SHESTAKOV, V.A.

Determining an efficient length of scraper haulage in mining systems with large-scale caving. Trudy Alt.GMNII AN Kazakh. SSR 6:126-133 '58. (MIRA 12:1)
(Mining engineering) (Mine haulage)

YERGALIYEV, A.Ye.; SHESTAKOV, V.A.

Valuation of deposits and selection of certain mining parameters with consideration of the time factor. Trudy Alt. GMNII AN Kazakh. SSR no.7:66-81 '58. (MIRA 12:7)
(Mine valuation) (Mining engineering)

SHESTAKOV, V.A.

Some of the problems involved in improving the technology of mining operations in the sublevel caving systems. Trudy Alt. GMNII AN Kazakh. SSR no.7:140-153 '58. (MIRA 12:7)
(Mining engineering)

SHUPIKOV, V.A.; SHESTAKOV, V.A.; YALYMOV, N.G.; YAKOVLEV, M.A.

Shrinkage stoping system at the Aktyuz Mine and its efficiency. Izv. AN Kir. SSR. Ser. est. i tekh. nauk 2 no.8:5-12 '60. (MIRA 13:12)

(Aktyuz region—Stoping (Mining))

SHESTAKOV, V.A.

Selecting on an over-all basis parameters for breaking and drawing from blocks in large-scale caving systems with passage to larger prepared sizes. Izv. AN Kir. SSR. Ser. est. i tekh. nauk 2 no.8: 39-47 '60. (MIRA 13:12)
(Nonferrous metals) (Ore dressing)

SHESTAKOV, V.A.

Determining depletion and ore recovery in block caving systems.
Izv. AN Kir. SSR. Ser. est. i tekh. nauk 2 no.3:49-62 '60.
(MIRA 13:12)

(Mining engineering)

SHESTAKOV, V.A.; BARANOV, Ye.G., red.; SEMIKINA, T.F., red.izd-va; ANOKHINA, M.G., tekhn.red.

[Investigating the breaking and the drawing of ore from blocks in forced top-caving systems] Issledovanie otboiki i vypuska rudy iz blokov pri sisteme etazhnogo prinuditel'nogo obrusheniia. Frunze, Akad.nauk Kirgizskoi SSR, Otdel gornogo dela i metallurgii, 1960. 129 p. (MIRA 13:12)

(Mining engineering)

SHESTAKOV, V.A.

Calculation of the charge of coking coals according to data of their petrographic composition. Trudy Tadzh.gos.un. 28 no.1:31-34 '60. (MIRA 15:1)

(Coal--Carbonization)

DMITREVSKIY, Semen Mikhaylovich, dots.; SHESTAKOV, Vadim Arkad'yevich, dots.; SHNEYDER, Anatoliy Ivanovich, dots.; FEDOSEYEV, P.D., red.; KONARDOVA, T.F., red. izd-va; SHIBKOVA, R.Ye., tekhn. red.

[Current maintenance of logging roads] Tekushchee soderzhanie lesovoznykh avtomobil'nykh dorog. Moskva, Goslesbumizdat, 1961. 73 p. (MIRA 15:4)
(Forest roads--Maintenance and repair)

SHESTAKOV, V.A.

Boring holes with BA-100 pneumatic percussion drills. Trudy Alt. GMNII AN Kazakh. SSR 10:89-94 '61. (MIRA 14:9)
(Boring machinery--Pneumatic driving)

SHESTAKOV, V.A., kand.tekhn.nauk

Problems in increasing mining efficiency under a system of forced sublevel caving in Altai mines. Vest.AN Kazakh.SSR 17 no.1:22-28 Ja '61. (MIRA 14:1)

(Altai Mountains--Mining engineering)

SHESTAKOV, V.I.

Biology of the mosquito Aëdes togoi Theob. Zool. zhur. 40, no. 2:284-285 F '61. (MIRA 14:2)

1. 178th Sanitary Epidemiological Laboratory (Marine Territory, Khasan District, Settlement Zarubino).
(Maritime Territory--Mosquitoes)

SHESTAKOV, V.A.; YALYMOV, N.G.; YAKOVLEV, M.A.; SHABANOVA, A.M.

Technical and economic evaluation of mining systems in Kirghizia mines. Izv. AN Kir. SSR. Ser. est. i tekh. nauk 3 no.3:5-23 '61. (MIRA 15:3)
(Kirghizistan--Mines and mineral resources)

SHESTAKOV, V.A.; SEKISOV, G.V.; BARANOV, Ye.G.

New method of determining the boundaries of open mining operations. Izv. AN Kir. SSR. Ser. est. i tekh. nauk 3 no.3:47-63 '61. (MIRA 15:3)

(Strip mining)

SHESTAKOV, V.A.; YALYMOV, N.G.; YAKOVLEV, M.A.

Shrinkage atope mining in Kirghizistan mines and ways to improve it. Izv. AN Kir. SSR. Ser. est. i tekh. nauk 3 no.3:77-94 '61. (MIRA 15:3)

(Kirghizistan--Stoping (Mining))

SHESTAKOV, V.A., kand.tekhn.nauk; SNEGOV, A.I., gornyy inzh.; BONDAREV, K.D., gornyy inzh.; ALIYEV, A.A., gornyy inzh.; AGZAMOV, K.Sh., gornyy inzh.; ABRAMOV, N.P.

Using deep boreholes for breaking ore in the Sumsar Mine. Gor. zhur. no.12:8-10 D '62. (MIRA 15:11)

1. Institut gornogo dela i metallurgii AN Kirgizskoy SSR (for Shestakov, Snegov, Bondarev, Aliyev, Agzamov).
2. Sumsarskiy rudnik (for Abramov).
(Sumsar region--Boring--Labor productivity)
(Blasting)

SEKISOV, Gennadiy Valentinovich; SHESTAKOV, V.A., kand. tekhn. nauk, otv. red.

[Direct method of determining losses and depletion of ore in mining complex deposits (using the Khaydarken Mine as an example)] Priamoi metod opredeleniia poter' i razubozhivaniia rudy pri razrabotke slozhnykh mestorozhdenii (na primere Khaidarkanskogo rudnika). Frunze, Izd-vo "Ilim," 1964. 103 p. (MIRA 17:12)

MUKHIN, Mikhail Yegorovich; SHESTAKOV, Viktor Aleksandrovich; YALYMOV, Nariman Galimovich; MOSINETS, V.N., otv. red.

[Underground mining systems in Kirghizia] Sistemy podzemnoi razrabotki na rudnikakh Kirgizii. Frunze, Izd-vo "Ilim," 1965. 105 p. (MIRA 18:6)

MUKHIN, M.Ye., otv. red.; SHESTAKOV, V.A., red.; YALYMOV, N.G., red.; KUCHKIN, V.A., red.

[Improving systems of ore mining in unstable rock] Sovershenstvovanie sistem razrabotki rudnykh mestorozhdenii v neustoichivykh porodakh. Frunze, "Ilim," 1965. 180 p. (MIRA 18:11)

1. Akademiya nauk Kirgizskoy SSR, Frunze. Institut fiziki i mekhaniki gornykh porod.

4

L 2535-66 EWT(m)/EWA(d)/EWP(t)/EWP(z)/EWP(b) JD UR/0120/65/000/004/0182/0187
ACCESSION NR: AP5021359 621.318.3:621.384.634

50
30

AUTHOR: Akhmanov, V. V.; Barkov, L. M.; Nikol'skiy, B. A.; Sokolov, B. V.; Khakimov, S. Kh.; Shestakov, V. D.; Bobovikov, R. S.; Dobretsov, Yu. P.; Zamolodchikov, B. I.

TITLE: An arrangement for producing pulsed magnetic fields of strengths up to 150 kilogauss

SOURCE: Pribory i tekhnika eksperimenta, no. 4, 1965, 182-187

TOPIC TAGS: pulsed magnetic field, thyratron, synchrocyclotron

ABSTRACT: The units of an apparatus for producing a pulsed magnetic field of 146 kilogauss in a space of about 600 cm^3 are described. Pulsed magnets of beryllium bronze are powered by a capacitor bank of 0.1 farad capacitance. The capacitors are charged through limit resistances to 2 kv from a thyratron rectifier, and a I-100/5 ignitron is used as the switching element. Synchronization and control for operation with a synchrocyclotron are obtained by a special circuit. This arrangement for obtaining the pulsed field operates reliably. In the tests two separate magnets were used, each producing a field of 146 kilogauss. The use of the I-100/5

Card 1/2

L 2535-66 20
ACCESSION NR: AP5021359

ignitron when proper heating and cooling were maintained prior to switching in the field secured operation without breakdown for 20—40 hr at a switching rate of 10/min. The joint operation of the pulsed magnet with the synchrocyclotron required some rearrangement of the control system to guarantee that no particle was emitted without accompaniment of a pulsed magnetic field. "The authors express their thanks to V. I. Danilov, T. N. Tomilina, and I. B. Yanchevich for carrying on the work. The authors are grateful to I. I. Gurevich and V. P. Dzhelepov for their constant interest and help in the work. The authors express their thanks to V. I. Smirnov, F. Ye. Gugnin, I. P. Lavrushkin, Yu. V. Maksimov, A. V. Shestov, V. I. Ivanov, I. M. Markachev, A. F. Burtsev, B. V. Degtyarev, N. P. Chistyakov, and M. T. Berezov for their aid in maintaining and operating the equipment." Orig. art. has: 11 figures and 1 table. [04]

ASSOCIATION: Institut atomnoy energii GKAE, Moscow (Institute of Atomic Energy GKAE); LYaP OIYaI ; NII EFA; MIFI

SUBMITTED: 17Jun64 ENCL: 00 SUB CODE: EM NP

NO REF SOV: 001 OTHER: 003 ATD PRESS: 4110

Card 2/2

L 8202-66 JXT(C2)
ACC NR: AT5022299 SOURCE CODE: UR/3136/64/000/620/0001/0011

AUTHOR: Gurevich, I. I.; Makar'ina, L. A.; Nikol'skiy, B. A.; Sokolov, B. V.; Surkova, L. V.; Khakimov, S. Kh.; Shestakov, V. D.; Dobretsov, Yu. P.; Akhmanov, V. V.

ORG: [Gurevich, Makar'ina, Nikol'skiy, Sokolov, Surkova, Khakimov, Shestakov] IAE; [Dobretsov] MIFI; [Akhmanov] LYaP OIYaI

TITLE: Asymmetry of the angular distribution of electrons in the decay $\pi^+ \to \mu^+ \to e^+$ in a magnetic field of 140,000 gauss

SOURCE: Moscow. Institut atomnoy energii. Doklady, IAE-620, 1964. Asimmetriya uglovogo raspredeleniya elektronov pi plus → mu plus → e plus raspada v magnitnom pole napryazhennost'yu 140 000 gauss, 1-11

TOPIC TAGS: mu meson, pi meson, positron, bubble chamber, radioactive decay

ABSTRACT: The universal V-A coupling theory applied to the determination of the angular distribution of electrons in the reaction $\pi^+ \to \mu^+ \to e^+$ is given by

$$\frac{dN}{d\theta} \sim 1 - a \cos \theta_e$$

in terms of the parameter a. In order to obtain a value of a which depends on the polarization state of the meson, an experiment was performed showing the effect countering the depolarization of the dense medium through which the meson is moving.

Card 1/2

L 8202-66
ACC NR: AT5022299 O

Critical magnetic fields needed to oppose the depolarizing effect, which in turn allows more accurate determination of the parameter a, were found. Only 8800 gauss were required in the hydrogen bubble chamber to counter the effect of hydrogen depolarization. However, the scatter in the value is quite large. The photographic emulsion yielded much smaller scatter but required an application of a very large magnetic field of 140,000 gauss. The value of a found in the experiment is 0.325 ± .010 (as compared to the theoretical value of 0.353). This value was obtained by analyzing over 66,000 events. A brief discussion is given of the effect of the magnetic field on the motion of the electron. It is shown that the electron direction must be measured with respect to the magnetic field direction after setting certain constraints on the selection of the angular range. Orig. art. has: 3 figures, 1 table, 5 formulas.

SUB CODE: 18/ SUBM DATE: 00/ ORIG REF: 005/ OTH REF: 007

nw
Card 2/2

L 15166-66 EWT(d)/EWP(1) IJP(c) BB/GG

ACC NR: AP5027014 SOURCE CODE: UR/0120/65/000/005/0094/0096

AUTHOR: Gol'bek, G. R.; Shestakov, V. D.

ORG: Institute of Atomic Energy, GKAE (Institut atomnoy energii GKAE)

TITLE: Transistorized reversible decimal pulse counter

SOURCE: Pribory i tekhnika eksperimenta, no. 5, 1965, 94-96

TOPIC TAGS: pulse counter, transistorized pulse counter

ABSTRACT: A reversible decimal pulse counter is described which is intended for computers and in which the sequential connections between its triggers are permanent. The decimal count is materialized by a transistor switch which applies the ninth arriving pulse to the second and third triggers. An experimental model built with P16 transistors and D1 diodes exhibited a stable operation with forward and reverse directions with (a) a supply voltage of 3—15 v, (b) a repetition rate from single pulses to 120 kc, (c) an input-pulse amplitude of 50—100% supply voltage. The resolving time of the counter is 7×10^{-6} sec. Its disadvantage, low input impedance. Orig. art. has: 2 figures and 1 table.

SUB CODE: 09 / SUBM DATE: 29Apr64 / ORIG REF: 001 / OTH REF: 001

Card 1/1

UDC: 681.142.6

SHPETAKOV, V.D.

VIL laboratory pulverizer. Neft. i gaz. prom. no.3:37-38 (MIRA 17:12)
Jl-S '64.

...0358/64/000/001/A031/A...

...fizika, No. 1A331

...kulev, V. A.; Okulov, B. V.; Otrubyannikov, Yu. A.
... A.; Skorikov, A. G.; Shestakov, V. G.

... of starting a pulsed two-chamber ste...o betatron

...Izv. Tomskogo pol...kh...n-ta, v. 122, 1962, 50-...

...: stereo betatron, pul... ...eo betatron, two channe...
... betatron, ionization measu... ...radiation dose power,
... gamma ray intensity, ster... ...betatron radiation yield,
... klung pulse

...TOR: A two-channel pulsed stereo-betatron for 25 MeV wi...
... radiation intensity was started and put in operation a...

[illegible] Polytechnic Institute in 1960. The electromagnet of the [illegible]paratus was fed with 2760 A current pulses at 7.5 kV and at a [illegible]pedition frequency of 0.2 cps. The injection voltage and current [illegible]ere 300--400 kV and 1.6 A. A special system for dropping the elec[illegible]rons on the target made it possible to obtain bremsstrahlung pulse[illegible]s not exceeding 0.2 microsecond in duration. (For details see RZhFiz[illegible] 1963, 12A381, 382.) To register the radiation pulses, a standard "Kakadu" x-ray meter was used with an aluminum one-liter DIG-1 ionization chamber. It was impossible, however, to measure the radiation dose with the available instruments. Consequently, a rough qualitative estimate of the radiation dose power per pulse was made using a method in which a radiation pulse was transmitted through a lead layer of maximum possible thickness. It was found that at optimal gamma-radiation intensity a pulse from one accelerator chamber can pass through a lead 14-cm layer located 1 meter away from the accelerator target. This corresponds to an approximate dose of 50 roentgens. If it is assumed that during one acceleration cycle the

...SION NR: AR4022437

... the stereo-betatron beam amounts to only 5 roentgens, the... the radiation yield of the stereo-betatron is 250--300 times larger than in existing betatrons of the same energy. The dimensions o... the focal spot did not exceed 4 x 2 mm in the right-hand accelerator chamber, and 10 x 1 mm in the left. The number of accelerated electrons is ~5 x 10^{11}. V. Voronin.

DATE ACQ: 03Mar64 SUB C... SD ENCL: 00

Card 3/3

L 25069-65 EWT(m)/EPA(w)-2/EWA(m)-2 Pab-10/Pt-10 IJP(c)

ACCESSION NR: AR4045745 S/0275/64/000/007/A051/A051

SOURCE: Ref. zh. Elektronika i yeye primeneniye. Svodnyy tom, Abs. 7A298 36 B

AUTHOR: Moskalev, V. A.; Skvortsov, Yu. Zh.; Okulov, B. V.; Shestakov, V. G. 19

TITLE: Measurement and recording of fall current in a 25-Mev stereobetatron

CITED SOURCE: Sb. Elektron. uskoriteli. M., Vyssh. shkola, 1964, 204-209

TOPIC TAGS: betatron, stereobetatron

TRANSLATION: Results of a study of acceleration process and beam characteristics are reported. Possibility is considered of determining the charge of accelerated electrons by a direct measurement of the charge of the electrons that struck the target. For measuring the accelerated-electron charges, a combination circuit is used which records simultaneously the target current and the signal induced in a special indicating electrode; the circuit can operate at any particle energy. Stereobetatron potentialities as a pulse flow detector were assessed by using it for examination of a lead bar having artificial defects. The circuits are supplied, and the experimental results are discussed.

SUB CODE: NP ENCL: 00

Card 1/1

ACCESSION NR: AP4041009 S/0120/64/000/003/0032/0033

AUTHOR: Moskalev, V. A.; Shestakov, V. G.; Okulov, B. V.; Skvortsov, Yu. M.

TITLE: Method for measuring accelerated charge in a betatron

SOURCE: Pribory* i tekhnika eksperimenta, no. 3, 1964, 32-33

TOPIC TAGS: betatron, betatron measurements, betatron accelerated charge

ABSTRACT: A combined -- direct and indirect -- method for measuring a charge developed by the authors (registration no. 34311, priority of 01Feb63) is briefly described. The target current pulse is recorded simultaneously with a signal induced in a special "indicating electrode." At an energy under 1 Mev, the electrode signal is calibrated directly and then the calibration is used for measuring the charge with any energy. Two oscillograms taken at 0.5 and 25 Mev illustrate the method. Orig. art. has: 2 figures.

ASSOCIATION: none

SUBMITTED: 07Jun63 ENCL: 00

SUB CODE: NP NO REF SOV: 005 OTHER: 002

Card 1/1

SHUSTAKOV, V.G.; SHABAROVA, Z.A.; PROKOF'YEV, M.A.

Synthesis of adenosine-triphospho-phenylalanine. Vest.Mosk.un.Ser. 2:Khim. 19 no.4:81-84 JU-Ag '64. (MIRA 18:8)

1. Kafedra organicheskoy khimii Moskovskogo universiteta.

SHESTAKOV, V.G.; SHABAROVA, Z.A.; PROKOF'YEV, M.A.

Properties of methyl ester of P^1-(adenosine-5') -diphospho-(P^2 → N) phenylalanine. Biokhimiia 29 no.4:690-696 Jl-Ag '64. (MIRA 18:6)

1. Laboratoriya khimii nukleinovykh kislot khimicheskogo fakul'teta Gosudarstvennogo universiteta imeni Lomonosova, Moskva.

SOMOV, G.P.; SHESTAKOV, V.I.

Spontaneous infection of Haemaphysalis japonica douglasi Nutt. and Warb. ticks by rickettsia of Dermacentor sibiricus in Maritime Territory. Zhur.mikrobiol.,epid.i immun. 40 no.12:51-56 D '63. (MIRA 17:12)

1. Iz Vladivostokskogo instituta epidemiologii, mikrobiologii i gigiyeny.

SHESTAKOV, V.I.; IVANOV, K.S.

Further study on the biology of mosquitoes living in tree cavities of the southern Maritime Territory. Zool. zhur. 43 no.7:1081-1082 '64.
(MIRA 17:12)

1. Research Institute of Epidemiology, Microbiology and Hygiene. Vladivostok.

[illegible]HESTAKOV, V.S., SHABAROVA, Z.A., PROKOF'YEV, M.A.

Study of the kinetics of ADP-amino acid hydrolysis. Biokhimiia (MIRA 18:6)
30 no.1:77-80 Ja-F '65.

1. Laboratoriya khimii nukleinovykh kislot khimicheskogo fakul'teta Moskovskogo universiteta imeni Lomonosova, Moskva.

[illegible], V. I., Cand. Phys-Math. Sci.

"The Algebra for Two-Terminal Systems, Constructed Exclusively from Two-Terminal Networks (Algebra of A-Systems)", (Thesis for Candidate's Degree read at the Moscow State University imeni M. V. Lomonosov). Vol 6, No 2.

Avtomatika i Telemekhanika, No. 2, 3, 4, 5, (1941).

SHESTAKOV, V. I.

Algebra dvukhpolyusnykh skhem, postroyenny kh isklyuchitel'no iz dvukhpolyusnikov (algebra A-skhem). Zh. Tekhn. fiz., 11:6 (1941).

SO: Mathematics in the USSR, 1917-1947
edited by Kurosh, A.G.,
Markushevich, A.I.,
Rashevskiy, P.K.
Moscow-Leningrad, 1948

SHESTAKOV V

Shestakov, V. Representation of characteristic functions of propositions by expressions realizable by relay-contact circuits. Bull. Acad. Sci. URSS. Sér. Math. [Izvestia Akad. Nauk SSSR] 10, 529–554 (1946). (Russian. English summary)

The function $\omega_\alpha(p)$ of the proposition p is defined by $\omega_\alpha(p)=\omega$ if p is true and $\omega_\alpha(p)=\alpha$ if p is false; $\omega_0(p)=[p]$. Then $[\sim p]=[p]^{-1}$; $[p\vee q]=[p]+[q]$; $[p\cdot q]=[p]*[q]$, where $x*y=(x^{-1}+y^{-1})^{-1}$. On the other hand, let Cx designate the conductivity of an electric contact, so that $Cx=\infty$ when x is shut and $Cx=0$ when x is open. Then $(Cx)^{-1}=Cy$ if y is a contact which is open when x is shut and inversely; $Cx+Cy$ is the conductivity of x and y in series; $Cx*Cy$ that of x and y shunted. Thus to every expression f from the calculus of propositions, built up with the variables $p_1, \cdots, p_n$ by means of negation, conjunction and disjunction, an electric circuit R, consisting of contacts and relays, may be constructed, such that (1) to every p_i corresponds a contact x_i in R; (2) R contains a contact z such that, for every system of truth-values $(\infty, 0)$ of the p_i, if the x_i are so placed that $Cx_i=[p_i]$ $(i=1, \cdots, n)$, then $Cz=[f]$. By the relation $\omega_\alpha(p)=\omega*[p]+\alpha*[\bar{p}]^{-1}$ this result is extended to the functions $\omega_\alpha(p)$. A further extension to n-valued logic is obtained by using n-position switches. *A. Heyting.*

Source: Mathematical Reviews, Vol 8 No. 8

SHESTAKOV, V.I.

1-F\W

Šestakov, V. I. Modelling the operations of the propositional calculus by means of the simplest four-pole networks. Vyčisl. Mat. Vyčisl. Tehn. 1 (1953), 56–89. (Russian)

The author discusses various ways of representing operations of propositional algebra by combinations of circuit units. Three kinds of such units are considered, viz. two-pole units, four-pole units, and commutators. A two-pole unit is simply an admittance between two terminals; for the representation considered the admittance is either 0 (open circuit) or ∞ (short-circuit). A four-pole unit is a device with two input and two output terminals; the representation can be in terms of either the voltage ratio or the current ratio of output to input; the situation lends itself to representation in terms of 0 and 1. A commutator is a four-pole unit such that the output is either the same as the input or is the same with reversed polarity; this lends itself to identification of truth and falsity with 1 and −1. The paper discusses the basic logical connections and a suitable algebraic expression in all these cases. At the end there is a discussion of the design of a binary adder. (The treatment is elementary and clear; its newness the reviewer is not able to judge.)

H. B. Curry (University Park, Pa.).

MAMONOV, Ye.I., [translator]; SADOVSKIY, L.Ye.[translator]; KHETAGUROVA, Ya.A.[translator]; SHESTAKOV, V.I., redaktor.

[Synthesis of electronic computing and control circuits] Sintez elektronnykh vychislitel'nykh i upravliaiushchikh skhem. Perevod s angliiskogo E.I.Mamonova, L.E.Sadovskogo i IA.A.Khetagurova. Pod red. V.I.Shestakova. Moskva, Izd-vo inostrannoi lit-ry, 1954. 357 p. (MLRA 7:8)
(Electronic calculating machines)

SHESTAKOV, V. I.

Algebraic Method of Analysis of Autonomous Systems of Two-Position Relays. Avtomatika i telemekhanika, Vol 15, No 2, 1954, pp 107-123

Any group of relays together with its governing and governed parameters is called a relay system. The author investigated processes which are possible in an autonomous relay system with identical lags T during wear and loosening. Such a system is described by n equations $y_k(t) = f_k(y_1(t - T), \ldots, y_n(t-T))$. The author also uses vector notation somewhat different from the standard. (RZhMat, No 5, 1955)

SO: Sum. No. 639, 2 Sep 55

SHESTAKOV, V. I.

"Algebraic method for synthesizing autonomic systems of two-position relays", Avtomatika i Telemekhanika, Vol 15, No 3,4,5, 1954

Abs

W-31148, 7 Feb 55

SHESTAKOV, V. I.

USSR

1 - F/W

Šestakov, V. I. On transformation of a monocyclic sequence into a recurrent one. Dokl. Akad. Nauk SSSR (N.S.) 98, 541–544 (1954). (Russian)

The author considers a sequence of n-digit binary integers

$$\eta(0), \eta(1), \eta(2), \cdots$$

which are ultimately periodic but are subject to the conditions that the initial non-periodic part together with the proper period consist of distinct integers. Such a sequence is produced when

$$\eta(i+1)=\phi(\eta(i)),$$

where ϕ is a single-valued function whose values are integers $<2^n$ (a condition not explicitly stated by the author). Conversely, any sequence η of the above type determines such a function ϕ. Mention is made of an application to a system of n relays presumably of a digital computer. If the ith relay is energized at the jth program step then we may take the ith digit of $\eta(j)$ to be 1, otherwise it is zero. The system of relays is thus equivalent to a function ϕ. The author states that his theory extends to the case of $n\to\infty$.

D. H. Lehmer (Berkeley, Calif.).

SHESTAKOV, V. I.

USSR

MS 62

Šestakov, V. I. An algebraic method of systhesis of multi-step relay systems. Dokl. Akad. Nauk SSSR (N.S.) 99, 987–990 (1954). (Russian)

T - F/W

The author is concerned with the design of relay systems presumably for a digital computer. He uses a vector representation method in which the components are elements of a Boolean algebra and the three operations

$$u' = 1 - u,$$
$$u \cdot v = uv,$$
$$u \oplus v = u + v \pmod 2$$

applied termwise to these vectors to construct characteristic functions for the expansion of a desired relay function. The treatment is only general and full of obscurities. Reference is made to the paper reviewed above. *D. H. Lehmer.*

SHESTAKOV, V.I.

Call Nr: AF 1108825

Transactions of the Third All-union Mathematical Congress (Cont.) Moscow, Jun-Jul '56, Trudy '56, V. 1, Sect. Rpst., Izdatel'stvo AN SSSR, Moscow, 1956, 237 pp.
There are 2 references, 1 of which is USSR, and another is English.

Tseytin, G. S. (Leningrad). Problem of Identification of the Properties of Associative Calculus. 189

Mention is made of Markov, A. A.

There are 2 references, both of them USSR.

Shanin, N. A. (Leningrad). On Constructive Understanding of Mathematical Reasoning. 189-190

Mention is made of Kolmogorov, A. N.

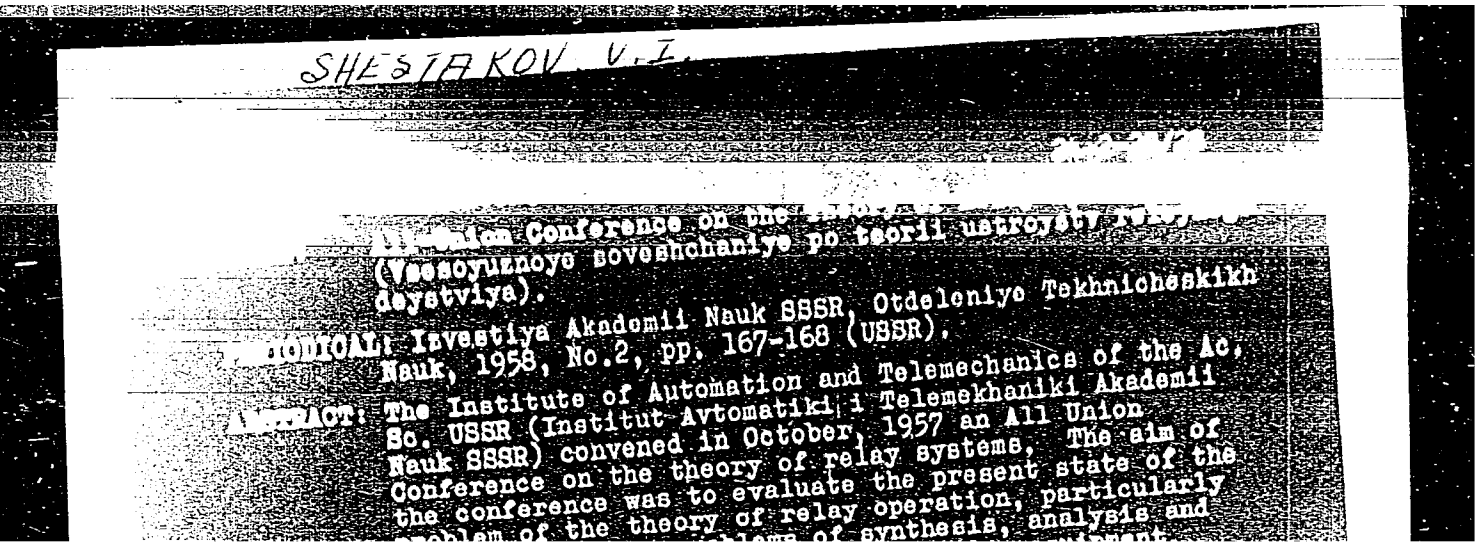
There are 2 references, 1 of which is USSR, and the other English.

Shestakov, V. I. (Moscow). Vectorial-algebraic Method Applied to the Analysis and Synthesis of Multicycle Relay Systems. 190-191

Card 61/80

notes a certain univocal vector function of $\vec{z}$. Such variables and/or functions are called "r-variables" and/or "r-functions" the range of values of which is the quantity $\{0,1,\ldots, r-1\}$. The components of "r-vectors" can assume only values of this quantity. Next, an equation which is valid for any univocal r-function $\vec{F}(\vec{u})$ of the r-vector $\vec{u}$ is written down. The corresponding formula represents the normal form of the vectorial r-function $\vec{F}(\vec{u})$. Next, the algorithmus of the determination of the function $\vec{F}$, i.e. the algorithm for the synthesis of the relay system is formulated. The method described permits construction of the function $\vec{F}(\vec{z}) = \vec{f}(\vec{x},\vec{y})$ from the components of the r-vectors $\vec{x}$ and $\vec{y}$ with the help of operations of BABB' (or BUBB ?) algebra. If the assumed sequence of the values $\vec{y}(j)$ of the vector $\vec{y}$ does not satisfy a certain condition mentioned in the previous work cited, there exists no univocal function $\vec{F}$ that satisfies the equation $\vec{y}(j+1) = \vec{F}(\vec{z}(j))$. However, in some cases it is possible to extend the assumed sequences of the values $\vec{y}(j)$ of the vector $\vec{y}$ to such an extent by increasing the number of components of this vector that the aforementioned condition is satisfied for the further sequence. For the algebraic description of the structure of the here discussed systems the algebra of equivocal logics (algebra by BUBB ?) can be used.

INSTITUTION: MOSCOW STATE UNIVERSITY.

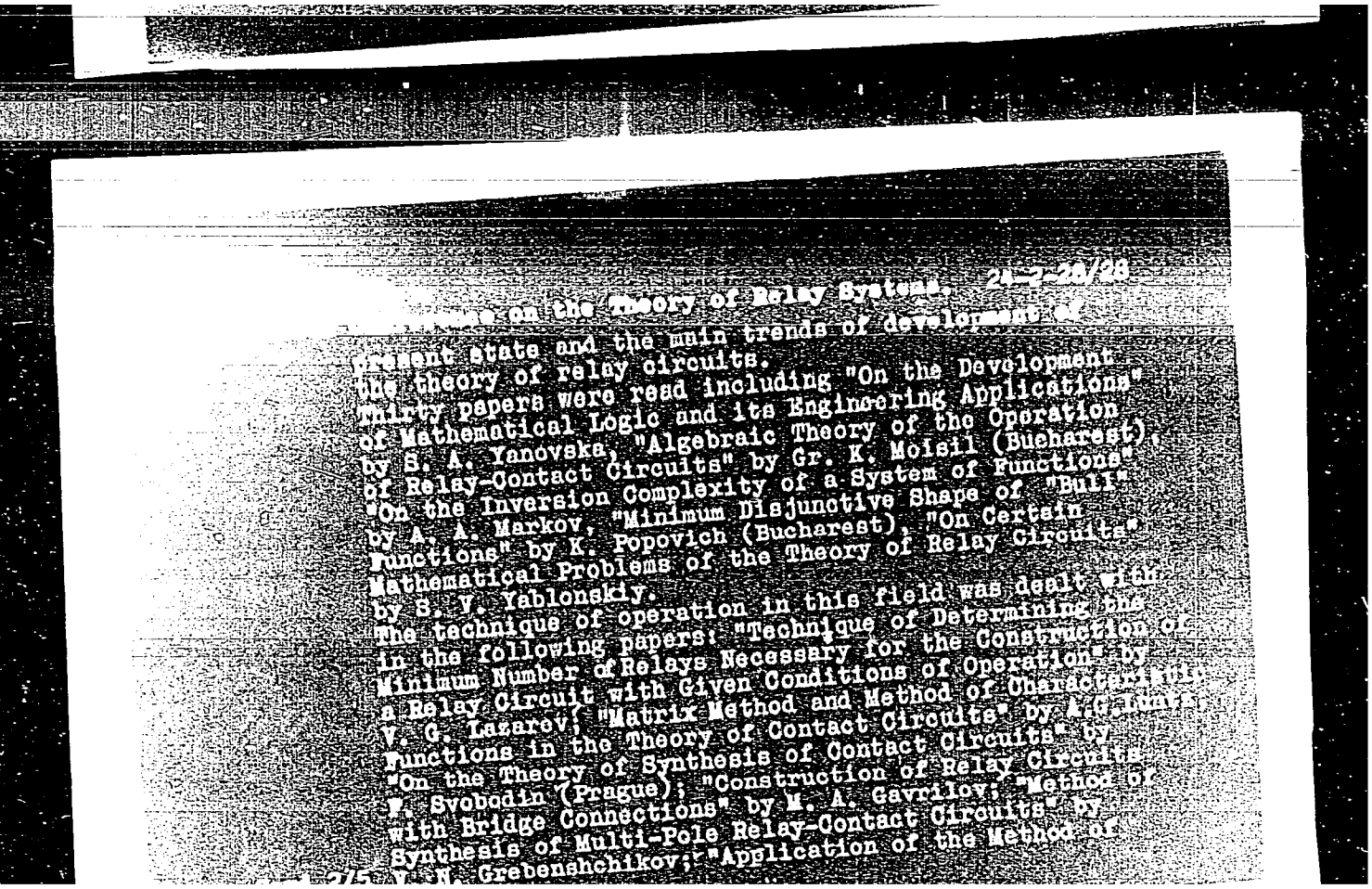


SHESTAKOV, V.I.

(Vsesoyuznoye soveshchaniye po teorii ustroystv ... deystviya).

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

ABSTRACT: The Institute of Automation and Telemechanics of the Ac. Sc. USSR (Institut Avtomatiki i Telemekhaniki Akademii Nauk SSSR) convened in October, 1957 an All Union Conference on the theory of relay systems. The aim of the conference was to evaluate the present state of the theory of relay operation, particularly ... of synthesis, analysis and

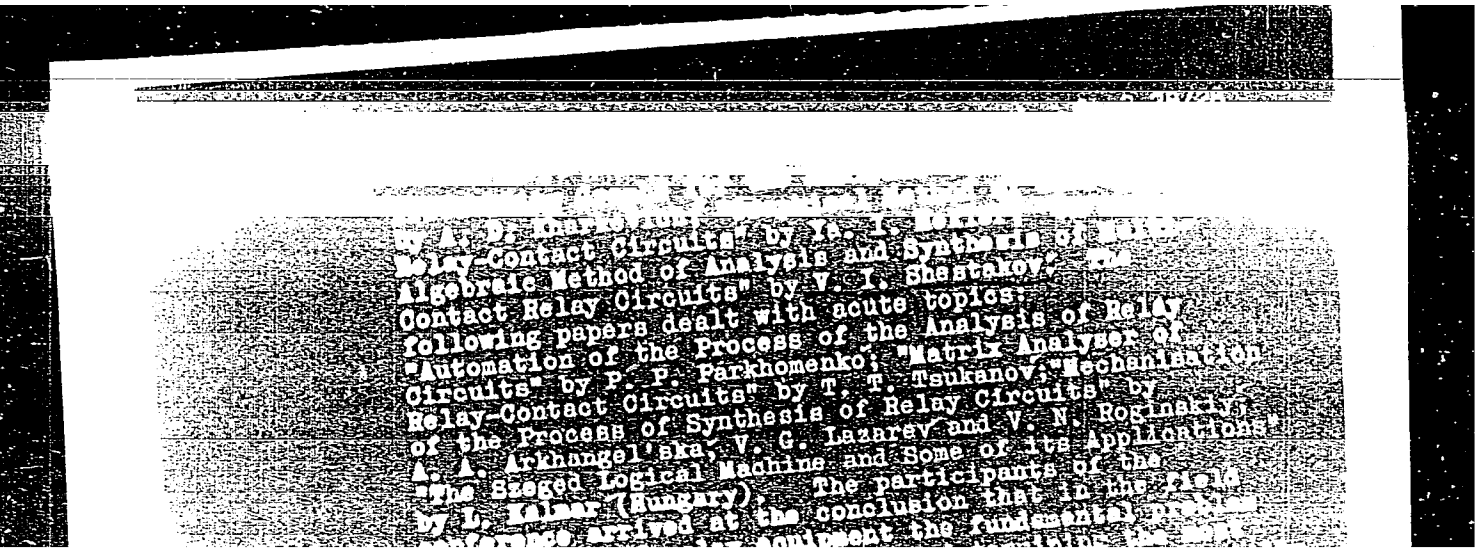


on the Theory of Relay Systems. 24-7-28/28

present state and the main trends of development of the theory of relay circuits.

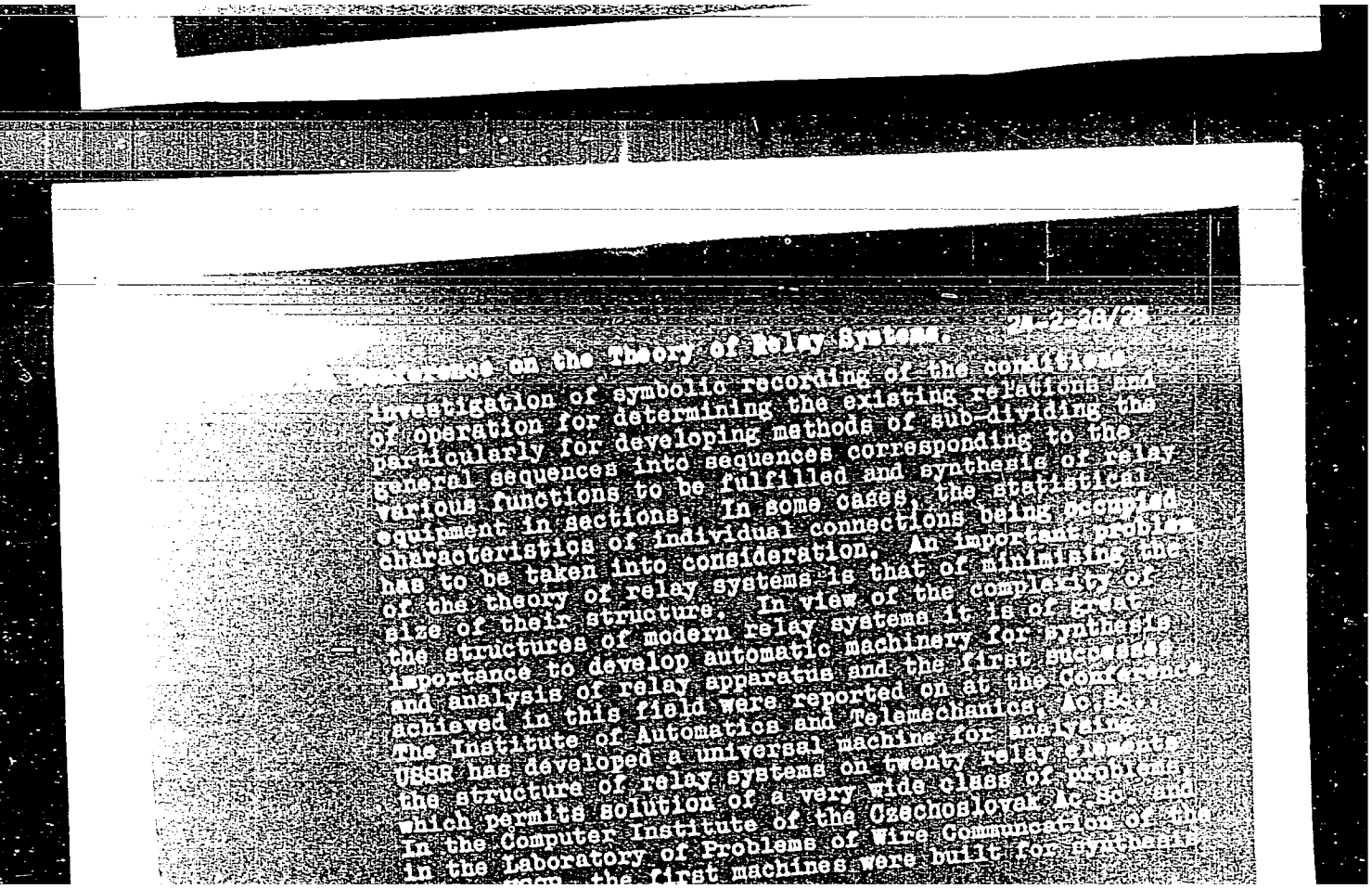
Thirty papers were read including "On the Development of Mathematical Logic and its Engineering Applications" by S. A. Yanovska; "Algebraic Theory of the Operation of Relay-Contact Circuits" by Gr. K. Moisil (Bucharest); "On the Inversion Complexity of a System of Functions" by A. A. Markov, "Minimum Disjunctive Shape of "Bull" Functions" by K. Popovich (Bucharest); "On Certain Mathematical Problems of the Theory of Relay Circuits" by S. V. Yablonskiy.

The technique of operation in this field was dealt with in the following papers: "Technique of Determining the Minimum Number of Relays Necessary for the Construction of a Relay Circuit with Given Conditions of Operation" by V. G. Lazarov; "Matrix Method and Method of Characteristic Functions in the Theory of Contact Circuits" by A. G. Mayst; "On the Theory of Synthesis of Contact Circuits" by J. Svoboda (Prague); "Construction of Relay Circuits with Bridge Connections" by M. A. Gavrilov; "Method of Synthesis of Multi-Pole Relay-Contact Circuits" by [illegible] N. Grebenshchikov; "Application of the Method of

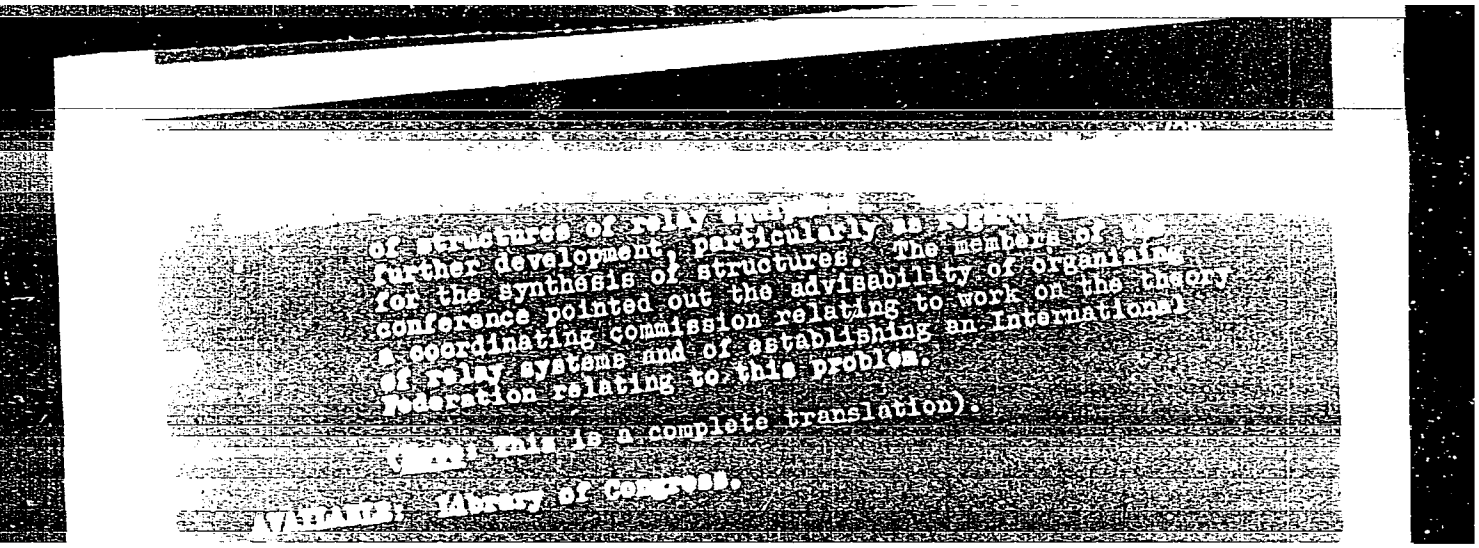


Relay-Contact Circuits" by A. D. [illegible]; "Synthesis of Relay-Contact Circuits by [illegible] Algebraic Method of Analysis and Synthesis of Contact Relay Circuits" by V. I. Shestakov.

Following papers dealt with acute topics: "Automation of the Process of the Analysis of Relay Circuits" by P. P. Parkhomenko; "Matrix Analyser of Relay-Contact Circuits" by T. T. Tsukanov; "Mechanization of the Process of Synthesis of Relay Circuits" by A. A. Arkhangel'ska, V. G. Lazarev and V. N. Roginskiy; "The Szeged Logical Machine and Some of its Applications" by L. Kalmar (Hungary). The participants of the [illegible] arrived at the conclusion that in the [illegible]



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



of structures of fully [illegible]
further development, particularly in relation
for the synthesis of structures. The members of
conference pointed out the advisability of organizing
a coordinating commission relating to work on the theory
of fully systems and of establishing an International
federation relating to this problem.

[illegible] is a complete translation).

[illegible] Library of Congress.

SHESTAKOV, V. I.

"The Algebraic Method of Analysis and Synthesis."

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

SHESTAKOV, V.I. (Moskva)

Mathematical logic and automatic control. Mat. v shkole no.6:4-20 N-D '58. (MIRA 11:12)
(Logic, Symbolic and mathematical) (Automatic control)

AUTHORS: Sheatakov, V. I., Terent'yev, D. F. SOV/64-58-6-3/15

TITLE: The Determination of Optimum Temperature Conditions of Running Contact Apparatus for the Oxidation of Sulfur Dioxide (Opredeleniye optimal'nogo temperaturnogo rezhima deystvuyushchikh kontaktnykh apparatov dlya okisleniya dvuokisi sery)

PERIODICAL: Khimicheskaya promyshlennost', 1958, Nr 6, pp 350-354 (USSR)

ABSTRACT: Optimum conditions for contact apparatus with adiabatic catalyst layers are determined according to the method developed by G. K. Boreskov (Ref 1). During the operation of the apparatus the activity of the catalyst decreases. Therefore, an excess of contact substance is generally used; however, this excess is limited since its presence results in an increase of the hydraulic resistance and thus causes efficiency to decrease. If the activity of the contact substance is reduced by the two- or threefold, the operation of the contact apparatus is disturbed and a redetermination of optimum operating conditions considering the actual state of the catalyst, becomes necessary. The present paper deals with the solution of this problem. The determination of the optimum operation (for each layer separately) was carried out according to the

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The Determination of Optimum Temperature Conditions of Running Contact Apparatus for the Oxidation of Sulfur Dioxide

graphic method. The diagrams in question are given. Inter alia, the calculation is given for an apparatus of the K-39-4 type. On principle, the diagrams refer to contact substances which already have been used for some time and have lost part of their effectiveness. If there is a new contact substance the diagrams make it possible to evaluate the quality of the material in question. New substances should be used in the first two layers in quantities which guarantee a contact from the ignition to a point near the equilibrium. That is why the initial temperature should not be increased, since this would lead to a lessening of the effect. There are 8 figures, 1 table, and 3 references, which are Soviet.

AUTHOR: Shestakov, V. I. (Moscow) 103-19-6-8/13

TITLE: A Method of Punched Cards for the Synthesis of Switching Systems(Perfokartochnyy metod sinteza mnogotaktnykh releynykh sistem)

PERIODICAL: Avtomatika i telemekhanika, 1958, Vol 19, Nr 6, pp 592 - 605 (USSR)

ABSTRACT: One of the simplest methods for the mechanization of the vector-algebraic method for the synthesis of switching systems is given here. The method is based on the use of special cards and was therefore called the method of punched cards for the synthesis of switching systems. It is assumed here that the reader is acquainted with the vector-algebraic method of the synthesis of switching systems. Therefore only little information is given on this method. Then the use of special cards for the synthesis of autonomous relay systems and the realization of the synthesis of non-autonomous relay systems by means of special cards is explained in two chapters. At the end it is pointed out that the synthesis of autonomous systems can also be performed by means of cards β destined for the synthesis of non-

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autonomous switching systems. On this occasion the cards α (for the synthesis of autonomous switching systems) are not used and only the cards β are used in the same manner as cards α. There are 9 figures, 1 table, and 10 references, 4 of which are Soviet.

SUBMITTED: December 26, 1957

1. Switching circuits--Synthesis

S/055/59/000/06/27/027
B004/B002

AUTHOR: Shestakov, V. I.

TITLE: The Theory of the Synthesis of Mixed Relay - Contact Circuits of Class P

PERIODICAL: Vestnik Moskovskogo universiteta. Seriya matematiki, mekhaniki, astronomii, fiziki, khimii, 1959, No. 6, pp. 215 - 223

TEXT: The author opposes papers by V. N. Roginskiy (Refs. 1 - 5, 8) on circuits of control relays. He doubts the applicability of the Boolian algebra for the analysis and synthesis of relay-contact circuits of class P which in addition to contacts and relay windings also have resistors that can be connected in parallel or in series. Some data by Roginskiy are discussed, and their inadequacy in algebra is shown. Furthermore, Roginskiy's concept of "the order of magnitude of conductivity" represented by the symbols $G_{=A}$, $G_{>A}$, $G_{<A}$ is discussed (Fig. 1). Roginskiy's statement "if $A_{>B}$ and $B_{>A}$, the connection is physically not possible", is refuted. The author also mentions papers by M. A. Gavrilov (Ref. 6), V. N. Roginskiy and A. D. Kharkevich (Ref. 7). There are 1 figure and 8 Soviet references.

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The Theory of the Synthesis of Mixed Relay - Contact Circuits of Class P

S/055/59/000/06/27/027
B004/B002

ASSOCIATION: Kafedra obshchey fiziki (Chair of General Physics)

SUBMITTED: July 16, 1959

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SHESTAKOV, V. I.

PHASE I BOOK EXPLOITATION SOV/5083

Akademiya nauk SSSR

Primeneniye logiki v nauke i tekhnike (Application of Logic in Science and Technology) [Moscow] Izd-vo AN SSSR [1960] 357 p. Errata slip inserted. 10,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR.

Editorial Board: Resp. Ed.: I. V. Tavanets; E. Ya. Kolman, G. N. Povarov and S. A. Yanovskaya; Ed. of Publishing House: R. Yu. Rozenberg; Tech. Ed.: S. T. Markovich.

PURPOSE: This book is intended for scientists interested in mathematical and symbolic logic.

COVERAGE: The book is a collection of 16 articles in which the authors discuss problems of mathematical logic and its application to computers, linguistics, zoology, methodology and various fields of technology. No personalities are mentioned. References follow all but one article.

AVAILABLE: Library of Congress

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Card 4/4

SHESTAKOV, V.I.; SINENKO, S.A.

Study of bird's fleas in the foci of Japanese encephalitis.
Med.paraz.i paraz.bol. no.3:306-307 '61. (MIRA 14:9)
(ENCEPHALITIS) (PARASITES--BIRDS) (FLEAS)

82457

16.6800

S/141/60/003/03/012/014
E192/E382

AUTHOR: Shestakov, V.I.

TITLE: The Problem of Synthesis of Hybrid Π-Class Switching Systems

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, 1960, Vol. 3, No. 3, pp 526 - 533

TEXT: Boolean algebra is quite adequate for the analysis and synthesis of switching systems of the Π-class, but it is insufficient in the structural analysis of the Π-class systems when these comprise relay coils and resistances as well as contacts, push buttons and keys. In the following, an attempt is made to investigate the applicability of the algebra and to determine such switching systems where the algebra is inadequate. A Π-class system can be uniquely described by means of an algebraic equation whose terms are interrelated by operations of addition and harmonic addition. The harmonic addition is described by:

$$X \circ Y = (X' + Y')' \qquad (1)$$

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The Problem of Synthesis of Hybrid Π-Class Switching Systems

where + denotes the usual addition, while the dash denotes the inversion, which is described by:

$$X' = 1/X \quad (X \neq 0,\ X \neq \infty)\ ;\quad 0' = \infty\ ;\quad \infty' = 0 \qquad (2)\ .$$

The harmonic sum of n quantities $X_1, \ldots, X_k, \ldots, X_n$ is denoted by the symbol $\prod_{k=1}^{n} \cdot X_k$, which is defined by:

$$\prod_{k=1}^{n} \cdot X_k = \left(\sum_{k=1}^{n} X_k' \right)'$$

where $\sum$ denotes the sum. As regards single-relay Π-class systems, these can be either of the normal, inverse or hybrid type. The normal or inverse systems have the following form: $x \cdot Y$ and $x + Y(A)$, where x is an arbitrary Π-class switching system and Y is the coil of a single winding relay. All the

The Problem of Synthesis of Hybrid Π-Class Switching Systems

remaining systems are referred to as the single-relay hybrid systems. The principal hybrid systems are of the inverse-normal and normal-inverse type, since an arbitrary hybrid system can be reduced to one of the above types by means of suitable transformations. Thus, it can be shown by employing the distributive laws defined by Eqs (3) that a normal-inverse-normal system can be transformed into an inverse-normal and a normal-inverse system. The separable Π-class systems are defined as those systems containing n relays which can be divided into n independent single-relay two-pole sub-systems in such a way that when each of the two poles is connected to a separate supply source, its relay operates in the same way as in the original system. The separable systems are of the normal or inverse type or of the type defined by the first two equations on p 530. In these equations, G_k denotes the two-poles which have a finite impedance. It is shown that the analysis and the synthesis of n-relay separable Π-class systems can be carried out in the same manner as the analysis of n different Π-class systems and, consequently,

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E192/E382

The Problem of Synthesis of Hybrid Π-Class Switching Systems

the Boolean algebra is adequate for the analysis and synthesis of the systems. As regards the non-separable switching systems of the Π-class, it is found that, in general, the Boolean algebra is inadequate for their analysis and synthesis. There are 11 references: 1 English and 10 Soviet; one of the Soviet references is translated from English.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: January 19, 1960

Card 4/4

SHESTAKOV, V.I.

Review of V.M. Roginskii's book "Elements of the structural synthesis of switching control circuits." Avtom. i telem. 21 no.7:1090-1094 Jl'60. (MIRA 13:10)
(Automatic control) (Switching theory)
(Roginskii, V.M.)

SHESTAKOV, V. I.

"Algebra of relay-switch circuits"

report submitted for the Intl. Symposium on Relay Systems and Finite Automata Theory (IFAC), Moscow, 24 Sep-2 Oct 1962.

SHESTAKOV, V.I.

Synthesis of a single-cycle binary number summator based on two-positional commutators and polarized relays. Vop. teor. mat. mash. no.2:232-239 '62. (MIRA 15:8)
(Switching theory) (Electric relays)
(Electronic calculating machines)

SHESTAKOV, V.I.

Some epidemiological data on the resistance of the eggs and larvae of the mosquitoes Aedes togoi and Aedes koreicus against freezing. Trudy VladIEMG no.2:38-39 '62. (MIRA 18:3)

1. Iz Vladivostokskogo nauchno-issledovatel'skogo instituta epidemiologii, mikrobiologii i gigiyeny.

SHESTAKOV, V.I. (Moskva)

Mathematical logic and automatic control. Mat. v shkole no.1: 19-39 Ja-F '59. (MIRA 12:1)
(Logic, Symbolic and mathematical)
(Electronic calculating machines)

SOKOLOV, I.P., SLONOV, M.N., SHAPIRO, M.I., KHUDYAKOV, I.S., SHESTAKOV, V.I.

Fauna of ectoparasites in small mammals of the coastal regions and islands of the southern part of the Maritime Territory. Trudy Vlad.TSMG no.2:114-123 '62. (MIRA 18:3)

L 38466-66 EWT(1)/T

ACC NR: AP6029183 SOURCE CODE: UR/0016/66/000/005/0008/0013

AUTHOR: Shestakov, V. I.; Mikheyeva, A. I.; Polenova, I. N.; Dorokhova, V. S. 33 B

ORG: Vladivostok Institute of Epidemiology, Microbiology and Hygiene (Vladivostokskiy institut epidemiologii, mikrobiologii i gigiyeny); Regional Sanitary Epidemiological Station (Krayevaya sanitarno-epidemiologicheskaya stantsiya)

TITLE: Prevention of Japanese encephalitis in Primorskiy Kray

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 5, 1966, 8-13

TOPIC TAGS: encephalitis, insect control, mosquito, disease control

ABSTRACT: In Khasanskiy Rayon, where Japanese encephalitis is endemic, systematic measures have been carried out since 1960 to control the mosquito vectors of the disease (C. tritaeniorhynchus G., C. bitaeniorhynchus G., C. pipiens L., A. togoi Theob., A. esoensis Jam.) and to protect the population from mosquito bites. The breeding places were spayed from airplanes with DDT aerosols (10% dust and 50% paste). The best results were obtained by antilarval treatment of the biotopes in the early spring. The people were protected from insect bites with dimethylphthalate, repudin, and diethyltoluamide. The latter proved to be the most effective repellent. Orig. art. has: 3 tables. [JPRS: 36,932]

SUB CODE: 06 / SUBM DATE: 22Jul65 / ORIG REF: 005 / OTH REF: 001

Card 1/1 UDC: 616.988.25-022.395.7-084(5 1.63)

L 08708-67 EWT(1) JK
ACC NR: AP6034113 (A,N) SOURCE CODE: UR/0358/66/035/005/0545/0550

AUTHOR: Shestakov, V. I.; Mikheyeva, A. I.

ORG: Vladivostok Scientific Research Institute of Epidemiology, Microbiology, and Hygiene (Vladivostokskiy nauchno-issledovatel'skiy institut epidemiologii, mikrobiologii i gigiyeny); Primorskiy Kray Regional Sanitary-Epidemiological Station (Primorskaya krayevaya sanepidstantsiya)

TITLE: Study of Japanese encephalitis carriers in the Primorskiy Kray (Maritime Territory)

SOURCE: Meditsinskaya parazitologiya i parazitarnyye bolezni, v. 35, no. 5, 1966, 545-550

TOPIC TAGS: disease vector, animal disease, mosquito, virus disease, encephalitis

ABSTRACT: More than twenty mosquito species were identified in Japanese encephalitis foci in the Primorskiy Kray (both coastal and meadow regions) in 1957-1961. The potential vectors of Japanese encephalitis among the identified species were: *Culex pipens* (5% of mosquito collection), *C. bitaeniorhynchus* (1%), *C. tritaeniorhynchus* (0.5%), *A. togoi*

UDC: 616.988.25-022.395.7+576.895.771]
(571.63)

Card 1/2

L 08708-67

ACC NR: AP6034113

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(78%), *A. koreicus* (1%), and *A. esoensis* (2%). The population of *C. tritaeniorhynchus*, the chief vector of Japanese encephalitis in meadow foci, has decreased 30—40 times in recent years due to elimination of rice fields. In the coastal area, the chief species attacking man was *A. togoi*, and in fishing villages, *A. togoi* and *Culex pipens*. In the meadow areas the following species commonly attacked man: *A. dorsalis*, *A. vexans nipponi*, *A. esoensis*, *Anopheles hyrcanus*, and sometimes *Culiseta silvestris amurensis*. Effective mosquito control consisted of treating ponds with insecticides (coastal regions) and aerial spraying (meadow foci). Orig. art. has: 1 table and 2 figures. [W.A. 50]

SUB CODE: 06/ SUBM DATE: 10Aug65/ ORIG REF: 006

Card 2/2 nst

SHESTAKOV, V.M.

Selecting an efficient system for the gas distributing mechanism.
Mash.Bel. no.6:33-39 '59. (MIRA 13:6)
(Motor vehicles--Fuel systems)

GANSHTAK, Vladimir Iosipovich; SHESTAKOV, V.M., inzh., retsenzent; YUR'YEV, N.M., inzh., retsenzent; TKACHUN, A.I., red.izd-va; MODEL', B.I., tekhn.red.

[Economic analysis of potentials in a machinery manufacturing enterprise] Ekonomicheskii analiz rezervov na mashinostroitel'nom predpriiatii. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1960. 263 p. (MIRA 13:12)
(Machinery industry--Accounting)

BELYY, V.A.; SHESTAKOV, V.M.

Using some polymers in the manufacture of sliding bearings. Sbor. trud.Inst.mash.i avtom.AN BSSR no.2:93-115 '61. (MIRA 15:3)
(Plastic bearings)

SHESTAKOV, V.M. (Moskva)

Nonstationary percolation in a two-layer medium. Izv. AN SSSR. Mekh. i mashinostr. no.6:93-96 N-D '63. (MIRA 17:1)

SHESTAKOV, V.M.

Study of the performance of polyamide journal bearings. Plast. massy no.6:44-47 '63. (MIRA 16:10)

SHESTAKOV, V.N., kand.tekhn.nauk

Transversal connection of wheel sets with the truck frame. Vest. TSNII MPS 22 no.8:18-21 '63. (MIRA 17:2)

SHESTAKOV, V. M.

Shestakov, V. M. - "On certain production methods in concrete work", Sbornik trudov Studench. nauch.-tekhn. o-va (Mosk. inzh.-stroit. in-t im. Kuybysheva), Moscow, 1949, p. 27-35.

SO: U-411, 17 July 53, (Letopis 'Zhurnal 'nykh Statey, No. 20, 1949).

SHESTAKOV, V. M.

Shestakov, V. M. and Shestopal, A. O. - "Leaks and the appearance of washouts in hydro-technical equipment", Sbornik trudov Studench. nauch.-tekhn. o-va (Mosk. inzh.-stroit. in-t im. Kuybysheva), Moscow, 1949, p. 41-48.

SO: U-411, 17 July 53, (Letopis 'Zhurnal 'nykh Statey, No. 20, 1949).

SHESTAKOV, V. M.

3766. Shestakov, V. M., Calculating seepage in earth dams and barriers with fluctuating water levels (in Russian), *Gidrotekh. Stroit.* 22, 7, 36-39, July 1953.

The downstream water level is suddenly altered from one steady value to a different steady value. The transient motion of the water table inside a dam is studied, using Boussinesq's partial differential equation $(h^2)_t = (k/\mu)h(h^2)_{xx}$. This is linearized by replacing the undifferentiated symbol h with a parabolic expression in x correct at each face of the dam. The analytical solution so obtained, illustrated by graphs, should be an improvement on that of N.N. Verigin [title source, no. 3, 1952] and agrees well with a "hydraulic integrator" solution for case of semi-infinite dam.

Transient flow development is expressed in terms of dimensionless time variable and is effectively complete for typical structures when $kt \sim 1$m. Author concludes that transient seepage effects are important for fine-grained but not medium-grained sands. Transient hydraulic gradient at downstream face, however, can always be important, and a method of calculation is given. (k is the transmission coefficient, μ the storage coefficient, the remaining notation being standard.)

A. H. Armstrong, England

SHESTAKOV, V.M.

593. Shestakov, V. M., Seepage forces in open cuts (in Russian), *Gidrotekh. Stroit.* 22, 10, 21–25, 1953.

In a cut of trapezoidal section, made in a layer of homogeneous porous material resting on an impervious stratum, the water level is lowered with velocity v. Problem considered (2-dim.) is to find seepage line and its intercept with discharge face. In case I, mere drainage is present; in case II, a line of deep wells is operating at some distance from edge of cut.

For several geometrical configurations experimental investigations show that problem can be reduced to the equation

$$(b^2)_t = kb/\mu \cdot (b^2)_{xx}. \qquad [1]$$

For case I region is divided in two by vertical C through edge of cut. For upstream portion equation [1] is reduced (Bagrov-Verigin) to the heat equation, assuming constant the factor of the derivative in x. Solution is immediate. For downstream portion, with the sloping face, use is made of correspondence method. An approximate value $\bar{b}(x,t)$ is taken for b, and set into left side of [1], which is approximated to $\bar{b}_t = k/2\mu \cdot (b^2)_{xx}$, and integrated. If $\bar{b}=b$, solution is exact. If equality holds only at a few points, solution b is approximate. Procedure can be repeated, but equality at two points is sufficient for practical purposes, as shown by applications.

1/2

SHESTAKOV, V. M. . . .

Method applied is case I yields intercepes of seepage line with sloping face and with C. Expressions based on Pavlovski discharge-function ψ are given for three cases corresponding to various depths of impervious bed. In case II is determined the relation between draw-down velocity and well discharge with the condition that hydraulic gradient be zero at the discharge face. An example of computation illustrates this procedure.

G. H. Beguin, Switzerland

2/2

SHESTAKOV, V.M., kandidat tekhnicheskikh nauk.

Calculating seepage in earth dams and barriers at changing water levels. Gidr.stroi. 22 no.7:36-39 Jl '53. (MLRA 6:7)
(Dams) (Soil percolation)

11 Aug 53

SHESTAKOV, V. M.

USSR/Geophysics - Filtration Flow

"Investigations of the Internal Kinematics of Nonstationary Filtration Flow, and Derivation of the Equation of Nonstationary Filtration," V. M. Shestakov

DAN SSSR, Vol 91, No 5, pp 1047-1050

Tests experimentally the internal kinematics of nonstationary ground flow and derives Boussinesq's eq (Essai sur la theorie des eaux courantes (Theory of Flowing Water) 1877) in generalized form. Presented by Acad A. N. Terenin 17 Jun 53.

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SHESTAKOV, V.M., kandidat tekhnicheskikh nauk.

Calculating curves of depression in earth dams during the lowering of the water level of reservoirs. Gidr.stroi. 23 no.4:32-36 '54. (MLRA 7:7)
(Dams)

SHESTAKOV, V.M.

Determining filtration coefficients of anisotropic layers on the basis of pumped test samples. Razved.i okh.nedr 21 no.6:52-55 N-D '55. (MLRA 9:12)

(Water, Underground) (Soil percolation)

SHESTAKOV, V. M.

AID P - 1800

Subject : USSR/Hydraulic Engineering Construction

Card 1/1 Pub. 35 - 12/17

Author : Barenblatt, G. I. and Shestakov, V. M.

Title : Canal seepage into dry soil

Periodical : Gidr. stroi., v.24, no.1, 40-41, 1955

Abstract : A mathematical analysis of unstable ground water in an inclined uniform impervious layer during the instant change of level at the end of the layer as established by equations. Two diagrams are given. Four Russian references of 1945, 1952, 1952 and 1954.

Institution: None

Submitted : No date

SOV/124-58-1-908

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 1, p 121 (USSR)

AUTHOR: Shestakov, V. M.

TITLE: Determination of the Hydrodynamic Forces in Earth Structures and Slopes Due to the Lowering of the Water Levels in Head- and Tail-water Basins (Opredeleniye gidrodinamicheskikh sil v zemlyanykh sooruzheniyakh i otkosakh pri padenii urovney v b'yefakh)

PERIODICAL: V sb.: Vopr. fil'trats. raschetov gidrotekhn. sooruzheniy. Nr 2. Moscow, Gos. izd-vo lit. po str-vu i arkhitekt., 1956, pp 98-128

ABSTRACT: A brief review of methods (by R. Müller, F. H. Kellogg, V. M. Dombrovskiy, H. R. Cedergreen, E. Reinius, and I. A. Charnyy) for the approximate calculation of the hydrodynamic forces acting on the slopes of earth dams during variations in the water levels of the head- and tail-water basins. The author obtains an approximate solution for the case of the plane, one-dimensional, unsteady seepage of the ground water in a semi-infinite soil volume, where the boundary surface of the water basin is sloping. The draining-out interval on the boundary of the basin is not taken into consideration, and it is assumed that the depth of the water in the basin decreases

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Determination of the Hydrodynamic Forces in Earth Structures (cont.)

according to a linear law. If at the initial time moment the depth of the water in the basin is constant, the Boussinesq equation is linearized according to the Boussinesq method; if at the initial time moment a steady-state seepage regime obtains, the Boussinesq equation is linearized according to the method of L. S. Leybenzon. If either the draining-out interval along the boundary of the basin or the imperfection of the basin is to be taken into account, the author proposes the use of his own approximate relationships, which are established for the steady-state seepage regime. The approximate solution found is used in the approximate calculation of the transient seepage of ground water during the process of drying up a perfect foundation pit dug in the vicinity of a river, also in the calculation of the transient ground-water seepage in uniform earth dams equipped with a rock-fill drainage blanket during a lowering of the head-water level. The latter case is illustrated by a numerical example. The following errata require correction: 1) In formula (31) a^2 should read a; 2) in formula (51) et seq. $F_1(\lambda_1 n)$ should read $F_1(\lambda, n)$; 3) in formulas (59a) 2η should read 2 and $\Phi(n^2)$ should read $\Phi(n)$; 4) in formulas (77) and (92) L should read L_t; 5) in formula (91) the first "plus" in $H_0^2+(h_1+h_b)^2$ should be a "minus"; 6) in formula (92) the right-hand side of the equation requires an additional $-h_1$. Bibliography: 26 references.

S. M. Numerov

Card 2/2

SOV/112-57-6-12884

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1957, Nr 6, p 176 (USSR)

AUTHOR: Shestakov, V. M.

TITLE: Some Problems of Simulating Transient Seepage
(Nekotoryye voprosy modelirovaniya neustanovivsheysya fil'tratsii)

PERIODICAL: V sb.: Vopr. fil-trats. raschetov gidrotekhn. sooruzheniy. Nr 2, M., Gos. izd-vo po str-vu i arkhitekt., 1956, pp 129-139

ABSTRACT: A similitude criterion is presented for simulating the problems of transient seepage by means of solid medium devices; it is pointed out that application of the above criterion is difficult because of the very small time scale involved that corresponds to a practically acceptable linear scale. Suggestions are made to simplify the simulation conditions by neglecting inertial terms; the above possibility is illustrated with an example of simulating the conditions of saturation of a dry ground massif under the conditions of a constant rate of lift of level at the boundary. The possibility is considered of investigating the seepage, allowing for the capillary zone, by means of a soil

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Some Problems of Simulating Transient Seepage

or slit flume; it is noted that the soil-flume method allows for the capillary-zone effect more accurately. The possibility of generalizing the boundary-value conditions is pointed out, which widens the limits of solutions obtainable with models. An example is cited of calculating, by means of V. S. Luk'yanov's hydraulic integrator, the depression curves for a homogeneous earth dam that correspond to a level drop in the upstream water. Bibliography: 9 items. 4 illustrations.

I.M.V.

SHESTAKOV, V. M.

Calculating filtration in a three-layer medium. Gidr. stroi. 25 no.4:52-54 My '56. (MLRA 9:9)

(Soil percolation) (Dams)

SHESTAKOV, V.M.

Unsteady seepage through slanting imperevious rocks. Dokl. AN SSSR 108 no.5:791-794 Je '56. (MLRA 9:10)

1. Predstavleno akademikom L.I. Sedovym.
(Soil percolation)

98-58-3-19/22

AUTHOR: Shestakov, V.M., Candidate of Technical Sciences.

TITLE: Conference on Questions of Water Level Lowering in a Hydrotechnical Installation (Soveshchaniye po voprosam vodoponizheniya v gidrotekhnicheskom stroitel'stve)

PERIODICAL: Gidrotekhnicheskoye Stroitel'stvo, 1958, Nr 3, pp 61-62(USSR)

ABSTRACT: At the end of 1957, a conference took place in the VNII VODGEO dealing with questions of water level lowering during hydrotechnical construction work. In this conference participated representatives of the GIDROSPETSPROYEKT, GIDROPROYEKT, GIDROENERGOPROYEKT, VODOKANALPROYEKT, FUNDAMENTPROYEKT, VNII VODGEO, NII of Foundations and Underground Constructions imeni Vedeneyev, TNISGEI, VSEGINGEO, Stalingrad Hydroelectric Power Station, and others. Reports made by M.P. Semenov, A.G. Lykoshin, O.N. Nosova, A.P. Korzhetskiy, V.D. Babushkin, V.M. Nasberga, G.K. Mamenko, dealt with questions of geologico-hydrological conditions, and means of lowering the water level. Reports made by M.N. Pavlovska, V.M. Shestakov, N.N. Verigin and F.M. Bochever, dealt with calculations of filtration in water level lowering installations. Reports of F.I. Emel'yanov

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Conference on Questions of Water Level Lowering in a Hydrotechnical Installation

P.I. Volodenkov, M.F. Khasin, L.N. Vorobkov, P.V. Lobachev, D.G. Shneyder and P.V. Tsyurupa dealt with projects and installation of water level lowering. In the course of the discussion it became evident that water level lowering being an item involving considerable expense, ways and means should be found to improve the work while lowering the cost. The question of combining deep level draining with surface drainage was one of the most discussed points. As a result of the conference the following recommendations were submitted: 1) special investigation should be conducted to determine filtration characteristics in various kinds of soil and the influence of filtration on the sand base under varying hydrogeological conditions. 2) considering the numerous proposals which exist in regard to calculations of water level lowering, a complete and methodical survey should be made of all literature on the subject. The institutes VODGEO, VNIIG and VNIIOSP should participate in this work. 3) the question of combining deep level draining with open drainage requires further inve-

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stigation, especially in such cases where the foundation pit crosses the water head in sandy soil. 4) greater attention should be paid to the organization of piezometric observations. 5) in view of the fact that large dredging machines operating in close vicinity to the water head interfere with the foundation soil, it would be advisable for GIDROPROYEKT to investigate the situation with a view toward limiting the distance from the installation at which dredges are permitted to operate. 6) economic problems, in connection with water level lowering should be studied by organizations in charge of projects, in cooperation with scientific-research institutes Special attention should be paid to the cost of deep level draining as compared with cost of open drainage. The general aim is to lower the cost of water level lowering, as well as of the entire complex construction work carried out under the protection of water level lowering installations. 7) in connection with water level lowering work it would be advisable to adopt a standard mobile set of pumping devices of the LIU type, having a capacity of 30-140 m^3/hr and a 5.5 to 20 kw motor. 8) other

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methods of water level lowering should also be investigated, such as drawing water from soil or by means of electroosmosis. 9) finally it was deemed necessary to work out new technical conditions for water level lowering in hydrotechnical installations.

Card 4/4 1. Dams-Construction 2. Dams-Design 3. Power plants-Construction 4. Dams-Costs