"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

The Possible Cause of the Change in the Relationship Between the Sun and the Terrestrial Atmosphere

S/050/60/000/07/02/002
B019/B063

82048

that solar activity has different effects on atmospheric circulations. Magnetic storms on the Sun had different effects. Next, the author gives data on violent and very violent magnetic storms between 1900 and 1939. The examples given here, supplemented by various diagrams (Figs. 1 and 2), indicate that an increase in solar activity may have different effects upon the processes taking place in the lower strata of the atmosphere. Mention is made of M. S. Eygenson's (Ref. 7) and A. I. Ol's (Ref. 4) discovery of cyclic variations in the hardness and direction of the corpuscular radiation of the Sun, and it is noted that the type of change in the relationship between the Sun and the atmosphere is thus also dependent on the rotation of the Sun. This hypothesis is now being verified with material from the International Geophysical Year. There are 2 figures and 7 Soviet references.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

VITEL'S, L.A.

Solar calendar of ultrapolar processes. Trudy GGO no.90:116-129 '60. (MIRA 13:6)
(Sun) (Meteorology)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

Vitels, A. N.

PHASE I BOOK EXPLOITATION SOV/4192
SOV/2-S-90

Leningrad. Glavnaya geofizicheskaya observatoriya

Voprosy sinopticheskoy klimatologii (Problems in Synoptic Climatology) Leningrad, Gidrometeoizdat, 1960. 154 p. (Series: Its: Trudy, vyp. 90) Errata slip inserted. 1,100 copies printed.

Additional Sponsoring Agency: USSR. Glavnoye upravleniye gidrometeorologicheskoy sluzhby.

Ed. (Title page): O. A. Drozdov, Doctor of Geography; Ed. (Inside book): V. S. Protopopov; Tech. Ed.: M. I. Braynina.

PURPOSE: The publication is intended for meteorologists and climatologists.

COVERAGE: This is a collection of 11 articles published as No. 90 of the Transactions of the Main Geophysical Observatory imeni A. I. Voyeykov

Card 1/4

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

and dealing with problems of synoptic climatology. Individual articles are concerned with the succession of synoptic processes as the basic for forecasting, atmospheric circulation over China, frequency of typhoons over China, and various processes of the eastern and western forms of atmospheric circulation. References accompany each article.

TABLE OF CONTENTS:

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

Problems in Synoptic Climatology SOV/4192

Spitsyna, N. L. Application of Some General Laws of Cyclone Movement to Those Cyclones Which Cause the Danger of Flood on the Neva River

149

AVAILABLE: Library of Congress

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JA/cdw/ec
9-15-60

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

VITEL'S, L.A.

PHASE I BOOK EXPLOITATION SOV/3121

3(7)

Leningrad. Glavnaya geofizicheskaya observatoriya

Vopросy sinopticheskoy klimatologii i geliogeofiziki (Problems of Synoptic Climatology and Heliogeophysics) Leningrad, Gidrometeoizdat, 1959. 81 p. (Series: Its: Trudy, vyp. 89) Errata slip inserted. 1,200 copies printed.

Sponsoring Agency: USSR. Glavnoye upravleniye gidrometeorologicheskoy sluzhby.

Ed. (Title page): L.A. Vitel's, Candidate of Geographical Sciences; Ed. (Inside book): Yu.V. Vlasov; Tech. Ed.: N.V. Volkov.

PURPOSE: These articles are intended for geophysicists and meteorologists in the field of long-range weather forecasting.

COVERAGE: This is a collection of 8 articles in the field of synoptic climatology with emphasis on the methodology of long-range forecasting and problems in relation to heliophysics in relation to weather. An analysis is given of the results obtained in studies conducted in the transfer of moisture over European USSR and the use of the results obtained in quantitative precipitation forecasting. Problems in the formation of thermal anomalies in the USSR, taking into account the inertia of the thermal regime, macrocirculation, and heliogeophysical relations, are discussed. Forecasting the level of the Caspian Sea for the coming ten-year period on the basis of expected solar activity is attempted. Problems in the verification of long-range weather forecasts are also discussed. References accompany individual articles.

TABLE OF CONTENTS:

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Card 3/3

3

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

VITEL'S, V.L.

Testing and adjusting the vibrating converters for electronic potentiometers. Bum.prom. 34 no.6:10-11 Je '59.
(MIRA 12:10)

1. Segezhskiy tsellyulozno-bumazhnyy i derevoobrabatyvayushchiy kombinat.
(Paper industry--Equipment and supplies)
(Potentiometer)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

KOROL'KOV, I.I.; KAL'MANOVICH, S.L.; VITEL'S, V.L.; EFROS, I.N.

Introducing automatic control for the stabilization of hydrolysis processes. Gidroliz.i lesokhim.prom. 13 no.4: 11-14 '60. (MIRA 13:7)

1. Nauchno-issledovatel'skiy institut gidrolizhnoy i sul'fitno-spirtovoy promyshlennosti (for Kal'manovich). 2. Segezhskiy gidrolizhnyy zavod (for Efros).
(Segezha--Hydrolysis) (Automatic control)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

VITEL'S, V.L.

Regulator of pulp concentration equipped with an induction pickup. Bum.prom. 35 no.6:16-18 Je '60. (MIRA 13:7)

1. Nachal'nik kontrol'no-izmeritel'nykh priborov i avtomatiki Segezhskogo kombinata.
(Segezha--Paper industry--Equipment and supplies)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

VITEL'S, V.L.

Measuring and recording device of a papermaking machine. Bum.prom. 35 no.4:20-22 Ap '60. (MIRA 13:10)

1. Nachal'nik tsekha kontrol'no-izmeritel'nykh priborov i avtomatiki Segezhdkogo tsellyulozno-bumazhnogo i derevoobrabatyvayushchego kombinata.

(Segezha--Papermaking machinery)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

POLAND/Chemical Technology - Cellulose and Its Derivatives. H.
Paper.

Abs Jour : Ref Zhur - Khimiya, No 16, 1958, 56086

Author : Bukala, Burchik, Viten.
Inst : -
Title : Side Products in the Cellulose-Paper Industry. I. Investigation of a Crude Turpentine Composition (Sulfate Process). 2. Separation of Camphene.

Orig Pub : Przegl. papieru, 1957, 13, No 12, 360-364

Abstract : Turpentine is one of the side products in the sulfate processing of cellulose, and it contains 1.5 - 1.7% of SO_2. Its composition was established by means of fractional distillation, and was found to contain: cymene (87.1%), dl-camphene (1.36%), other terpenes (0.86%) and fractions not steam distillable (7%). The camphene was isolated in a crystalline form. The presence of alpha pinene, beta- and gamma-terpines in the mixture

Card 1/2

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

BELEN'KIY, B.G.; VITENBERG, A.G.; D'YAKONOV, I.A.

Use of 1,2,3-tris-(2-cyanoethoxy)propane as a stationary phase for gas-liquid chromatography. Izv.AN SSSR. Ser.khim. no.1:193-195 Ja '64. (MIRA 17:4)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR i Leningradskiy gosudarstvennyy universitet.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

BATUNER, L.M.; LYASHENKO, V.D.; VOVSI, B.A.; VITENBERG, A.G.

Thermokinetics of the catalytic decomposition of o-methoxyphenyl diazonium sulfate. Trudy Len. khim-farm. inst. no.14:113-122 '62 (MIRA 17:12)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

ADAMOVICH, A.I.; VITENBERG, A.G.

Synthesis of dopane. Med.prom. 14 no.3:12-15 Mr '60.
(MIRA 13:6)

1. Zavod "Farmakon".
(URACIL)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

NIKOLAYEV, A.N.; YARTSEV, V.G.; VITENBERG, A.R.; NAUMOVA, V.V.

Protection of the internal surfaces of chemical apparatus. Plast. massy no.6:37-40 '63. (MIRA 16:10)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

ACCESSION NR: AP4009835 S/0191/64/000/001/0052/0054

AUTHOR: Nikolayev, A. N.; Yartsev, V. G.; Kulikov, N. V.; Vitenberg, A. R.; Matveyeva, Ye. A.; Ter-Mkrtchan, G. S.; Naumova, V. V.

TITLE: Glass plastics for constructional purposes

SOURCE: Plasticheskiye massy*, no. 1, 1964, 52-54

TOPIC TAGS: plastics, glass plastics, binders, polyester, resin PH-1, epoxy resins, styrene, glass lubricants, glass fillers, plastic tubes, hexamethylenediamine, metaphenylene diamine

ABSTRACT: A very simple and effective technological process for the continuous manufacture of shaped products from glass plastics is described. The products obtained on the stretching apparatus are characterized by high strength and can be applied in various industrial fields. The relationship between the hardeners and the processibility of resin on the continuous apparatus is investigated for a styrene-epoxide compound at a hardening temperature of 140 C. The properties of the styrene-epoxide compound with different hardeners

Card 1/2

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ACCESSION NR: AP4009835

are tabulated. The influence of new lubricants, As-1, AF-1, PVE, PVE-3, on the strength of glass plastic was investigated. The relationship between the strength of glass plastic pipes under axial compression and the glass filler content is established. Suggestions for the best choice of binders, lubricants and fillers are given. Glass plastic rods of small diameter made on the continuous machine have a high breaking strength similar to the strength of steel cables. Orig. art. has: 2 tables.

ASSOCIATION: none

SUBMITTED: 00	DATE ACQ: 10Feb64	ENCL: 00
SUB CODE: CH, MA	NO REF SOV: 000	OTHER: 000

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L 58975-65 EWP(e)/EPA(s)-2/EWT(m)/EPF(c)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4/Pt-7
EM/WW

ACCESSION NR: AP5014698 UR/0191/65/000/006/0062/0064

AUTHOR: Vitenberg, A.R.; Dudina, Yu. D.; Mikhaylova, Z.V.; Mironova, V.V.

TITLE: Properties of fiberglass reinforced plastics of high transparency

SOURCE: Plasticheskiye massy, no. 6, 1965, 62-64

TOPIC TAGS: fiberglass reinforced plastic, transparent plastic, glass filler, sizing agent, binder, polyester resin, polymer stability

ABSTRACT: The authors studied the influence of various types of glass fillers, sizing agents and binders on the

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

L 58975-65

ACCESSION NR: AP5014698

stability of the fiberglass reinforced plastics to water, light, and the atmosphere was also studied. It is concluded that the plastics prepared by using PNM-8 and PNM-2 [illegible] are characterized by a high transparency (70-80%), good physicomechanical [illegible] effect of the atmosphere and light.

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the experimental work. [illegible]

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: MT

NO REF SOV: 000 OTHER: 004

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

NIKOLAYEV, N.; YARTSEV, V.G.; KULIKOV, N.V.; VITENBERG, A.R.;
MATVEYEVA, Ye.A.; TER-MKRTCHAN, G.S.; NAUMOVA, V.V.

Glass plastics for building purposes. Plast.massy no.1:52-54
'64. (MIRA 17:6)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

VITENBERG, A.R.; DUDINA, Yu.D.

Colored glass-reinforced plastics as building materials. Plast. massy no.10:47-49 '60. (MIRA 13:12)
(Glass reinforced plastics) (Building materials)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

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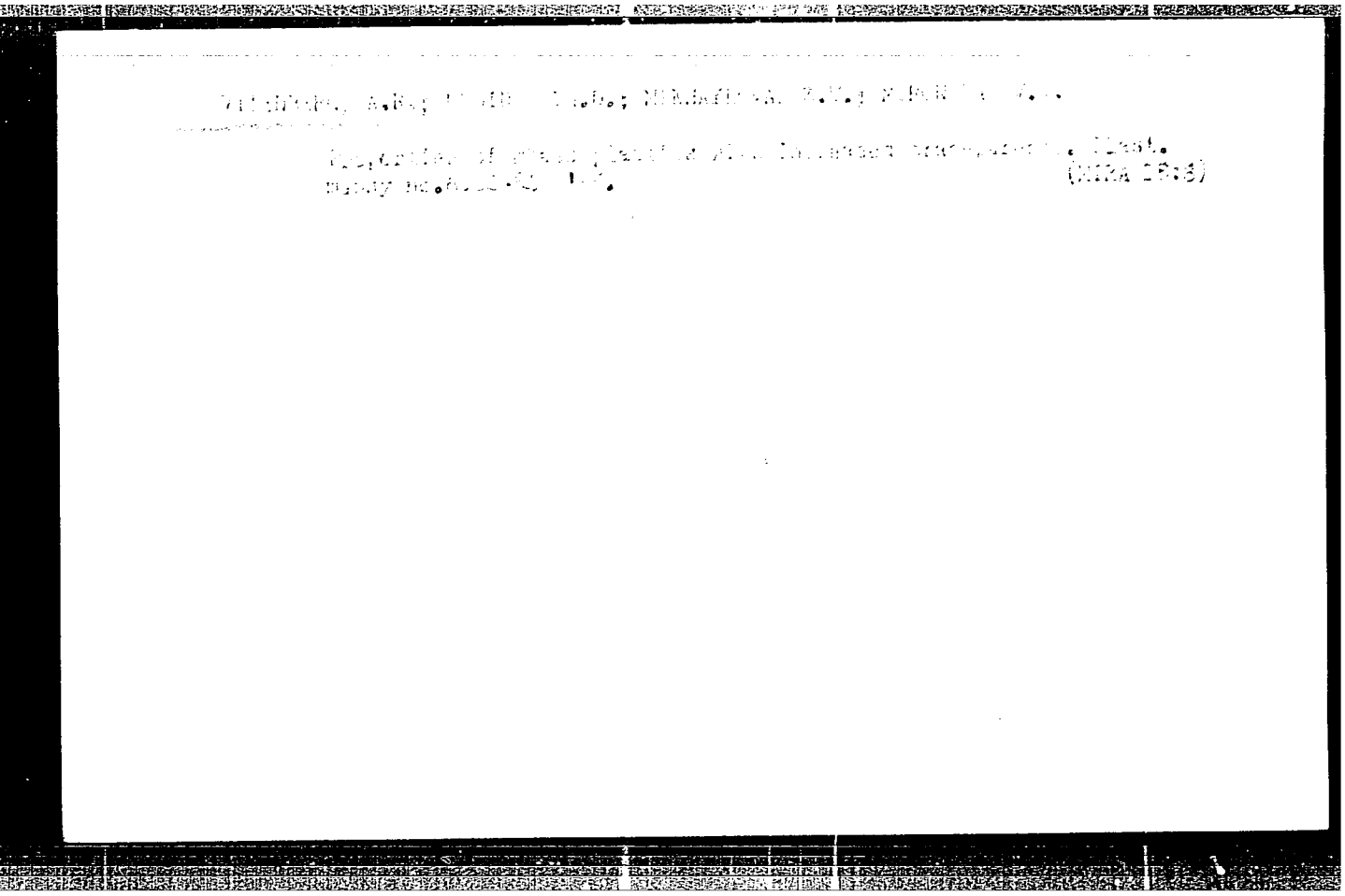

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

VITENBERG, A.S.; BAKHSHIYAN, TS.A.; LEONTOVICH, V.Ye.; LETNIKOV, Yu.S.

Gas furnace for the heating of tubular blanks. Stal' 22 no.3:279 Mr '62. (MIRA 15:3)
(Furnaces, Heating—Patents)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

VITENBERG, G., Cand Med Sci -- (diss) "Electrogastrography in the diagnosis of ~~intestinal~~ gastric diseases." Riga,1958. 29 pp with illustrations (Inst of Experimental Medicine Acad Sci LaSSR). 200 copies.

(KL, 12-58, 101)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

VITENBERG, L.

Subsidiary Apparatus + Materials

1334. The Operating Time of Impulse Relays — Vitenberg, L. (*Automatics & Telemechanics* [in Russian], No. 2, 1941, pp. 73–83.)

A general formula (6) determining the operating time of an impulse relay is written down and the mathematical difficulties involved in the use of this formula are pointed out. Accordingly a simplified method is proposed and a number of numerical examples are given.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

VITENBERG, M. L.

Subsidiary Apparatus and Materials

1335. THE INDUCTANCE OF A RELAY CARRYING A CONSTANT CURRENT.--Vitenberg. (*Automatics & Telemechanics* (in Russian), No. 2, 1941, pp. 85-94.)

In calculating the operating time of a relay it is necessary to know the dynamic inductance of the relay, i.e. the inductance when the current is growing and the armature moving. In view of the difficulties in determining the dynamic inductance it is normal in practice to use the static inductance. A method for calculating this, with the magnetic reluctance of iron taken into account, is proposed and a number of numerical examples are given.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

VITENBERG,

1390. NOMOGRAMS FOR THE DESIGN OF THE WINDINGS O
TELEPHONE RELAYS.--Vitenberg.... (*Automatics a*
Telemechanics [in Russian], No. 1, 1948, pp 131
137.)

To ensure the most economical use of copper, nom
grams have been prepared for various types of winding
showing the relationships between the number of turn
depth of winding, wire diameter, and winding resistance

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

D'YAKONOV, I.A.; VITENBERG, A.G.; KOMENDANTOV, M.I.

Kinetics of catalytic decomposition of ethyl diazo acetate. Part 1: Induction period. Zhur. org. khim. 1 no.7:1183-1188 Jl '65. (MIRA 18:11)

1. Leningradskiy gosudarstvennyy universitet.

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u E

Subsidiary apparatus & Materials

VITENBERG

[illegible] NOMOGRAMS FOR THE DESIGN OF THE WINDINGS [illegible] TELEPHONE RELAYS. [illegible] *Telemekhanika* (in Russian), No. [illegible] [illegible], pp. [illegible] 147.)

To ensure the most economical use of copper [illegible] grams have been prepared for various types of windings showing the relationships between the number of turns depth of winding, wire diameter, and winding resistance

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

VITENBERG, G.F., ERDMANIS, Ya.V.

Reaction to adrenalin test in cancer. Vopr.klin.lech.zlok.novoobraz. Riga. 2:87-91 1955

1. Sektor onkologii (zav. - prof. doktor P.I. Stradyn') Instituta eksperimental'noy meditsiny AN Latviyskoy SSR (dir. - prof. doktor P.Ya. Gerke), Respublikanskiy onkologicheskiy dispanser (glavvrach - M.G. Sopil'niak).

(EPINEPHRINE,
test in cancer (Rus))
(NEOPLASMS, diagnosis
epinephrine test (Rus))

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

VITENBERG G.F.

USSR/General Problems of Pathology - Tumors. T-5

Abs Jour : Ref Zhur - Biol., No 3, 1958, 12690

Author : Vitenberg, G.F.

Inst : Not given.

Title : The Functional State of the Autonomic Nervous System in Cancer Patients.

Orig Pub : Tr. In-ta eksperim. med. AN Latv SSR, 1956, 10, 59-66.

Abstract : The state of the autonomic nervous system was studied by various clinical methods. The most usual were studies of the blood pressure following a subcutaneous injection of acrenalin and observations on dermographism. The blood pressure reaction was aberrant in 59.6% and dermographism was weakened in 53.2% of the cases. The blood pressure changes and a slight acceleration of the pulse in an orthostatic test indicate a weakening of the sympathetic

Card 1/2

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

Abs Jour : Ref Zhur - Biol., No 3, 1958, 12690

division; a slight slowing of the pulse in a bed-ridden patient indicates involvement of the parasympathetic division.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

VITENBERG, G.P.; NEMIRO, Ye.A.

Report on the Fourth Latvian Republic Conference of Oncologists and the Third Out-ofTown Session of the Institute of Oncology of the Academy of Medicine of the U.S.S.R. Vop.onk. 5 no.6:756-759 '59.
(MIRA 12:12)

(ONCOLOGY--CONGRESSES)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

PESIN, V.G.; KHALETSKIY, A.M.; VITENBERG, I.G.

Salts of dialkylthiophosphoric acids. Part 4: Reactions of dialkylthiophosphoric acid salts with aromatic and heterocyclic halogen derivatives. Zhur. ob. khim. 31 no.8:2522-2526 Ag '61. (MIRA 14:8)

1. Leningradskiy khimiko-farmatsevticheskiy institut.
(Phosphorothioic acid) (Halogen compounds)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

PESIN, V.G.; KHALETSKIY, A.M.; VITENBERG, I.G.

Salts of dialkyl phosphorothioic acids. Part 5: Interaction of slats of dialkyl phosphorothioic acids with aromatic halogen derivatives. Zhur.ob.khim. 33 no.2:388-391 F '63. (MIRA 16:2)

1. Leningradskiy khimiko-farmatsevticheskiy institut.
(Phosphorothioic acid) (Halogen compounds)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

PESIN, V.G.; VITENBERG, I.G.

Reaction of aromatic and heterocyclic thiocyano derivative with diethyl and triethyl phosphite. Zhur. ob. khim. 35 no.5:930 My '65. (MIRA 18:6)

1. Leningradskiy khimiko-farmatsevticheskiy institut.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

L 17957-65 EWT(m)/EPF(c)/EWP(j) Pc-4/Pr-4 RM
S/0079/64/034/008/2769/2773

AUTHOR: Pesin, V. G.; Vitenberg, I. G.; Khaletskiy, A. M.

TITLE: Salts of dialkyl- and diarylmonothio- and dithiophosphoric acids. VIII. Interaction of salts of [illegible] and diphenyldithiophosphoric acids with aromatic and heterocyclic halo der[illegible]

SOURCE: Zhurnal obshchey khimii, v. 34, no. 8, 1964, 2769-2773

TOPIC TAGS: phosphoric acid, sulfide, halogenated organic compound, ester, ammonium salt, elemental halogen

Abstract: Halogen derivatives that form chiefly sulfides with alkali salts of dialkyl- and diphenylthiophosphoric acids also react with alkali salts [illegible] with the structure R S-R. [illegible] and heterocyclic halogen derivatives [illegible] and that of the solvent influence the course of the reaction [illegible] fluorobenzene reacts with the potassium or ammonium salt of diethyldithiophosphoric acid in [illegible] sulf[illegible] 2,4,2',4'-tetranitrodiphenyl disulfide, in acetone, 40% of the

Card 1/2

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

L 17957-65
ACCESSION NR: AP5002623

sulfide, 2-3% of the disulfide, and some O,O-diethyl-S-2,4-dinitrophenyl dithiophosphate were formed. When the reaction is conducted with 4-nitro-5-bromobenz-2,1,3-thiadiazole, both in alcohol and in acetone, a mixture of the sulfide and the dithiophosphoric acid ester is formed. The reaction is also studied with the chloro derivatives: 2,4-dinitrochloronaphthalene, 2-ethoxy-6-nitro-9-chloroacridine, 4-bromo-4-butyl-1,2-diphenyl-3-pyrazolidine, and 4-bromoantipyrine. Orig. art. has: 1 formula and 2 tables.

ASSOCIATION: Leningradskiy khimiko-farmatsevticheskiy institute (Leningrad Chemicopharmaceutical Institute)

SUBMITTED: 19Jun63 ENCL: 00 SUB CODE: OC, GC

NO REF SOV: 007 OTHER: 005 JPRS

Card 2/2

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

KHALETSKIY, A.M.; PESIN, V.G.; VITENBERG, I.G.

Synthesis of amides of β-phenylisopropylamine and of some carboxylic acids. Zhur.ob.khim. 32 no.4:1068-1071 Ap '62. (MIRA 15:4)

1. Leningradskiy khimiko-farmatsevticheskiy institut.
(Isopropylamine) (Amides)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

PESIN, V.G.; VITENBERG, I.G.; KHALETSKIY, A.M.

Salts of dialkyl- and diarylphosphorothioic and diaryl phosphorodithioic acids. Part 7: Interaction of the salts of dialkyl- and diphenylphosphorodithioic acids with aromatic and heterocyclic halo derivatives. Zhur. ob. khim. 34 no.8: 2769-2773 Ag '64. (MIRA 17:9)

1. Leningradskiy khimiko-farmatsevticheskiy institut.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

[illegible], V. G., [illegible], M. G., Leningrad Chemico-Pharmaceutical Institute (Leningradskiy Khimiko-Farmatsevticheskiy Institut)

"Salts of Dialkyl- and Diarylmonothio- and Dithiophosphoric Acids. VIII. Reaction of Salts of Diethylthio and Dithiophosphoric Acids with Aromatic and Heterocyclic Halo-Derivatives"

Moscow, Zhurnal Obshchey Khimii, Vol 36, No 7, 1966, pp 1268-1274

TOPIC TAGS: benzene, nonmetallic organic derivative, halogenated organic compound

Abstract: In the reaction of potassium diethylthiophosphate with 2,4-dinitrofluorobenzene, diethylfluorophosphate and 2,4-dinitro-thiophenolate were formed. A mechanism of their formation was proposed. Potassium diethyldithiophosphate was found to react analogously with 2,4-dinitro-chlorobenzene and 2,4-dinitrofluorobenzene. Potassium diethylthiophosphate reacted with picryl chloride, 2-chlorobenzothiazole, 2-chloro-6-nitrobenzothiazole, 4-chloro-7-nitrobenz-2,1,3-thiadiazole, 2-chloro-5-nitropyridine, and 2-chloro-3,5-dinitropyridine, forming sulfides R-S-R. o-Nitrochlorobenzene, p-nitrochlorobenzene, 2-bromopyridine, and 8-chlorocaffeine do not take part in this reaction with potassium diethylthiophosphate. Potassium diethylthiophosphate reacted with benzoyl chloride and p-nitrobenzoyl chloride to form the corresponding thiol derivatives: O,O-diethyl-S-benzoyl thiophosphate and O,O-diethyl-S-p-nitrobenzoyl thiophosphate, respectively. Orig. art. has: 2 figures and 1 table. [JPRS: 38,970]

SUB CODE: 07 / SUBM DATE: 15Jun65 / ORIG REF: 015 / OTH REF: 024

Card 1/1 UDC: 547.26'118

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

L 29757-6 EWT(d) Pg-4 IJP(c) MLT

/0394/0305

AUTHOR: Vitenberg, I. M.

TITLE: Questions concerning the solution of boundary value problems for systems ... differential ... computers

SOURCE: ... zadach (Analog ...

Moskva, 1952 g Kiev, Naukova dumka, ...

TOPIC TAGS: analog computer, electrosimulation, electromodel, boundary value problem, ordinary differential equation

ABSTRACT: The paper considers various problems of design philosophy for analog computers ... differential equa-

$\frac{dx}{dt}$ ...

The author points out that the chief drawback in the use of these machines ... also points out the potential use of these machines

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ACCESSION NR: AT5002508

in laboratory situations, taking their data from laboratory apparatus. The chief design characteristic of interest in the paper is the method by which a would-be solution is tested for precision by the device. In all cases, a functional of either absolute deviation [illegible] is evaluated.

$$\mu' = \sum_{i=1}^{t} \alpha_i |\varepsilon_i| \qquad (4)$$

$$\mu^s = \sum_{i=1}^{t} \alpha_i \varepsilon_i^2. \qquad (5)$$

where $\varepsilon_i = F_i(x_1, x_2, \ldots, x_n) - [F_i(x_1, x_2, \ldots, x_n)]_{true}$ (3)

The author divides all precision criteria into three categories: [illegible] techniques is discussed in the remainder of the paper. Orig. art. has [illegible] figures and 5 formulas.

ASSOCIATION: None

SUBMITTED: 03Sep64 ENCL: 00 SUB CODE: MA, DP

NO REF SOV: 004 OTHER: 000

Card 2/2

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

VITENBERG, I.M.

Possibility of using a magnetic drum in electric simulating devices with automated search of the solution. Vych. tekh. no.2:56-72 '61. (MIRA 15:3)

(Magnetic memory (Calculating machines))
(Electronic differential analyzers)
(Electromechanical analogies)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

VITENBERG, I.M.

Certain problems concerning the design of the control networks of automated electric simulating devices. Vych. tekh. no.1: 37-47 '60. (MIRA 15:3)
(Electromechanical analogies)
(Electronic calculating machines)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

VITENBERG, I. M.

VITENBERG, I. M. -- "Amplifiers for Electric Models and Calculating Instruments." Sub 11 Mar 52, Moscow Order of Lenin Power Engineering Inst imeni V. M. Molotov. (Dissertation for the Degree of Candidate in Technical Sciences.)

SO: VECHERNAYA MOSKVA, January-December 1952

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

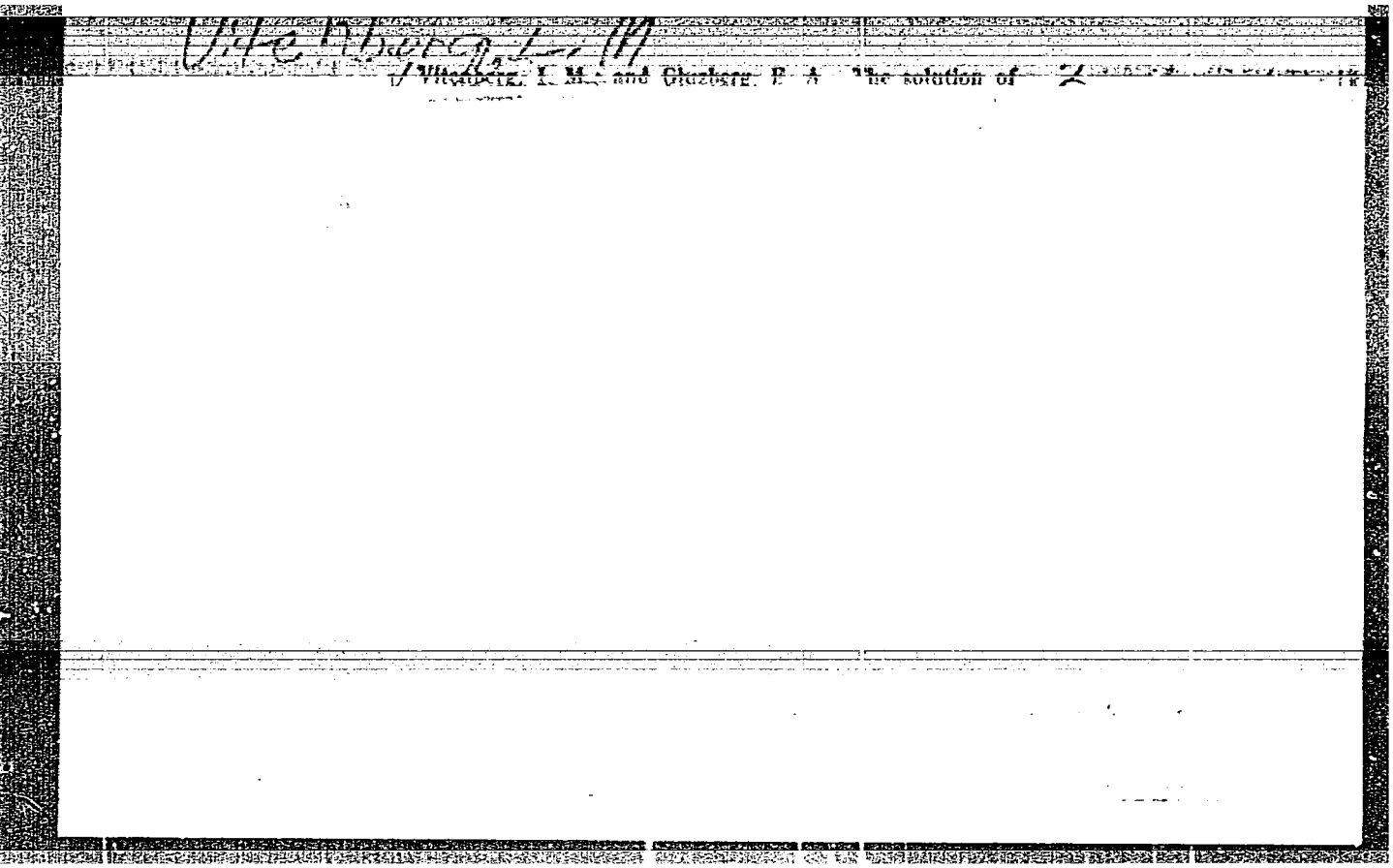
VITTENBERG, I. M., CAnd. in Tech. Sci.

"Extending the Possiblities of Electric Simulators Developed at the KB MMIP" 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

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0



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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

VITENBERG, I. M.

"The Modelling Electronic Apparatus for the Automatic Finding of a Solution for a Problems with a Given System of Equations,"

report presented at the Conference on Automation and Computation Engineering, Moscow, 5-8 March 1957. Organized by AU Sci. Eng. and Tech. Society for Apparatus Building.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

VITENBERG, I.M.

16(1) PHASE I BOOK EXPLOITATION 1110

Voprosy teorii matematicheskikh mashin; sbornik pervyy (Problems of the Theory of Mathematical Computing Machines; Collection of Articles, v. 1) Moscow, Fizmatgiz, 1958. 230 p. 10,000 copies printed.

Ed. (Title page): Bazilevskiy, Yuriy Yakovlevich; Ed. (Inside book): Shreyder, Yu.A.; Tech. Ed.: Gavrilov, S.S.

PURPOSE: This book is intended for engineers, scientific workers, and students concerned with mathematical computers and control devices.

COVERAGE: This book, Volume I, consists of 12 articles devoted to the logical structure of mathematical computers, programming problems, and computing methods. Subjects treated include theoretical methods of describing the structure of mathematical computers, principles of constructing certain specialized computers, problems of programming automation, and selection of computing methods which are convenient for computer realization. All contributions in this volume are Soviet.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

ALEKPEROV, V.P., inzh.; ATOVMYAN, I.O., inzh.; ZUYEV, V.I., inzh.; KAVUN, Ye.S., kand.tekhn.nauk; KOGAN, B.Ya., kand.tekhn.nauk; KOPAY-GORA, P.N., kand.tekhn.nauk; KULAKOV, A.A., inzh.; LEBEDEV, A.N., kand. tekhn.nauk; PAPERNOV, A.A., doktor tekhn.nauk; PEL'POR, D.S., doktor tekhn.nauk; PLOTNIKOV, V.N., kand.tekhn.nauk; RUZSKIY, Yu.Ye., kand.tekhn.nauk; SOLODOVNIKOV, V.V., doktor tekhn.nauk; TOPCHEYEV, Yu.I., kand.tekhn.nauk; ULANOV, G.M., kand.tekhn.nauk; SHRAMKO, L.S., kand.tekhn.nauk; DOBROGURSKIY, S.O., doktor tekhn. nauk, retsenzent; KAZAKOV, V.A., kand.tekhn.nauk, retsenzent; PETROV, V.V., kand.tekhn.nauk, retsenzent; KHAVKIN, G.A., inzh., retsenzent; SOLODOVNIKOV, V.V., prof., doktor tekhn.nauk, red.; YITENBERG, I.M., kand.tekhn.nauk, nauchnyy red.; MOLDAVER, A.I., kand.tekhn.nauk, nauchnyy red.; KHETAGUROV, Ya.A., kand.tekhn.nauk, nauchnyy red.; POLYAKOV, G.F., red.izd-va; KONOVALOV, G.M., red. izd-va; SOKOLOVA, T.F., tekhn.red.

[Fundamentals of automatic control] Osnovy avtomaticheskogo regulirovaniia. Vol.2. [Elements of automatic control systems] Elementy sistem avtomaticheskogo regulirovaniia. Pt 2. [Compensating elements and computer components] Korrektiruiushchie elementy i elementy vychislitel'nykh mashin. Moskva, Gos.nauchno-tekhn. izd-vo mashinostroit.lit-ry. 1959. 453 p. (MIRA 12:4)
(Automatic control) (Electronic apparatus and appliances) (Electronic calculating machines)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

VITENBERG, I. M.
Inst. for Sci. Res. in Computing Machinery, Moscow.

"Some Problems Regarding the Design of Automatic Electronic Analogue Computers for Manufacturing Process Control." (Section IV)

paper submitted for Joint Symposium on Instrumentation and Computation in Process Development and Plant Design, Bristich Computer Scoeity, London, England, 11-12 May 1959.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

IVITENBERG, I.M.

28(2) PHASE I BOOK EXPLOITATION SOV/2675

Moscow. Dom nauchno-tekhnicheskoy propagandy im. F. E. Dzerzhinskogo

Vychislitel'nye tekhniki i yego primeneniye (Computation Technique and Its Application) Moscow, Gosenergoizdat, 1959. 391 p. (Series: Obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy RSFSR) 5,000 copies printed.

Ed. (Title page): S. A. Lebedev, Academician; Ed. (Inside book): V.I. Savel'yev; Tech. Ed.: G. I. Matveyev.

PURPOSE: This collection of articles is intended for scientific, engineering and technical personnel engaged in research, design and operation of digital and analog computers. It may also be used by students of vuzes specializing in computers.

COVERAGE: The authors present fundamentals of digital computers, their elements and units such as arithmetic units, internal and external memory and control devices. They discuss the possibility of constructing computers using semiconductor elements and consider the fundamentals in the theory of logical circuits. They also discuss problems of programming and explain the operation of analog computers and their elements. Brief discussion of mathematical instruments is also presented. The articles were presented at a computer seminar arranged by Moskovskiy dom nauchno-tekhnicheskoy propagandy imeni F. E. Dzerzhinskiy (Moscow Center for Scientific and Technical Propaganda imeni F. D. Dzerzhinskiy) in 1957. No personalities are mentioned. References appear at the end of some articles.

Zinoviy, A. M., Engineer. Construction of High-speed Computers Using Semiconductor Elements 185
The author discusses the possibility of using transistors in computer circuits and describes the operation of the following transistor circuits: amplifiers, pulse forming circuits, triggers and direct-coupled transistors. There are 4 references: 1 Soviet and 3 English.

Bolshevskiy, D. S. Devices of Series Computing Machines. 201
The author discusses component elements of series computing machines such as dynamic triggers, circuits for transforming codes, adding and subtracting circuits and circuits for determining coincidence of two codes. He also describes the operation of a series-type memory unit. There are no references.

Dzhabrov, V. P., Candidate of Technical Sciences. Electronic Analog Computers for Solving Differential Equations 209
The author presents a general discussion of analog computers and considers fields of their application. He presents a table of Soviet computers, giving specifications, year of manufacture and the developing organization. There are 11 references, all Soviet (including 1 translation).

Kitenberg, I. M., Candidate of Technical Sciences. Operational Units of Analog Computers 297
The author discusses the operation of various units in a computer such as adders, integrators, differentiators, operational amplifiers, multipliers and functional converters and analyzes their circuits. There are 13 references, all Soviet (including 1 translation).

Glushberg, E. A., Engineer. Use of Analog Computers in Engineering and Scientific Analysis 327
The author discusses the use of analog computers for analyzing performance of various industrial machinery such as rolling machines, dynamoelectric amplifiers, hydraulic servos, etc. Use of analog computers for solving hydraulic equations is also discussed. There are 8 references, all Soviet (including 2 translations).

Glushberg, E. A., Engineer. Methods of Setting up Problems for Analog Computers and Checking Accuracy of Solutions 343
The author discusses the procedure of reducing problems to a form suitable for analog computers and describes methods of connecting various computer units. He explains methods of determining proper scale factors and transfer coefficients and presents numerical examples. He also discusses methods of solving nonlinear functions and considers computer accuracy. There are no references.

Yasnopol'skiy, V. Ya. Candidate of Technical Sciences. Modern Small Mathematical Instruments 346
The author discusses the construction and operation of mathematical instruments such as integrators and planimeters. He also describes harmonic analyzers developed by Mader, Gradi and Amsler and explains the operation of instruments for analyzing random functions. There are 14 references, 7 Soviet (including 4 translations) and 7 English.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

BRASLAVSKIY, D.A., kand.tekhn.nauk; GOL'DFARB, L.S., doktor tekhn.nauk; GUZENKO, A.I., kand.tekhn.nauk; DMITRIYEV, K.Ye., kand.tekhn.nauk; KALASHNIKOV, V.A., inzh.; KLOBUKOV, P.P., kand.tekhn.nauk; KLUBNIKIN, P.F., kand.tekhn.nauk; KRASSOV, I.M., kand.tekhn.nauk; PEL'POR, D.S., doktor tekhn.nauk; PETROV, V.V., kand.tekhn.nauk; ROZENBLAT, M.A., doktor tekhn.nauk; RUZSKIY, Yu.Ye., kand.tekhn. nauk; SADOVSKIY, B.D., kand.tekhn.nauk; SOKOLOV, A.A., kand.tekhn. nauk; TITOV, V.K., kand.tekhn.nauk; ULANOV, G.M., kand.tekhn.nauk; FILIPCHUK, Ye.V., kand.tekhn.nauk; KHARYBIN, A.Ye., kand.tekhn. nauk; KHOKHLOV, V.A., kand.tekhn.nauk; GALTEYEV, F.F., kand.tekhn. nauk, retsenzent; KARASEV, V.A., doktor tekhn.nauk, retsenzent; RAGOZIN, Yu.D., kand.tekhn.nauk, retsenzent; REYNGOL'D, Yu.R., inzh., retsenzent; RYABOV, B.A., doktor tekhn.nauk, retsenzent; SAYBEL', A.G., kand.tekhn.nauk, retsenzent; SHEVYAKOV, A.A., kand.tekhn.nauk, retsenzent; SOLODOVNIKOV, V.V., prof., doktor tekhn.nauk, red.; YITKENBERG, I.M., kand.tekhn.nauk, nauchnyy red.; MOLDAVER, A.L., kand.tekhn.nauk, nauchnyy red.; POLYAKOV, G.F., red.izd-va; AKIMOVA, A.G., red.izd-va; KONOVALOV, G.M., red.izd-va; TIKHONOV, A.Ya., tekhn. red.; SOKOLOVA, T.F., tekhn.red.

[Fundamentals of automatic control] Osnovy avtomaticheskogo regulirovaniia. Vol.2. [Elements of automatic conrol systems] Elementy sistem avtomaticheskogo regulirovaniia. Pt.1. [Sensing devices, amplifiers, and actuators] Chuvstvitel'nye, usilitel'nye i ispolnitel'nye elementy. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry. 1959. 722 p. (MIRA 12:4)
(Automatic control) (Electronic apparatus and appliances) (Electronic calculating machines)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

28 (2)

AUTHORS: Vitenberg, ~~I. M.,~~ Candidate of Technical Sciences, Yerokhin, Ye. A., Engineer SOV/119-59-6-1/18

TITLE: Group Systems of Automatic Control and Zero Adjustment in Direct Current Amplifiers of Electric Models (Gruppovyye sistemy avtomaticheskogo kontrolya i nastroyki nuley usiliteley postoyannogo toka elektricheskikh modeley)

PERIODICAL: Priborostroyeniye, 1959, Nr 6, pp 1 - 4 (USSR)

ABSTRACT: The present paper deals with circuit diagrams for the zero adjustment of multitubular direct current amplifiers which carry out linear mathematical operations by feedback, requiring mean or low accuracy. A distinction is made between manual and automatic zero adjustment. The latter may be a single- or group adjustment. A middle course is the automatic control with subsequent manual zero adjustment. The principle of the zero adjustment control by groups is based on the consecutive measurement of the zero drift voltages by means of a zero element. Since the zero drift voltage in direct current amplifiers varies but slowly, such a method is acceptable for models of mean accuracy. In all known systems the zero adjustment control is carried out with mechanical commutators by means of step for step switch-

Card 1/3

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es. Constructions are shown for an exemplification, which were worked out in the electromodel department of the NIISchetMash (Nauchno-issledovatel'skiy institut schetnykh mashin - Scientific Research Institute of Computers). Figure 1 shows the circuit diagram of the electromechanical system of the automatic zero adjustment in the electric models MN-2 and MN-3. The amplifiers are subdivided in groups of 25 each. The zero adjustment is brought about by the motion of the sliding contact of a potentiometer; this motion is released by a relay of the zero element. Figure 2 shows the circuit diagram of an electronic system, as is applied in the model MN-9. A similar system has been applied in the model MN-11. The step for step compensation of the zero drift voltage occurs by a change in potential on the second grid of the tube over a condenser. When using amplifying tubes with a good zero stability, the zero adjustment for the solution of problems which do not require great accuracy, may take place within longer periods of time. The automatic control of the zero adjustment with subsequent manual control is then recommended. Figure 5 shows such a control circuit for

 electric models with 300 - 400 amplifying tubes. S. V. Petrakov

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and V. M. Gerkhanova development in the elaboration and testing of this system. The system exhibits two zero elements, the first of which controls the zero drift, and the second serves for the zero adjustment. There are 6 figures and 1 table.

ASSOCIATION: Nauchno-issledovatel'skiy institut schetnykh mashin (Scientific Research Institute of Computers)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

VITENBERG, I.M.

PHASE I BOOK EXPLOITATION SOV/4651

Moscow. Inzhenerno-fizicheskiy institut

Vychislitel'naya tekhnika; sbornik statey (Computer Technique; Collection of Articles) Moscow, Atomizdat, 1960. 54 p. 2,500 copies printed.

Sponsoring Agencies: Ministerstvo vysshego i srednego spetsial'nogo obrazovaniya RSFSR; Moskovskiy inzhenerno-fizicheskiy institut.

Resp. Ed.: Ya.A. Khetagurov, Candidate of Technical Sciences; Tech. Ed.: S.M. Popova.

PURPOSE: This collection of reports is intended for technical personnel working with computers.

COVERAGE: The collection contains reports dealing with some problems of computer technique. The reports of I.O. Atovmyan, V.I. Zuyev, and G.N. Solov'yev discuss various problems concerning a general-purpose discrete-action computer which was designed and is presently under construction at the MIFI, Moskovskiy inzhenerno-fizicheskiy institut (Moscow Engineering Physics Institute). The reports of Ya.A. Khetagurov, I.M. Vitenberg and Ye.P. Zhidkov examine other technical problems of computer design. There are no references.

Card 1/4

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32575
S/621/61/000/000/010/014
D234/D303

9,7200

AUTHORS: Vitenberg, I.M., and Arkhovskiy, V.F.

TITLE: A specialized electro-simulating installation with automated search of solution

SOURCE: Nauchno-tekhnicheskoye obshchestvo priborostroitel'noy promyshlennosti. Primeneniye vychislitel'noy tekhniki dlya avtomatizatsii proizvodstva. Trudy soveshchaniya, provedennogo v oktyabre 1959 g. Ed. by V.V. Solodovnikov. Moscow, Mashgiz, 1961, 427 - 435

TEXT: The authors describe an installation designed at NIISchetmash with their participation and intended for reproduction of curves described by kinetic equations of the form

$$N = P_0 e^{\pm a_p t^{b_p}} + M_0(1 - e^{\pm a_m t^{b_m}}). \qquad (1)$$

The installation can also solve the inverse problem, i.e. that of

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A specialized electro-simulating ...

automatic determination of the coefficients if the curve is given experimentally as a series of discrete values. The analysis of three possible methods of constructing the curve is stated to have shown that the most adequate of them is the method of solving the system of determining differential equations. Division is replaced by taking logarithms. The elements of the computer can be used also for plotting expressions of the form

$$a = A_0 e^{\pm \frac{Q_a}{RT}}, \qquad (11)$$

$A = A_0 \exp(\pm at)$ and

$$B = B_0(1 - e^{\pm a_0 \tau}), \qquad (12)$$

and for determining the area of any curve. The variation of the values of the coefficients is carried out by the method of minimizing If the value of a coefficient is known it can be set by hand and is not searched for by the installation. There are 8 figures.

Card 2/2

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

ACC NR: AR7004317 SOURCE CODE: UR/0271/66/000/011/B012/B012

AUTHOR: Vitenberg, I. M.; Lamin, Ye. I.; Tankelevich, R. L.

TITLE: Using new technical means for solving partial differential equations on analog computers

SOURCE: Ref. zh. Avtomat. telemekh. i vychisl. tekhn., Abs. 11B83

REF SOURCE: Sb. Vychisl. tekhn. v upr., M., Nauka, 1966, 422-431

TOPIC TAGS: ~~digital~~ analog computer, ~~integral~~ partial differential ~~shaper~~ equation, differential equation solution, magnetic drum

ABSTRACT: Two methods of processing partial differential equations for solving on an analog computer are briefly described. The best efficiency of solution can be achieved by combining the new means, solution periodization, information memory devices, and a system of automatic search for boundary-problem solution. The magnetic drum is one of possible forms of information-memory devices. A flowsheet of problem solution with rapid periodization and with a magnetic-drum memory is shown. The solution of a single-dimensional parabolic equation with variable coefficients is given as an example. Six figures. Bibliography of 5 titles. V. A. [Translation of abstract]

SUB CODE: 09, 12

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L 10415-66 EWT(d)/EWT(m)/EWP(w)/EWP(v)/T/EWP(k)/EWP(h)/EWP(l)/EWA(h)/ETC(m) IJP(c)
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Vitenberg, I. M.; Petrov, G. M.; Pukhov, G. Ye., eds.

Problems of theory and application of mathematical modeling (Voprosy teorii i primeneniya matematicheskogo modelirovaniya). Moscow, Izd-vo "Sovetskoye radio," 1965. 646 p. illus., biblio. 5800 copies printed.

TOPIC TAGS: analog computer, simulation, mathematical modeling

PURPOSE AND COVERAGE: This book presents the present state and development of Soviet analog computer technology and its significance in various brances of Soviet science and national economy. Problems of the theory of analog computers and mathematical modeling of systems described by partial differential equations and ordinary differential equations are discussed. Readers are familiarized with experience gained in operating modern computers. The book contains articles by several well-known specialists in computer technology which are based on material from the First All-Union Conference on Analog Computer Technology. This book is

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24

intended for a wide range of specialists engaged in designing and operating analog and digital computers, also teachers and students in engineering institutes and State universities.

TABLE OF CONTENTS:

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

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Electrical modeling of problems of the dynamics of certain mechanical structures (A. G. Levin) -- 615
The application of analog computers to investigating processes in a main gas pipeline (M. A. Zhidkova) -- 628

SUB CODE: DP, MA/ SUBM DATE: 19Feb65/ ORIG REF: 355/ OTH REF: 033

Card 9/9

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

VITENBERG, I.M., doktor tekhn. nauk, red.; PETROV, G.M., kand. tekhn. nauk, red.; PUKHOV, G.Ye., red.; GUTCHINA, N.Ya., red.

[Problems of the theory and application of mathematical modeling] Voprosy teorii i primeneniia matematicheskogo modelirovaniia. Moskva, Sovetskoe radio, 1965. 646 p. (MIRA 18:4)

1. Chlen-korrespondent AN Ukr.SSR (for Pukhov).

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ACCESSION NR: AT3001887 S/2906/62/000/000/0218/0237

76

AUTHOR: Vitenberg, I. M.

TITLE: Problems of the design of specialized analog computing machines (with employment of the periodization regime and time contraction)

SOURCE: Kombinirovannyye vychislitel'nyye mashiny; trudy II Vsesoyuznoy konferentsii-seminara po teorii i metodam matematicheskogo modelirovaniya. Moscow, Izd-vo AN SSSR, 1962, 218-237

TOPIC TAGS: computer, analog, specialized, periodic, solution, time, multiplexing, foreshortening, contraction, predictive, simulation, aircraft, flight, simulator, reactor, nuclear, computation, error, commutation

ABSTRACT: This paper comprises an examination of problems arising in the selection of circuit elements for specialized analog computers (AC) with multiple utilization of resolver elements (RE) and periodization of solutions. The author regards specializations of AC's as indispensable for improved accuracy and speed, especially for such problems as aircraft flight control and flight simulation, nuclear-reactor control and reactor-training simulation, the solution of systems with linear algebraic equations, the solution of linear and nonlinear programming

Card 1/4

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problems, and the setting up of and automatic search for solutions required for certain industrial processes by means of predictive analysis. On the selection of amplifiers for specialized AC's. 1. Definition of basic characteristics of a resolving (operational) amplifier: D.C. voltage amplification factor, frequency characteristics (frequency dependence of the amplification factor and the phase error), reduced null-drift voltage, and magnitude of network current. The author urges improvement of each of these characteristics, but not at an excessive cost in complication inconsistent with the purpose of the AC; for example, an aircraft flight simulator can operate satisfactorily even without automatic null-drift compensation. The significance of each of the aforestated characteristics, means for their reasonable improvement, and interrelationships between the characteristics and the means employed to control them are explained. The limits of the admissible magnitudes of some of the undesirable characteristics are explored for various specific applications. Periodization of solutions, as a rule, leads to a reduction of the time scale, which in turn leads to a direct increase of the error. 2. On some supplementary errors of AC's operating in a periodic-solution regime: In addition to the increase of an error attributable to the use of a periodic solution per se, the dynamic properties of the RE operating at a faster rate leads to the appearance of a systematic error in the solution. An error analysis is performed for this effect and also for errors introduced by nonlinear block component. 3. On the selection

Card 2/4

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of electric-simulation circuits with multiplex utilization of RE: The advantages of multiple utilization of RE's and means for their attainment are described and depicted schematically. AC with multiple utilization of RE's are divided into four basic categories: (a) Multiple utilization of RE's that perform some of the most complex operations, for example, multiplication of 2 variables and formation of functional relationships. If the employment of a single RE for such purpose permits its enlargement and refinement, then the improvement in accuracy achieved thereby is worth the additional complication of commutation; the balance of cost and accuracy must be closely watched; (b) multiple utilization of groups of RE's that perform complex computational operations which do not contain integration operations and do not employ the method of implicit functions. Examples: Coordination transformations or aircraft-powerplant thrust computations (references cited); (c) multiple employment of groups of RE's for the performance of iterative computational operations both including a number of external noncommutative elements and with the use of the method of implicit functions within the multiply employed system. Examples: Machines for the solutions of systems of transcendental, algebraic, and integral equations (references); (d) multiple utilization of RE's for the formation of derivatives in the solution of systems of ordinary linear and nonlinear differential equations. Examples: Program control and systems with separate commutated RE's and a fairly well-developed ordinary plugging circuitry.

Card 3/4

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Examples and selection criteria are discussed. Recommended volumetric indexes are tabulated, both for separate circuit elements and for the fundamental RE's of AC's, and for the elements of control systems with periodic solutions. The specialization of AC's opens broad horizons for the simplification of the RE's and the application of the periodic-solution regime and the multiple employment of computing systems, all of which, in turn, should broaden appreciably the areas of potential usefulness of analog computing machines. Orig. art. contains 11 figures, 3 tables, and 64 numbered equations.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 11Apr63 ENCL: 00

SUB CODE: CP, MM, CG. AE, NS. NO REF SOV: 010 OTHER: 003

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ACCESSION NR: AT3001886 S/2906/62/000/000/0205/0217

75

AUTHORS: Vitenberg, I. M.; Yerokhin, Ye. A.

TITLE: Employment of an averaged estimate in the search by the minimization method in the MN-11 analog computer 16

SOURCE: Kombinirovannyye vychislitel'nyye mashiny; trudy II Vsesoyuznoy konferentsii-seminara po teorii i metodam matematicheskogo modelirovaniya. Mosco Izd-vo AN SSSR, 1962, 205-217.

TOPIC TAGS: computer, analog, MN-11, search, minimization, estimate, bound, average, averaged

ABSTRACT: This paper deals with the use of an analog computer (AC) as a model of the control object in the parallel predictive analysis of technological processes. Such use of an AC leaves a definite imprint on the methods employed in the design of circuitry for the search for an optimal solution. In the practice of a search for a solution for unstable systems a substantial deterioration of the reproducibility of the solutions is encountered, whereupon it becomes necessary in the design of searching circuitry to take into account the presence of random factors and spurious variations of the quantity μ that characterizes the nearness of the jth solution ob-

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tained to the optimal version. The paper proposes to improve the quality of the search and to accelerate it by means of the use of an averaged estimate of the deviations $\Delta\mu_j$, so that the probability of a spurious signal can be reduced. Difficulties encountered with the use of the averaging method are related. The algorithm employed on the AC MN-11 is explained and graphically illustrated. Several illustrative examples are set forth, and it is concluded that in a search by the minimization method with a constant magnitude of the increment it is advisable to employ the average estimate of the quantity $\Delta\mu$; here the increase of the total number of solutions does not lead to a substantial change of the operational possibilities of the MN-11 machine, which exhibits a sufficiently large frequency of the periodization of solutions. One of the principal qualities of the MN-11 machine stemming from its high speed and the automization of its search for suitable solutions appears to be its capability to solve unstable problems with great changes at the ends of the solution intervals for small changes of the varied parameters. The application of the averaged estimate of the quantity $\Delta\mu$ increases these capabilities of the MN-11 machine even further and improves its effectiveness in the investigation of its capability for the control of "unstable" technological processes in the predictive analytical regime. Orig. art. contains 10 figs., 1 table, and 14 numbered equas.

ASSOCIATION: none

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ACCESSION NR: AT4045206 S/2588/64/000/006/0064/0079

AUTHOR: Vitenberg, I. M.

TITLE: The selection of the control effect formation frequency in the control of inertial production processes in the anticipatory analysis mode

SOURCE: Avtomaticheskoye upravleniye i vychislitel'naya tekhnika, no. 6, 1964, 64-79

TOPIC TAGS: automatic control system, control effect formation frequency, inertial process, production control, anticipatory analysis, mathematical model, system design, automatic search

ABSTRACT: The author notes that the control of production processes in the anticipatory analysis mode postulates a parallel mathematical simulation of the technological process to be controlled, in which a mathematical model [illegible] the process is employed for [illegible] the process and [illegible] values of the [illegible] optimal [illegible] this mathematical [illegible] type [illegible] receives information with [illegible] process [illegible]

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best variant for its continuation, and provides for the proper modification of the settings for the regulating organs which directly influence the process. It is pointed out that, normally, the mathematical description of the technological process to be controlled can be reduced to a system of ordinary nonlinear differential equations, [illegible] emerges as an [illegible] steady state [illegible] determine the current ha[illegible] structural features of controllable technological systems, does not result in an instantaneous change in the output characteristics of the system. The author emphasizes that this fact must be borne in mind when designing systems for the control [illegible] an inertial [illegible] existing system [illegible] major section [illegible]

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of connection in direct automatic search systems, and the point is made that in such systems the determining factors are the character of the change in the uncontrolled variables and the time constants of the controlled process. The problem of chosing the frequency with which the control effects are supplied when [illegible] involves, according to the author's definition, the maintenance of a process mode such as to ensure a minimal [illegible] from the value corresponding to the optimal character [illegible]

adjustment mode. Here the [illegible] the self-adjustment condition, at which time the values of the input and output factors characterizing the process are used in the machine to determine the constant coefficients of the differential equation system which describes the process to be controlled; the rate of change in the internal parameters of the process, as well as the possible rates of change in the input and output values [illegible] must be considered when determining the required frequency of connection. In the

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simplest case, in which the values of the uncontrolled input variables remain constant for a sufficiently extended period of time, the necessary frequency can be determined in a manner similar to that described in the previous section, based on the analysis of the possible rates of change in the internal characteristics. In most practically encountered cases the input values of the controlled process vary by virtue of the simultaneous (or subsequent) change in the uncontrolled input varaibles and in other parameters, so that when selecting the self-adjustment method it is necessary to take into consideration the interchangeability of these values in the maintenance of stable operation of the entire control system. Orig. art. has: 6 figures and 46 formulas.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00 SUB CODE: IE

NO REF SOV: 001 OTHER: 000

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

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NIKOLAYEV, N.S.; KOZLOV, E.S.; POLGORODNIK, N.P.; VITENBERG, I.M., kand. tekhn. nauk, retsenzent; VOSKRESENSKIY, N.N., inzh., red.; SMIRNOVA, G.V., tekhn. red.; GORDEYEVA, L.P., tekhn. red.

[The USM-1 analog computer for solving boundary value problems of equations in mathematical physics]Analogovaia matematicheskaia mashina USM-1; dlia resheniia kraevykh zadach uravnenii matematicheskoi fiziki. Moskva, Mashgiz, 1962. 293 p. (MIRA 15:12)
(Analog computers)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

VITENBERG, I.M.

Choice of amplifiers for specialized electrical simulating devices.
Vych. tekh. no.3:123-146 '62. (MIRA 15:6)
(Amplifiers (Electronics)) (Electronic analog computers)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

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S/194/62/000/007/010/160
D222/D309

9.7200

AUTHORS: Vitenberg, I.M., and Arkhovskiy, V.F.

TITLE: A special-purpose analog device with automatic search for the solution

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 7, 1962, abstract 7-1-41 s (In collection: Primeneniye vychisl. tekhn. dlya avtomatiz. proiz-va, M., Mashgiz, 1961, 427 - 435)

TEXT: The special-purpose analog device described has been designed at NIISChETMASh for the reproduction of curves described by kinetic equations of the form $N = P_o e^{\pm a_p t^{B_p}} + M_o(i - e^{\pm a_m t^{B_m}})$. The device is capable of solving both the direct and the inverse problem, i.e. it reproduces the curves for given values of the constant coefficients, or it determines automatically the coefficients in the equations in order to obtain a curve which is identical to another experimentally obtai-

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ned curve, specified in the form of a series of discrete values. The device consists of the following parts: the analog circuit itself; a computer unit to estimate the proximity of the solution to the curve given by the discrete points; a control system for signalling time intervals to ensure the synchronous operation of all elements at a solution repetition-frequency of 6.25 cps; and a visual display system. The analog circuit uses typical D.C. operational blocks. The computer unit, the search control system and the time-interval control system use pulse techniques. The time-interval system contains: a master oscillator of 1 kcps frequency, ring frequency dividers of 10 (units) and 16 (tens) connected in series; a group of decoders, and also switches for the control of pulses which transmit the values of the curve N at the experimental points to the computer unit, and for the control pulses required for the cathode-ray tube indicator and for integration. 8 figures. [Abstracter's note: Complete translation.]

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

VITENBERG, I.M., kand.tekhn.nauk

Use of calculating machines for the control of technological processes. Zhur.VKHO 6 no.5:493-498 '61. (MIRA 14:10)
(Calculating machines) (Chemical engineering)

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S/194/62/000/005/008/157
D222/D309

16.6800

AUTHOR: Vitenberg, I.M.

TITLE: On the construction of analogue computers for the automatic determination of coefficients in a system of non-linear differential equations

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 5, 1962, abstract 5-1-94 ya (V sb. Primeneniye vychisl. tekhn. dlya avtomatiz. proiz-va, M., Mashgiz, 1961, 436-444)

TEXT: The problem of industrial process control with advance analysis is formulated. It is shown that the basic reasons for our inability of automate such processes, are the lack of transducers to transmit information about the current characteristics of the processes, the lack of the executive elements which could interpret the signals of a computer working on the advance analysis, and the lack of systems of equations to describe the process. It is shown that the problem of mathematization of the process can be reduced to the selection of constant, and sometimes variable coefficients in a

Card 1/2

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system of differential equations describing the technological process, in such a way that for all known combinations of the relationships between the input data and time, the output values, obtained by solving the system of differential equations, would correspond to the experimental relationships obtained during the investigation of the process. The search for the coefficients of a system of differential equations by means of an automatic analogue computer is considered. It is shown that the search process can be divided into three stages. The first stage is used for the selection of such coefficient values at which, with specified initial conditions, the output voltages of the units remain within permissible limits. During the second stage coefficients are selected which ensure the normal operation of the units for the whole duration of the integration period. The third stage is the main control stage. 5 figures. 5 references. [Abstractor's note: Complete translation].

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

VAL'DNER, O.A.; VITENBERG, I.M.

Electric simulation of a linear accelerator. Prib. i tekh. eksp. 6 no.4:25-26 Jl-Ag '61. (MIRA 14:9)
(Particle accelerators--Electromechanical analogies)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

BELOVA, A.I.; VITENBERG, I.M.; GLUZBERG, E.A.; KOZLOVA, A.I.

Possibility of adding stages to mathematical electrical models.
Vop. rasch. i konstr. elektron. vych. mash. no.1:57-74 '60.
(MIRA 14:1)

(Electronic analog computers)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

BELYAKOV, V.G.; VITENBERG, I.M.

Direct current amplifier with an expanded frequency characteristic.
Priborostroenie no.5:14-17 My '60. (MIRA 14:5)
(Amplifiers, Election-tube)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

VITENBERG, I.M.; PAVLIKOVA, M.G.; SHCHETININ, T.I.

Electric simulation of the characteristics of a turbojet engine. Vop. rasch. i konstr. elektron. vych. mash. no.1:84-96 '60. (MIRA 14:1)

(Aeroplanes—Turbojet engines)
(Electromechanical analogies)

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24 4160

1132, 1538, 1327, 1013

AUTHORS: Vitenberg, I.M. and Yerokhin, Ye.A.

TITLE: The use of electrical analogues for solving boundary problems

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 5, 1961, 17, abstract 5 B113 (Tr. 1-y Mezhvuz nauchno-tekhn. Konferentsii po elektr. modelirovaniya zadach stroit. mekhan., soprotivleniya materialov i teorii uprugosti. B.m. Novocherk. politekhn. in-t 1960, 34-42)

TEXT: The formulation is considered of the boundary problem for a system of ordinary linear andnon-linear differential equations and the effectiveness is noted of using electrical analogues, when solving the above problems by the search method. A short description of two methods of searching for a given solution is given: the method of minimization and the method of survey. The main fea-

Card 1/2

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The use of electrical analogues...

tures are given of the electrical analogue MN-11 (MN-11) designed at the НИИСЧЕТМАШ (NIISChETMASh) and having an automatic solution search system. The machine MN-11 can solve boundary problems as described by systems of ordinary differential equations up to the 6-9 order: it determines 6 unknowns with up to 6 boundary conditions, working periodically at frequencies from 1 to 100 kc/s. A model of MN-11 is stated to have solved, with an accuracy of 5-10%, the problem of a beam on an elastic base and the problem of caving-in of a spherical cover. The above problems have been set as boundary and described by systems of linear differential equations of the 4th order. The search for a solution was automatic and lasted 5 and 20 seconds respectively, with a periodicity of 20 c/s. 5 figures. 3 references. [Abstracter's note: Complete translation]

Card 2/2

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0

VITENBERG, I.M.; KOZLOVA, A.I.

Using d.c.operational amplifiers for the multiplication of variables. Priborostroenie no.1:6-8 Ja '61. (MIRA 14:1)
(Electronic calculating machines)

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001860120003-0"

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88999

S/119/61/000/001/003/013
B019/B067

9,7000

AUTHORS: Vitenberg, I. M., Candidate of Technical Sciences,
Kozlova, A. I., Engineer

TITLE: Circuit for the Use of a D. C. Operational Amplifier for the Multiplication of Variables

PERIODICAL: Priborostroyeniye, 1961, No. 1, pp. 6 - 8

TEXT: Simulators for the study of nonlinear systems of differential equations contain multiplication circuits, which are now widely used in measuring devices for technological processes. Multiplication circuits of simulators with d. c. operational amplifiers can be used also for multiplying variables. One of the two multiplicands is fed into the amplifier input and the transfer coefficient is varied proportionally to the second multiplicand. Thus, a voltage is generated at the amplifier output which is proportional to the product of the two input voltages. An electronic key is connected to the input resistor of the amplifier (Fig. 1) to change the transfer coefficient. This key is opened and

Card 1/4

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