control systems with stepping motors are compared. The equations of motion are given for an open stepping system and also the static characteristics of a stepping motor. It was established that for analysing the dynamics of the system two static characteristics of the investigated motor are necessary: the dependence of the torque on the turning angle for the maximum flux and the curve of the increase in the magnetic flux as a function of time. Equipment developed by the In-t mashinovedeniya AN SSSR (Institute of Science of Machines, AS, USSR) is described for recording the static characteristics of a stepping motor. Certain definitions are  
Card 1/2

S/196/61/000/004/001/002  
E073/E135

On the Dynamics of Stepping Systems of Programme Control  
given which are characteristic for the operation of systems with  
stepping motors. Analysis of the dynamic properties of an open  
system is carried out on the phase plane and on an electric  
analogue. The features of constructing electrical models are  
considered. A method is presented of plotting integral curves on  
the phase plane with numerical calculation and graphical  
constructions.

[Note: The above text is a full translation of the original  
Soviet abstract.]

Card 2/2

32592

S/569/61/003/000/011/011  
D201/D305

9,7000

AUTHOR: Bykhovskiy, M.L. (USSR)  
TITLE: Ultra-stable electronic computers generating implicit non-linear equations  
SOURCE: International Federation of Automatic Control. 1st Congress, Moscow, 1960. Statisticheskiye metody issledovaniya. Teoriya struktur, modelirovaniye, terminologiya, obrazovaniye. Moscow, Izd-vo AN SSSR, 1961, 589 - 603

TEXT: Introduction of special feedback circuits is required for solving implicit non-linear differential equations on an analogue computer. This results in the problem of securing the stability of the system, since for certain values of variables the system may become unstable. The author suggests a basically new method of securing the stability of the system, based on the principle of ultra-stability, i.e. by designing a system which would adjust its circuit to remain stable. Such a system consists of introducing supplementary parameters which can take some discrete values (step Card 1/51)

Ultra-stable electronic computers ... S/569/61/003<sup>32552</sup>/000/011/011  
D201/D305

functions); thus an ultra-stable system is a variable structure system, such as that of living organisms. The introduction of this principle results in another problem which has to be solved - detection of the loss of stability and the choice of a new system of parameters, without any loss in accuracy, all possible new circuits being functionally identical. Let the equation to be solved by the analogue having the form

$$y^{(n)} = y^{(n)} + f(y^{(n)}, y^{(n-1)}, \dots, y, t). \quad (2)$$

The first step in evolving an ultra-stable system is to introduce the step parameter "a" and the low frequency stability condition of the new system becomes 4

$$a = \frac{\partial f}{\partial y^{(n)}} < 0. \quad (6)$$

The second step consists in automatic determination of instability conditions and determining thus a new value of "a" by means of commutating unit. It consists of a simple gas-discharge tube relaxation generator, operating a step-by-step switch. In general an ul-

Card 2/54



32592

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D201/D305

Ultra-stable electronic computers...

tra-stable system can choose a stable structure for itself only if between all variants of it, realized by the step function, at least one is stable. The high-frequency instability, determined by the time constants  $T_i$  of the operational amplifier, is avoided by connecting into the closed loop of the system an RC LP filter, with a time constant  $T_f$ . In order that the additional capacitance  $C_f$  introduced does not affect the basic solution,  $T_f$  is made considerably smaller than that of the integrating amplifiers present. If a system of  $m$  equations with  $m$  variables has to be solved, then the analogue with the ultra-stability circuit is as shown in Fig. 7. The ultra-stability circuit has, in this case,  $2^m$  - position switching unit, where  $m$  - number of equations. It is possible, according to the analogue properties, to simplify the ultra-stability circuits, e.g. by grouping them and so forming multi-stability circuits. Since the feedback circuits solve a system of finite equations for determining higher-order derivatives, the above considerations also apply to cases of analogue solutions of not only implicit differential equations, but also finite equations. This is of importance when using analogue computers for continuous solutions of algebraic

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Ultra-stable electronic computers ...

<sup>32592</sup>  
S/569/61/003/000/011/011  
D201/D305

and transcendental equations. A discussion followed, in which the following took part: S. Paszkowski (Poland) and M.V. Rybarkov (USSR) There are 10 figures and 4 references: 1 Soviet-bloc and 3 non-Soviet-bloc. The references to the English-language publications read as follows: W.R. Ashley, Design for a Brain, John Wiley & Sons, New York, 1952; W.R. Ashley, Design for a Brain, Electronic Engineering, Dec. 1948, p. 379. 4

Card 4/5/

BYKHOVSKIY, M.L.; VISHNEVSKIY, A.A.; KHARNAS, S.Sh.

Problems in reasoning in the diagnostic process with the aid of  
mathematical machines. *Eksp. khir. i anest.* 6 no.4:3-15 '61.  
(MIRA 14:10)

(DIAGNOSIS) (ELECTRONIC DATA PROCESSING—DIAGNOSIS)

*BYCHOVSKIY, M. L.*

VISNEVSKIJ, A. A.; BYCHOVSKIJ, M. L.; CHARNAS, S. S.

On the possible use of computing machines for diagnostic purposes.  
Gas.lek.cesk 100 no.13:385-389 31 Mr '61.

1. Ustav chirurgie Visnevskeho A.L.V. SSSR.

(AUTOMATIC DATA PROCESSING) (DIAGNOSIS)

BYKHOVSKIY, M. L.

Cybernetics in surgery; the phase interval method in the problem  
of diagnosis. Eksper. khir. i anest. no.2:16-19 '62.  
(MIRA 15:6)

1. Iz Instituta khirurgii imeni A. V. Vishnevskogo (dir. -  
deystvitel'nyy chlen AMN SSSR prof. A. A. Vishnevskiy) AMN SSSR.

(DIAGNOSIS) (CYBERNETICS)

ARTOBOLEVSKIY, I. I.; VISHNEVSKIY, A. A.; BYKHOVSKIY, M. L.

Automatic information system for finding a clinical precedent.  
Eksp. khir. no.3:3-10 '62. (MIRA 15:7)

1. Iz Instituta khirurgii imeni A. V. Vishnevskogo (dir. -  
deystvitel'nyy chlen AMN SSSR prof. A. A. Vishnevskiy) AMN  
SSSR.

(ELECTRONIC DATA PROCESSING) (MEDICINE)

BALAKSHIN, O.B., kand. tekhn. nauk; BYKHOVSKIY, M.L., prof., doktor tekhn. nauk; VOLODIN, Ye.I., kand. tekhn. nauk; GRIGOR'YEV, I.A., kand. tekhn.nauk; DRAUDIN-KRYLENKO, A.T., inzh.; IVANOV, A.G., kand. tekhn.nauk; KOZLOV, M.P., kand. tekhn. nauk; KOROTKOV, V.P., prof.; KOCHENOV, M.I., kand. tekhn.nauk; KUTAY, A.K., kand. tekhn. nauk; MARKOV N.N.,kand. tekhn. nauk; PALEY, M.A., inzh.; RAYEMAN, N.S., kand. tekhn.nauk; ROSTOVYKH, A.Ya., kand. tekhn. nauk; RUMYANTSEV, A.V., kand. tekhn.nauk; SARKIN, I.G., prof.; SMIRNOV, A.S., inzh.; TAYTS, B.A., prof., doktor tekhn. nauk; YAKUSHEV, A.I., prof., doktor tekhn. nauk; NESTEROV, V.D., inzh., nauchnyy red.; CHUDOV, V.A., inzh., nauchnyy red.; GAVRILOV, A.N., doktor tekhn.nauk, prof., red.; BLAGOSKLONOVA, N.Yu., inzh., red. izd-va; SOKOLOVA, T.F., tekhn. red.

[Manufacture of instruments and means of automatic control: a manual in five volumes] Priborostroenie i sredstva avtomatiki; spravochnik v piati tomakh. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit. lit-ry. Vol.1.[Interchangeability and engineering measurements] Vzaimozameniaemost' i tekhnicheskie izmereniia. 1963. 568 p. (MIRA 16:8)  
(Electronic measurements) (Automatic control)

BYKHOVSKIY, M.L. (Moskva)

Cybernetics methods in medicine. Nat. v shkole no.5:5-14 S-0  
'63. (MIRA 16:11)



L 17819-63

BDS

ACCESSION NR: AP3004953

S/0108/63/018/008/0074/0080

AUTHOR: none

TITLE: Nineteenth All-Union Session of NTORiE im. A. S. Popov (see  
"Association") Celebrating the Day of Radio, cl sed on 11 May 1963

SOURCE: Radiotekhnika, v. 18, no. 8, 1963, 74-80.

TOPIC TAGS: conference, session, electronics conference, electronics session

ABSTRACT: The Session included 2 plenary meetings and 18 section meetings. There were 272 reports delivered by Soviet and 12 reports delivered by foreign scientists and engineers. The total number of specialists participating in the Session was 1,800, including 25 foreign representatives. Four reports before the first plenary meeting were made by: V. I. Siforov, Corresponding Member of AN SSR and Chairman of the NTORiE Central Board, on the laws of development of natural sciences and electronics; Academician A. L. Mints on toroidal

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ACCESSION NR: AP3004953

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electron accelerators; Professor G. V. Braude on the 25th anniversary of Soviet TV; and a French engineer, A. Aysberg, on international publications in radio and electronics. Two reports before the closing plenary meetings were made by: M. L. By\*khovskiy, Doctor of technical sciences, on the use of cybernetics in medical diagnoses, and L. P. Krayzmer, Candidate of technical sciences, on the problems of storing information in cybernetical systems. The Section of Theory of Information, under B. R. Levin, heard and discussed 22 reports on coding theory, signal synthesis, increasing the reliability of information, detecting and isolating signals from noise background, noise immunity of reception, correlation analysis, statistics in electronic channels, and accuracy of reliability prognoses. Those participating in the Section work were: L. M. Fink, Yu. S. Lezin, Yu. L. Zorokhovich, Yu. M. Marty\*noy, L. M. Mashbits, L. D. Kislyuk, G. A. Shastova, V. T. Goryainov, V. I. Tikhonov, P. V. Mazurin, I. A. Tsikin, N. P. Khvorostenko, D. D. Kloviskiy, Yu. I. Samoilenko, A. A. Zyuzin-Zinchenko, V. N. Teterev, A. A. Pirogov, M. A. Sapozhkov, I. T. Turbovich, G. I. Tsemmel', O. A. Petrov, Yu. G. Pollyak, G. V. Maly\*shey, G. A. Ball, A. S.

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Shvygin, S. F. Simovskaya, I. V. Sukharevskiy, A. I. Velichkin, V. S. Borodin, Dr. D. A. Haffman (Lincoln Laboratory, MIT), A. I. Alekseyev, B. B. Gurfinkel, A. F. Terpugov, A. F. Fomin, and V. S. Bleykhman. The Section of Cybernetics, under B. S. Pleshman, dealt with reports on the theory of systems, investigation of operations, and recognition of patterns. Participating were: V. M. Berezhnov, B. V. Gnedenko, G. P. Basharin, V. V. Rykov, A. A. Ydovin, A. O. Kravitskiy, A. Ye. Basharinov, N. I. Ananov, K. P. Kirdyashev, A. L. Lunts, V. L. Brailovskiy, V. A. Kondrat'yeva, N. S. Misyuk, N. A. Lepeshinskaya, O. A. Liskovets, and A. S. Mastykin. The Section of SHF Ferrite Devices, under A. L. Mikaelyan, had a report on new waveguide-ferrite devices by A. L. Mikaelyan and M. M. Koblova; a report on a circular waveguide with a longitudinally-magnetized bar by G. I. Veselov; a report on cross-shaped circulators by A. K. Stolyarov, I. P. Tyukov, and V. M. Oranzhereyev; and a report on  $(0.9-10) \times 10^3$ -cps coaxial valve by K. G. Gudkov. The Section of Semiconductor Devices, under Ye. I. Gal'perin, carried reports on tunnel diodes and transistors in pulsed and rf circuits. Participating were: Kochish Miklosh

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ACCESSION NR: AP3004953

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(Hungary), T. M. Agakhanyan, Ladislav Gavlik (Prah), V. N. Konstantinovskiy,  
S. A. Savel'yev, O. A. Cheinokov, I. N. Pusty\*nskiy, V. A. Shalimov, V. V.  
Klimov, N. A. Netsvetaylov, Yu. I. Vorontsov, I. V. Polyakov, V. V.  
Kukushkin, N. A. Khokhlachev, K. F. Berkovskaya, V. L. Kreytser, V. A.  
Il'in, Yu. V. Koval'chuk-Ivanyuk, I. G. Nekrashevich, V. I. Loyko, I. F.  
Savitskaya, D. A. Taymin, L. A. Zubritskiy, G. P. Chursin, G. V. Bagrov,  
Ye. G. Belen'kov, and V. V. Florzenko. Orig. art. has: no figure, formula, or  
table.

ASSOCIATION: Nauchno-tekhnicheskoye obshchestvo radiotekhniki i  
elektrosvyazi (Scientific and Technical Society of Radio Engineering and  
Electrocommunication)

SUBMITTED: 00

DATE ACQ: 06Sep63

ENCL: 00

SUB CODE: GE

NO REF SOV: 000

OTHER: 000

Card 4/4

BYKHOVSKI, M.L. (Moscow)

"Sensitivity and dynamical accuracy of control systems"

report presented at the 2nd All-Union Congress on Theoretical and Applied  
Mechanics, Moscow, 29 January - 5 February 1964

L 33548-65 EWP(k)/EWT(d)/EWP(h)/EWP(l)/EWP(v) Pf-4

ACCESSION NR: AR5005691

S/0278/64/000/009/B113/B113

SOURCE: Ref. zh. Tekhnologiya mashinostroyeniya. Svodnyy tom, Abs. 9B709 26  
B

AUTHOR: Bykhovskiy, M. L.

TITLE: A self-adjusting programmed control system with statistical processing of information (electronic model)

CITED SOURCE: Sb. Tochnost', vzaimozamenyayemost' i tekhn. izmereniya v mashinost. M., Nauka, 1964, 38-47

TOPIC TAGS: automatic control system, programmed control, selfadjusting control system, statistical data processing, electronic simulation, iteration method, systematic error component, optimal iteration limit 14

TRANSLATION: The article describes a control system combining the principles of programmed control and self-adjustment. The accuracy of the system's operation was accepted as a criterion of self-adjustment. The author presents the mathematical principles of the system's operation. The self-adjustment function consists of isolating the systematic component of errors committed in repeatedly recurring work cycles and

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ACCESSION NR: AR5005691

making the appropriate corrections in the program. Simulation of the self-adjustment system demonstrated, relative to the iteration method (i. e. successive correction of the program from cycle to cycle), the existence of a definite threshold number of iterations beyond which the error in the system's operation will increase. A mathematical expression is given to describe a criterion employed when defining the optimal number of iterations. Block diagrams are presented for the discussed system and its electronic model. The systematic and random error components are combined in the model, and the systematic component is then isolated by means of an iteration process. The principal circuitry of the model, minus the auxiliary relay control blocks, is illustrated. The model was operated under both automatic and manual control. Analysis demonstrated that the systematic error component is fully corrected after 2-3 iterations. Successive oscillograms, taken during such self-adjustments, are illustrated. It is suggested that the evolved models, mathematical systems, as well as information processing and automatic optimization systems, can be employed in real units. Twelve illustrations. V. Manilov

SUB CODE: DP; IE

ENCL: 00

Card 2/2

02130-55 EWT(d)/EPF(n)-2/EP(1) Po-4/Pq-4/Pg-4/Pae-2/Fu-4/Pk-4/1-4 IJP(c)

ACCESSION NR: AP5002690

S/0280/64/000/006/0130/0143

AUTHOR: Bykhovskiy, M. I. (Moscow)

TITLE: Sensitivity and dynamic accuracy of control systems

51  
B

SOURCE: AN SSSR. Izvestiya. Tekhnicheskaya kibernetika, no. 6, 1964, 130-143

TOPIC TAGS: automatic control system, automatic control theory, automatic control design, automatic control

ABSTRACT: A theoretical solution of the problem of the system behavior when its parameters vary is offered. The system sensitivity to a variation of its parameters is presented by "parameter influence coefficients" (H. F. Meissinger, Western Joint Computer Conference, San Francisco, May 1960); differential equations (2.6) for these coefficients are set up, and their properties are specified. Based on these properties, the author's "method of transformed systems" (published elsewhere) is further developed. The transformed systems

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ACCESSION NR: AP5002690

6  
permit a physical realization -- either by changing connections in the system in question or on an analog computer -- of the influence coefficients. In the case of nonlinear circuits, the transformed systems will be linear; however, they will include variable parameters -- definite functions of time derived from corresponding dynamic characteristics of the nonlinear elements of the systems. Application of the transformed-system method to closed-loop automatic-control systems is considered. Also, application of the sensitivity theory to (a) the problems of dynamic accuracy, (b) the optimal and adaptive system synthesis, and (c) the learning-model synthesis is discussed. Orig. art. has: 11 figures and 62 formulas.

ASSOCIATION: none

SUBMITTED: 13Mar64

ENCL: 00

SUB CODE: IE, DP

NO REF SOV: 010

OTHER: 008

Card 2/2

VISHNEVSKIY, N.L.

Theoretical fundamentals of instruction in diagnostic systems.  
Eksper. khir. i anest. 9 no.4:12-22 J1-Ag '64.

(MIRA 18:3)  
1. Institut khirurgii imeni Vishnevskogo (dir. - deystvitel'nyy  
chlen AMN SSSR prof. A.A. Vishnevskiy) AMN SSSR, Moskva.

VISHNEVSKIY, A.A.; BYKHOVSKIY, M.L.; VINOGRADOV, V.V.; DANILOV, M.V.;  
KOCHIASHVILI, V.I.; PO. TAVSKIY, B.M.

Use of computing machines in the diagnosis of mechanical jaundice.  
Eksper. khir. i anest. 9 no.4:22-28 JI-Ag '64. (MIRA 18:3)

1. Institut khirurgii imeni Vishnevskogo (dir. - deystvitel'nyy  
chlen AMN SSSR prof. A.A. Vishnevskiy) AMN SSSR, Moskva.

ACCESSION NR: AP4012879

S/0248/64/000/002/0042/0049

AUTHOR: Vishnevskiy, A. A.; Artobolevskiy, I. I.; Byzdovskiy, M. L.

TITLE: Design principles of diagnostic machines

SOURCE: AMN SSSR. Vestnik, no. 2, 1964, 42-49

TOPIC TAGS: electronic computer, URAL-2 electronic computer, diagnostic system, computer memory, logic system, congenital heart defect, case history punched card, deterministic logic, probability logic, disease diagnostic system, diagnostic system possible application, heart catheterization, case history standardization

ABSTRACT: A diagnostic system based on electronic computer URAL-2 has been developed by the cybernetics laboratory of the reporting association. This system is applicable to any disease and consists of a memory of accumulated medical experience and a logic system which compares the symptoms of a given patient with symptoms and syndromes in the memory. Congenital heart defects are used as an example. Two hundred symptoms and the 50 most common surgically correctable anomalies are stored in the memory. A punched card is prepared for

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ACCESSION NR: AP4012879

each case history showing symptoms and their frequency. To establish a diagnosis, the card is fed to the computer and the symptoms are compared with the information in the computer memory. If the symptoms coincide with syndromes in the memory, the computer gives the disease name as the diagnosis. If the symptoms do not coincide with any syndromes, then each symptom is compared with the 200 symptoms in the memory. All impossible diseases are eliminated leaving 5-6 possibilities. The correct diagnosis is then found by probability logic with mathematical conversions of the relative weight and frequency of each symptom. Diagnoses for 200 cases over the past 2 yrs have been 80-90% correct depending on type of congenital heart defect. This diagnostic system is a dynamic process with the computer indicating when additional data is needed. The patient is subjected to fewer tests and the computer can make the final diagnoses in cases which ordinarily would require heart catheterization. This diagnostic system is applicable to any disease and can also be used for prognosis in serious traumatic injuries. Orig. art. has: 1 table and 2 figures.

ASSOCIATION: Institut Khirurgii im. A. V. Vishnevskogo AMN SSSR,  
Moscow (Institute of Surgery, AMN SSSR)

Card 2/3

L 3072-66 EWT(d)/EWT(1)/FCC/T IJP(d) GW

ACCESSION NR: AP5016517

UR/0050/65/000/007/0003/0010  
551.509.3

22  
30  
B  
55

AUTHORS: Bykhovskiy, M. L. (Doctor of technical sciences, Professor); Gruza, G. V.  
(Candidate of physico-mathematical sciences)

TITLE: Principles of an objective method for weather forecasting based on information probability logic

16, 55

SOURCE: Meteorologiya i gidrologiya, no. 7, 1965, 3-10

TOPIC TAGS: weather forecasting, information analysis, probability

55, 12

ABSTRACT: It is assumed that the task of forecasting consists of a selection of a terminal number of previously formulated predictions corresponding to several weather phases. When the number of phases is two, we have to do with alternative predictions--the simplest type of phase prediction. The authors describe an algorithm suitable for establishing a method of weather forecasting. This was developed for medical diagnosis and was used successfully at the Institut khirurgii im. V. A. Vishnevskogo (Surgical Institute) in Moscow. The method is based on the information-probability approach to the problem of recognition. Conditional

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ACCESSION NR: AP5016517

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probability and information measure of predicatable characteristics are first considered. From these it follows that the probability of any weather phase may be computed for any group of observed characteristics. The probability of the phase may be arranged in decreasing order, the most probable phase coming first, but this does not supply an absolute solution. A system of thresholds may be introduced, one for each weather phase, and an absolute solution may then be obtained. An example of applicability is described. The procedure most frequently successful is the following: 1) after all variables have been made discrete, compute the information or communication index, 2) arrange the variables in order of decreasing communication (linkage), 3) make predictions according to one variable most closely linked to the phase function, 4) make predictions according to pairs of variables and select the best pair, and 5) test the best pair of variables in combination with the remaining pairs and find the best triplet. This process is continued until no appreciable improvement is obtained in results. Orig. art. has: 1 table and 17 formulas.

ASSOCIATION: Sredneaziatskiy nauchno-issledovatel'skiy gidrometeorologicheskiy institut (Central Asian Scientific Research Hydrometeorological Institute)

55

Card 2/3

L 3072-66

ACCESSION NR: AP5016517

SUBMITTED: 26Mar65

ENCL: 00

SUB CODE: ES, MA

NO REF SOV: 008

OTHER: 001

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Card 3/3



L 29385-66 EWT(d)/EWP(1) IJP(c) GG/BB  
ACC NR: AP6017993

SOURCE CODE: UR/0413/66/000/010/0098/0098

INVENTOR: Bykhovskiy, M. L.

ORG: none

TITLE: <sup>16c</sup> Diagnostic computer. Class 42, No. 181880 [announced by Institute of Surgery im. A. V. Vishnevskiy, AMN SSSR (Institute khirurgii AMN SSSR)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 10, 1966, 98

TOPIC TAGS: special purpose computer, analog digital computer, electronic computer

ABSTRACT: A computer for diagnosis consists of a memory unit, arithmetic unit, control unit, and an input/output unit. The computer is based on analog elements.

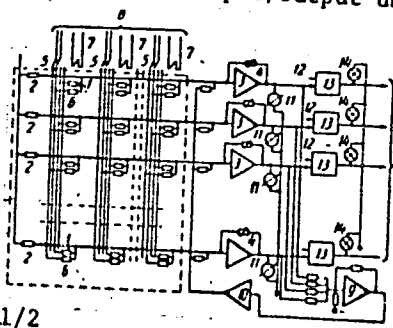


Fig. 1. Diagnostic computer

1, 2, and 6 - Memory resistors for storing the information quantity coefficients; 3 - operational amplifier; 4 - nonlinear element; 5 - toggle switch; 7 - relay; 8 - symptom input lines; 9 - normalizing amplifier; 10 - high gain amplifier; 11 - indicators; 12 - threshold voltage inputs; 13 - comparator circuit; 14 - indicator.

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UDC: 681.142.001.57:616-07

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ACC NR: AP6017993

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Its memory consists of resistors which store the information quantity coefficients pertaining to disease symptoms entered either through toggle switches or relays. The memory outputs are connected to summing operational amplifiers whose outputs in turn are applied to indicators and comparator circuits. The comparators have threshold voltages on their inputs and indicators on their outputs. The feedback loop from the summing operational amplifiers contains a summing amplifier and a dc current amplifier driving the inputs of the above summing operational amplifiers. Orig. art. has: 1 figure.

[BD]

SUB CODE: 09/ SUBM DATE: 21Apr65/ ATD PRESS: 5008

Card 2/2 CC

ACC NR: AT6029242

SOURCE CODE: UR/0000/66/000/000/0344/0360

AUTHOR: Bykhovskiy, M. L.

ORG: none

TITLE: Sensitivity of dynamic systems

SOURCE: Vsesoyuznaya konferentsiya-seminar po teorii i metodam matematicheskogo modelirovaniya. 4th, Kiev, 1964. Vychislitel'naya tekhnika v upravlenii (Computer technology in control engineering); trudy konferentsii. Moscow, Izd-vo Nauka, 1966, 344-360

TOPIC TAGS: self adaptive control, error prediction, error analysis, self teaching system, linear automatic control system, automatic control theory

ABSTRACT: The physical embodiment of automatic control systems is frequently handicapped by uncontrollable variations of parameters caused by the "aging" of certain elements, the interaction effects of various media and environmental effects. Adaptive control systems are designed to change the system's parameters so that the adaptivity of the system becomes responsive to the environment. The sensitivity of the system with respect to parameters  $\Delta q_1, \Delta q_2, \dots, \Delta q_m$  is said to be the coefficient of influence. The equation of the type

$$\left(\frac{\partial \Phi}{\partial x^{(n)}}\right)_{\Delta q=0} T_l^{(n)} + \left(\frac{\partial \Phi}{\partial x^{(n-1)}}\right)_{\Delta q=0} T_l^{(n-1)} + \dots + \left(\frac{\partial \Phi}{\partial x}\right)_{\Delta q=0} T_l = -\left(\frac{\partial \Phi}{\partial \Delta q_l}\right)_{\Delta q=0}$$

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ACC NR: AT6029242

is the differential equation for the sensitivity coefficients. Here it is set that all  $\Delta q$  are zero, and that function  $\phi$  does not depend on  $\Delta q_i$ . This type of equation is always linear. In a complex domain, the coefficient of sensitivity is regarded as an operator defined by the left half of the equation. The method of converted (or transformed) systems has been previously described by the author. It involves the construction of equations defining the complex domain where the coefficient of influence includes two terms: one defining the excitation function, of the system, the other defining the system *per se*. The essence of this approach is physical embodiment of a converted (transformed) system, where the response of the given system to the excitation is the sought coefficient of influence. The essential difference between this method and conventional electrical simulation methods is in that the transformed system, rather than the system *per se* is simulated. The application of the method of transformed circuits to closed-loop automatic control systems is described. Postulates of the theory of sensitivity can be successfully applied to the design of adaptive control systems as well as to self-teaching machines. A specimen calculation for the determination of the sensitivity of linear dynamic systems by inversion of the transformed circuits is included. Orig. art. has: 14 figures, 61 formulas.

SUB CODE: 09.12/

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OTH REF: 002

Card 2/2

BYKHOVSKIY, N.S.

~~Working methods of the stakhanovite V.M.Sobolev.~~ Leg.prom. 7 no.8:21-22 Ag  
'47. (MIRA 6:11)

1. Fabrika "Rot-Front."

(Fur)

BYKHOVSKIY, S.I.; VASIL'YEV, V.G., inzh.; KHORDAS, G.S., inzh.

High pressure air conditioning system. Sudostroenie 25 no.7:12-14  
Jl '59. (MIRA 12:12)  
(Ships--Air conditioning)

BYKHOVSKIY, S.V.

Principal problems of labor hygiene in the extraction of  
radioactive minerals. Med. rad. 5 no.1:60-67 Ja '60.

(MIRA 15:3)

(MINING ENGINEERING--HYGIENIC ASPECTS)

(RADIOACTIVE SUBSTANCES--PHYSIOLOGICAL EFFECTS)

BYKHOVSKIY, V., doktor tekhn.nauk; POLYAKOV, S., doktor tekhn.nauk

Problem of designing multistory buildings in seismic  
areas. Zhil. stroi. no.9:10-11 '65.

(MIRA 18:11)



BYKHOVSKIY, V.A.

Seismic effect of explosions on structures. Trudy NII osn. i fund.  
no.12:51-71 '48. (MLRA 7:11)  
(Seismometry) (Building)

BYKHON'SKIY, V. A.

PA 65/49147

USSR/Engineering - Buildings  
Seismology Aug 49

"Vibration Platform With Program Photoelectric Control," B. Ye. Telishevskiy, V. A. Bykhovskiy, 62 pp

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 8

Describes new machine for testing models of structures reinforced against earthquakes. It is possible to give the platform of the machine any desired motion, given the time/displacement curve of that motion. This is effected through a special "program disk" which actuates a photo-electric relay controlling a hydraulic oscillator. 65/49147

USSR/Engineering - Buildings (Contd) Aug 49

Includes photograph of machine, and four diagrams Submitted 6 Jan 49.

65/49147

SOV/112-57-6-12101

Translation from: Referativnyy zhurnal. Elektrotehnika, 1957, Nr 6, p 55 (USSR)

AUTHOR: Bykhovskiy, V. A.

TITLE: Tentative Solution of Some Problems Pertaining to the Seismic Durability of Buildings and Engineering Structures by the Experimental Investigation of Their 3-Dimensional Models (Opyt resheniya nekotorykh voprosov seysmostoykosti zdaniy i inzhenernykh sooruzheniy putem eksperimental'nogo issledovaniya ikh prostranstvennykh modeley)

PERIODICAL: Tr. koordinats. soveshchaniya po seysmostoyk. str-vu. 1954, Yerevan, AS Arm SSR, 1956, pp 7-31

ABSTRACT: Bibliographic entry.

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*Bykhovskiy, V.A.*

GOL'DENBLAT, I.I., doktor tekhn.nauk, prof., red.; BYKHOVSKIY, V.A., kand. tekhn.nauk, red.; KOTIK, B.A., red.i:sdatel'stva; EL'KINA, E.M., tekhn.red.

[Building in areas subject to earthquakes] Stroitel'stvo v seismicheskikh raionakh. Pod red.I.I.Gol'denblata i V.A.Bykhovskogo. Moskva, Gos.izd-vo lit-ry po stroit.:i arkhit., 1957. 169 p.  
(MIRA 10:12)

1. Nauchno-tekhnicheskoye obshchestvo stroitel'noy promyshlennosti SSSR.  
(Earthquakes and building)

97-10-4/14

*BYKHOVSKIY, V.A.*  
AUTHORS: Korchinskiy, I. L., Dr. of Mech. Sciences, Professor; Sudnitsyn, A.I. and Bykhovskiy, V.A. (Candidates of Mech. Sciences).

TITLE: Calculation of Reinforced Concrete Industrial Chimneys Built in Seismic Regions. (*Raschet zhelezobetonnykh dymovykh trub, sooruzhayemykh v seysmicheskikh rayonakh*).

PERIODICAL: Beton i Zhelezobeton, 1957, Nr.10. pp. 396 - 402. (USSR).

ABSTRACT: Chimneys of industrial buildings built in siesmographic areas are very expensive. Investigations were carried out after an earthquake in Japan in 1948 into the destruction of reinforced concrete chimneys in Fukun. Table 1 shows that in the case of short chimneys (15 - 20m ) cracks usually appear in the base, and in the case of taller chimneys (29 - 52 m), they appear in the upper parts. The method of calculations of chimneys built in siesmographic areas is published in Ts.N.I.P.S. The calculation is based on the theory that the rocking of the ground produces the same effect as an earthquake, this is according to the thesis of A. I. Sudnitsyn "The Rocking of Stacks of Varying Cross-Section, With Allowance for Displacement Deformation and Support Resistance". Fig.1 shows a graph of the relationship of the dynamic coefficient and of amplitudes of rocking.

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Calculation of Reinforced Concrete Industrial Chimneys Built in  
Seismic Regions

Fig.2 shows nomograms for the determination of parameter  $V_{\text{Rn}}$  for various types of rocking. Fig.3 illustrates nomograms for the determination of the coefficients  $C_2/C_1$  and  $C_3/C_1$  for various types of rocking. V.S.Pavlyk has made a comparative calculation of a chimney stack in Aschabad affected by an earthquake. The calculation was based on the method recommended by P.S.P.101-51 Ts.N.I.P.S. The results show that the upper parts of the stack are more affected when the rocking is of the second and third "type", as shown on the diagram. For the calculation of reinforced concrete chimney stacks indicated in this article, stress diagrams were used according to Fig.4, representing the distribution of stresses,height of the stack and type of rocking. Fig. 5 shows bending diagrams of transfer stresses and bending moments occurring in a reinforced concrete stack 80 m high. Fig.6 gives curves of bending moments due to earthquake action on a chimney stack. Calculations of amplitudes and forms of rocking affecting stacks are given. Table 3 gives coefficients for various types

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97-10-4/14

Calculation of Reinforced Concrete Industrial Chimneys Built in  
**Seismic Regions**

of rocking, and an example of calculation determining the rocking is presented. Table 4 gives various values for calculations. Finally, siesmographic forces are calculated and coefficients which are used are explained with the aid of Tables No.5, 6 and 7. There are 7 Tables, 6 Figures, 5 References: 1 Japanese, and 4 Russian.

**AVAILABLE:** Library of Congress.

Card 3/3

1. Earthquake resistant structures-Design
2. Chimneys-Design
3. Reinforced concrete-Applications

*BYKHOVSKIY, V.A.*  
BYKHOVSKIY, V.A.; DZHABUA, Sh.A.; DUZINKOVICH, S.Yu.; CHURAYAN, A.L.

New "Standards and regulations for building in seismic regions."  
Stroi. prom. 35 no.12:30-33 D '57. (MIRA 11:1)  
(Earthquakes and building)



ONISHCHIK, L.I., prof., doktor tekhn.nauk; KORCHINSKIY, I.L., prof., doktor tekhn.nauk; BYKHOVSKIY, V.A., kand.tekhn.nauk; POLYAKOV, S.V., kand.tekhn.nauk; DYKHOVICHNAYA, N.A., inzh.; YUSFIN, I.M., inzh.; DUZINKOVICH, S.Yu., inzh., nauchnyy red.; MUNITS, A.P., red.isd-va; BOROVNEV, N.K., tekhn.red.

[Strength analysis of bearing masonry walls of buildings to be constructed in seismic regions and instructions for performing the analysis] Primer rascheta na prochnost' kamennykh nesushchikh sten sdanii, vosvodimyykh v seismicheskiykh rayonakh, i ukazaniya k primeru rascheta. Moskva, Gos. izd-vo lit-ry po stroit., arkhitekt. i stroit. materialam, 1958. 24 p. (MIRA 12:2)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut stroitel'nykh konstruktsey. 2. Tsentral'nyy nauchno-issledovatel'skiy institut stroitel'nykh konstruktsey Akademii stroitel'stva i arkhitektury SSSR (for Onishchik, Korchinskiy, Bykhovski, Polyakov).
3. Proyektnyy institut No.5 Ministerstva stroitel'stva RSFSR (for Dykhovichnaya, Yusfin).

(Earthquakes and building) (Walls)

GOL'DENBLAT, I.I., prof., doktor tekhn.nauk, red.; BYKHOVSKIY, V.A., kand.  
tekhn.nauk, red.; SNITKO, I.K., doktor tekhn.nauk, nauchnyy red.;  
GORYACHEVA, G.V., red.isd-va; RUDAKOVA, N.I., tekhn.red.

[Method of a seismic design of buildings and structures; a collection  
of articles] Metody rascheta zdaniy i sooruzheniy na seismostoi-  
kost'; sbornik statey. Pod red. I.I. Gol'denblata i V.A. Bykhovskogo.  
Moskva, Gos. izd-vo lit-ry po stroit., arkhit. i stroit. materialam,  
1958. 153 p. (MIRA 12:2)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut stroitel'-  
nykh konstruktsiy.

(Earthquakes and building)

NASONOV, V.N.; BYKHOVSKIY, V.A.; DZHABUA, Sh.A.; DUZINKEVICH, S.Yu.;  
KORCHINSKIY, I.L.; POLYAKOV, S.V. ; STEPANYAN, V.A.

Ways of lowering construction costs of industrial buildings to be  
erected in seismic regions. Prom.stroi. 37 no.8:20-23 Ag '59.  
(MIRA 12:11)  
(Construction industry—Costs)      (Earthquakes and building)

BYKHOVSKIY, V. A.: GOLDENBLAT, Y. I.: KORCHINSKIY, I. L.

"Design of Earthquake-Proof Building Structures in the USSR."

report submitted for the Second World Conference on Earthquake Engineering, Tokyo and Kyoto, Japan, 11-18 July 1960.

Bykhovskiy, V. A.

PHASE I BOOK EXPLOITATION SOV/4658

Akademiya stroitel'stva i arkhitektury SSSR. Institut stroitel'nykh konstruksiy

Issledovaniya po seysmostoykosti zdaniy i sooruzheniy; sbornik statey (Research on Earthquake-Resistant Buildings and Constructions; Collection of Articles) Moscow, Gosstroyizdat, 1960. 246 p. 5,000 copies printed.

Sponsoring Agency: Akademiya stroitel'stva i arkhitektury SSSR. Tsentral'nyy nauchno-issledovatel'skiy institut stroitel'nykh konstruksiy (TsNIISK).

Eds., I.I. Gol'denblat, Doctor of Technical Sciences, Professor; I.L. Korchinskiy, Doctor of Technical Sciences, Professor; and V.A. Bykhovskiy, Candidate of Technical Sciences; Scientific Ed.: L.Ye. Temkin, Engineer; Ed. of Publishing House: I.S. Borodina; Tech. Ed.: L.M. Osenko.

PURPOSE: This collection of articles is intended for design and construction engineers, scientific workers, and aspirants.

COVERAGE: The book contains articles on experimental and theoretical investigations of the earthquake stability of buildings and structures carried out at the Central Scientific Research Institute of Structural Parts of the Academy of Building and  
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Research on Earthquake-Resistant Buildings (Cont.)

SOV/4658

Architecture USSR. The foreign and Soviet norms in force for calculating seismic effects in the design and construction of buildings and structural parts are compared, and also problems in the seismic zoning of the USSR are examined. One article describes an investigation of the strength of steel subjected to several recurrent loadings and of the dynamic behavior of building models. Problems in the determination of the free oscillations of buildings and in the distribution of horizontal seismic loads between the cross walls of buildings are also discussed. The projected "Instructions for Determining the Computed Seismic Loads for Buildings and Structures" based on the current "Norms and Rules for Construction in Seismic Regions" (SN 8-57) are given. No personalities are mentioned. References accompany individual articles.

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Korchinskiy, I.L. [Professor, Doctor of Technical Sciences]. Comparison of Design Norms in Force in the USSR and in Other Countries for Calculating Seismic Effects	5

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Research on Earthquake-Resistant Buildings (Cont.)

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This article gives the theoretical basis of the new dynamic method of designing buildings and structures to withstand seismic effects. This method has been adopted in the USSR and is formulated in the "Norms and Rules of Construction in Seismic Regions, SN 8-57." The author compares it with methods used in other countries, especially in the USA and Japan, and compares the values of seismic coefficients accepted in various countries (Table 1). He concludes that the proposed design method will not result in any change in construction costs in the USSR, and that it will at the same time make it possible to increase the seismic stability of structures. He points out that the method formulated in the California Code for determining design seismic forces is close to the method, which serves as the basis for SN 8-57.

Bykhovskiy, V.A. [Candidate of Technical Sciences] Changes in the Seismic Regionalization of the USSR and Evaluation of Individual Localities 25

The article discusses the seismic regions of the USSR and the changes in the seismic regionalization of the USSR which have taken place in the last 20 years. These changes are reflected in the Norms and rules for seismic construction in the Soviet Union. There are seven tables of data: Table 1 gives approximate data on the seismic regions of the USSR, and their seismic magnitudes; Table

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Research on Earthquake-Resistant Buildings (Cont.)

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2, the populations of the regions; Table 3, the distribution of cities and populated localities relative to seismic rating (from 6 to 9 points). Table 4 shows the increase in the number of seismic control stations and the change in their seismicity; Table 5 lists those cities whose seismicity changed or remained unchanged according to data given in the norms and rules for aseismic construction from 1940 to 1957; and Tables 6 and 7 give data on strong-motion earthquakes from 1921 to 1959. The author concludes that a comparison of the norms and rules of SN 8-57 with those in force in 1940-1943 indicates that the area of possible future earthquakes in the USSR has been broadened, that increasing the number of regions with estimated 6 and 7 point magnitudes is not justified by the available data, and that there are not yet sufficient grounds for increasing the number of regions with estimated seismic magnitudes of 8 to 9 points.

Favlyk, V.S. [Engineer]. Determining Free Oscillations of Buildings With Load-Carrying Walls 35

Becheneva, G.V. [Engineer]. Strength of Steel Subjected to a Few Recurrent Loadings 60

... [Candidate of Technical Sciences]. Problem of Sectionalization of Continuous Foundations With Antiseismic Breaks Under Brick Buildings	92
... [Candidate of Technical Sciences]. Experimental Investigation of Dynamic Behavior of Models With Yielding and Rigid Foundations	103

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GOL'DENBLAT, I.I., doktor tekhn.nauk; KORCHINSKIY, I.L., doktor tekhn.  
nauk; BYKHOVSKIY, V.A., kand.tekhn.nauk

Designing and calculating earthquake-proof construction elements.  
Izv. ASiA no. 3:95-107 '60. (MIRA 13:12)  
(Earthquakes and building)

BYKHOVSKIY, V.A

Revision of the effective "Norms and regulations for building in seismic regions" (SN 8-57). Prom. stroi. 38 no.9:3-6 '60.

(Earthquakes and building)

(MIRA 13:9)

KORCHINSKIY, I.L., prof., doktor tekhn. nauk; BYKHOVSKIY, V.A.,  
kand. tekhn. nauk; PAVLYK, V.S., inzh.; SOLOVEY, I.N.;  
SUMINOV, N.A.; KOTOVA, L.S., inzh.; SHITOVA, L., red.  
izd-va; RUDAKOVA, N.I., tekhn. red.

[Instructions for determining the seismic load for vertical  
equipment and examples of calculation] Ukazania po oprede-  
leniiu seismicheskoi nagruzki dlia vertikal'nykh apparatov i  
primery rascheta. Moskva, Gosstroizdat, 1961. 30 p.

(MIRA 15:8)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut  
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vatel'skiy institut stroitel'nykh konstruksiy Akademii stroi-  
tel'stva i arkhitektury SSSR (for Korchinskiy, Bykhovskiy,  
Pavlyk). 3. Gosudarstvennyy institut po proyektirovaniyu nef-  
tyanykh zavodov pri Gosudarstvennom planovom komitete Soveta  
Ministrov SSSR (for Solovey, Suminov, Kotova).  
(Earthquakes and building)

KORCHINSKIY, I.L., prof., doktor tekhn. nauk; POLYAKOV, S.V., doktor tekhn. nauk; BYKHOVSKIY, V.A., kand. tekhn. nauk; PAVLYK, V.S., inzh.; YUSFIN, I.M., inzh.; AVEDIKOVA, S.A., inzh.; IFTINKA, G.A., red. izd-va; GOL'BERG, T.M., tekhn. red.

[An example of earthquake design of a multi-story frame building with and without enclosure walls with attached instructions] Primer rascheta mnogoetazhnogo karkasnogo zdaniia so stenovym zapolneniem i bez nego na seismicheskie vozdeistviia i ukazaniia k primeru rascheta. Moskva, Gos. izd-vo lit-ry po stroit., arkhitekt. i stroit. materialam, 1961. 66 p. (MIRA 14:11)

1. Tsentral'nyy nauchno-issledovatel'skiy institut stroitel'nykh konstruksiy Akademii stroitel'stva i arkhitektury SSSR (for Korchinskiy, Polyakov, Bykhovskiy, Pavlyk). 2. Proyektnyy institut No.5 Ministerstva stroitel'stva RSFSR (for Yusfin, Avedikova). (Earthquakes and building)