

On the Adaptability of the Nematode *Thelandros tba* SOV/20-124-6-54/55
Dinnik, 1930 to the Peculiarities of Its Host Life Cycle

a) by formation of a second and of a third membrane upon it
dormant eggs originate; b) the remaining eggs retain only one
single membrane, enlarge very much and become larvae as a
final result. This phenomenon is to be considered an adaptation
of the nematode to the short life of the tadpole host. It
increases the opportunity for the parasite of gaining access
into the host both during the current season and in the
following year. There are 3 figures and 1 Soviet reference.

PRESENTED: October 13, 1958, by K. I. Skryabin, Academician

SUBMITTED: October 12, 1958

Card 2/2

YERMOLOVA, Antonina Nikitichna; ANTONENKO, Vera Vasil'yevna;
KRYUCHKOVSKIY, Semen Arkad'yevich; VOLGAR', L.G.,
kand. biol. nauk, nauchn. red.; FEDYUSHINA, L.M., red.

[Biology for agriculture, Biochemistry, Biology and space;
lists of recommended books] Biologiya - sel'skomu kho-
ziaistvu, Khimiya zhizni, Biologiya i kosmos; rekomendatel'-
nye spiski literatury. Nauchn. red. L.G.Volgar'. Leningrad,
1963. 23 p. (Na temy dnia, no.7) (MIRA 17:2)

1. Leningrad. Publichnaya biblioteka.

VOLGAREV, A., inzhener.

Adobe walls reinforced with reeds. Sel'.stroi. 11 no.10:
16-17 0 '56.

(MLRA 9:12)

(Building, Adobe)

VOIGAREV, A.
VOIGAREV, A., inzhener-stroitel'

Reeds as reinforcing material. Sel'.stroi.10 no.6:21 Je'55.
(Building materials)

VOLGAROV, A.S., *Gen. Tech Sci.* (M.S.) "Study of ~~the~~ ^{the} ~~increase~~ ^{the} ~~relative~~ ^{the} stability of walls ~~made~~ ^{made of} ~~sun-dried~~ ^{brick} and ~~brick~~ ^{stone} ~~and~~ ^{with} ~~retained~~ ^{retained} ~~case.~~ ^{case.}"
Prague, 1958. 14 pp (J. of ^{Construction} ~~Engineering~~ and Architecture USSR. *General Sci*
Rep Inst of Building Construction), 100 copies (II, 31-32, 100)
(KNTSK)

MOGIL'NITSKIY, B.N., professor, redaktor [deceased]; VOLGAREVA, N.,
redaktor; GABERLAND, M.I., tekhnicheskiy redaktor

[Studies on vascular permeability] Ocherki po sosudistoi proni-
tsaemosti. Moskva, Gos. izd-vo med. lit-ry, 1956. 379 p. (MIRA 9:9)

1. Chlen korrespondent AMN SSSR (for Mogil'nitskiy)
(BLOOD VESSELS) (PERMEABILITY)

SIVKOV, Ivan Ivanovich; VOLGAREVA, N.P., red.; BOGACHEVA, Z.I.

[Importance of gastroscopy in the diagnosis of stomach cancer]
Znachenie gastroskopii v diagnostike raka zheludka. Moskva, Gos.
izd-vo med.lit-ry, 1959. 105 p. (MIRA 13:7)
(STOMACH--CANCER) (GASTROSCOPY)

1957, No. 3 --

"Pulmonary Electrocardiograms in Certain Circulatory Disturbances."
Conf Med Sci, First Moscow State Medical Inst, Moscow, 1955.
(SovMed, No 3, Oct 54)

Survey of Scientific and Technical Dissertations Defended at
USSR Higher Educational Institutions (19)

SO: Sov. No 471, 5 May 55

VOLGAREVA. N.P.

Rare complication following formation of frontal gastroenteroanastomosis. Khirurgia no.4:80 Ap '55. (MLRA 8:9)

1. Kafedra patologicheskoy anatomii 1-go Moskovskogo ordena Lenina meditsinskogo instituta. (STOMACH--SURGERY) (INTESTINES--SURGERY)

KAS'YANOV, Mikhail Ivanovich; VOLGAREVA, N.P., redaktor; ZAKHAROV, A.I.,
tekhnicheskiiy redaktor

[Medicolegal investigation in cases of sudden death] Sudebno-meditainskaya
ekspertiza v sluchaiakh skoropostizhenoi smerti. Moskva, Gos. izd-vo
med. lit-ry, 1956. 221 p. (MIRA 9:12)
(AUTOPSY)

YARYGIN, Nikita Yereyevich; VOLGAREVA, N.P., redaktor; ROMANOVA, Z.A.,
tekhnicheskiy redaktor

[Pathomorphology of the vegetative nervous system in tuberculosis]
Patomorfologiya vegetativnoi nervnoi sistemy pri tuberkuleze.
Moskva, Gos. izd-vo med. lit-ry, 1956. 234 p. (MLFA 9:10)
(TUBERCULOSIS)
(NERVOUS SYSTEM, SYMPATHETIC--DISEASES)

VOLGAREVA, N. P.

ANICHKOV, N.N., akademik, redaktor; MYASNIKOV, A.L., redaktor; VOLGAREVA, N.P., redaktor; GLUKHOYEDOVA, G.A., tekhnicheskij redaktor

[Atherosclerosis and coronary deficiency; proceedings of a conference of the Institute of Therapy and the Department of Pathological Anatomy of the Institute of Experimental Medicine, March 15-17, 1956] Ateroskleroz i koronarnaya nedostatochnost'; trudy konferentsii Instituta terapii i Otdela patologicheskoi anatomii Instituta eksperimental'noi meditsiny, 15-17 marta 1956 g. Pod red. N.N.Anichkova i A.L.Miasnikova. Moskva, Gos. izd-vo med. lit-ry, 1956. 310 p. (MLRA 10:2)

1. Akademiya meditsinskikh nauk SSSR, Moscow. Institut terapii.
2. Deystvitel'nyy chlen Akademii meditsinskikh nauk SSSR (for Myasnikov)

(ARTERIOSCLEROSIS) (HEART FAILURE)

VOLGAREVA, N.P., kand.med.nauk

Conference devoted to the memory of Academician
A.I.Abrikosov. Arkh. pat. 27 no.11:81-82 '65.

(MIRA 18:12)

VOLGAREVA, N.P. (Moskva)

Oncological diseases according to prosection data of the Department of Pathological Anatomy of the First Moscow Medical Institute over a 20-year period (1939-1958) Arkh. pat. 25
no.7:72-80 '63 (MIRA 16:12)

1. Iz kafedry patologicheskoy anatomii (zav. -- chlen-korrespondent AMN SSSP prof. A.I.Strukov) I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M.Sechenova i klinicheskoy bol'nitsy No.6 (glavnyy vrach G.I.Sidorov) Moskovskogo gorodskogo otdela zdravookhraneniya.

VOLGAREVA, N.P., kand.med.nauk (Moskva)

Case of a chronic course in thromboembolism of the pulmonary artery with signs of cor pulmonale. Klin.med. no.4:133-135 (MIRA 15:5) '62.

1. Iz patologoanatomicheskogo otdeleniya klinicheskoy bol'nitsy No.6 Moskovskogo gorodskogo otdela zdravookhraneniya (glavnyy vrach G.I. Sidorov).
(PULMONARY EMBOLISM) (COR PULMONALE)

VOLGAREVA, N.P., kand.med.nauk; FIGAROVA, V.K.; POPKOV, Yu.A. (Moskva)

Case of pheochromocytoma of the adrenal gland successfully operated
on. Khirurgiia no.8:138-140 Ag '62. (MIRA 15:8)
(CHROMAFFIN SYSTEM--TUMORS)

VOLGAREVA, N. P., kand. med. nauk

Case of carcinoids of the bronchi. Vest. otorin. nc. 3:86-88 '61.
(MIRA 14:12)

1. Iz patologoanatomicheskogo otdeleniya Moskovskoy klinicheskoy
bol'nitsy No.6.

(BRONCHI---CANCER)

SMIRNOV, Nikolay Sergeevich, prof.; VOLGAREVA, N.P., red.; BUL'DYAYEV,
N.A., tekhn. red.

[Gastroscopy; method, technic, use, and clinical significance]
Gastroskopiia; metodika, tekhnika primeneniia i klinicheskoe
znachenie. Izd.2. Moskva, Medgiz, 1960. 210 p. plates.
(MIRA 14:12)

(GASTROSCOPY)

MIKHEYEV, Vadim Vladimirovich; VOLGAREVA, N.P., red.; SENCHILO, K.K., tekhn.
red.

[Neurorheumatism] Neirorevmatizm. Moskva, Gos. izd-vo med. lit-ry.
Medgiz, 1960. 251 p. (MIRA 14:9)
(RHEUMATIC FEVER) (NERVOUS SYSTEM)

VOLGAREVA, N. P.

ISAYEVA, A. L.; VOLGAREVA, N. P.; PETROVA, A. N.; TURITOVA, L. V. (Moskva)

Protracted septic endarteritis and endocarditis following surgical treatment of tetralogy of Fallot. Klin.med. 36 no.1:121-127 Jan '58. (MIRA 11:3)

1. Iz kliniki detskikh bolezney (dir.-deystvitel'nyy chlen AMN SSSR prof. Yu.F.Dombrovskaya) i kafedry patologicheskoy anatomii (zav.-chlen-korrespondent AMN SSSR prof. A.I.Strukov) i Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M.Sechenova.

(TETRALOGY OF FALLOT, surg.

postop. septic endarteritis & endocarditis (Rus)

(ENDARTERITIS, in inf. & child

septic, postop. in tetralogy of Fallot surg. (Rus)

(ENDOCARDITIS, BACTERIAL, in inf. & child

postop. in tetralogy of Fallot surg. (Rus)

VOL'GEMUT, A.

Correspondence coursed in journalism and potoreporting. Sov.
foto 20 no.1:43 Ja '60. (MIRA 13:5)
(Photography, Journalistic--Study and teaching)

VOL'GEMUT, A.; TKACHENKO, Yu.

"Chestnut trees are in bloom again"... by D.Bal'termants, N.Kozlovskii.
Reviewed by A.Vol'gemut, IU.Tkachenko. Sov.foto. 21 no.3:36-37
Mr '61. (MIRA 14:4)

(Kiev—Description and travel)
(Bal'termants, D.) (Kozlovskii, N.)

VOL'GEMUT

Do not retreat from the truth of life. Sov.foto 17 no.7:14-17
J1 '57. (MERA-10:8)
(Photography, Journalistic)

ESKIN, M.G.; VOL'GEMUT, E.A.

Electric automatic bit feed controller with magnetic and semi-conductor boosters. Mash. i neft. obor. no.6:19-26 '65. (MIRA 18:7)

1. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut neftyanogo mashinostroyeniya.

MOLODOV, K. (Khabarovsk); LINTS, V., inzh. (Moskva); KOCHETKOV, V.
(Moskva); BERGER, Yu. (Moskva); VOLGERSHTEYN, A. (Dokuchayevsk,
Donetskaya obl.); GOLENISHCHEVA, E. (Dokuchayevsk,
Donetskaya obl.)

Conceived - achieved. Izobr. 1 rats. no.6:34-35 '63.

(MIRA 16:8)

VOLGERSHTEYN, A.; GOLENISHCHEVA, E., inzh.

Conference of the readers of the periodical "Gornyi zhurnal"
held in Dokuchayevsk. Gor. zhur. no.10:74 O '63.
(MIRA 16:11)

1. Nachal'nik byuro tekhnicheskoy informatsii Dokuchayevskogo
flyusodolomitnogo kombinata (for Volgershteyn).

VOLGERSHTEYN, A.

Conference of readers of "Gornyi Zhurnal" held in Dokuchayevsk.
Gor.zhur. no.4:72 Ap '62. (MIRA 15:4)

1. Nachal'nik Byuro tekhnicheskoy informatsii Dokuchayevskogo
flyuso-dolmitnogo kombinata.
(Mineral industries...Periodicals)

GUREVICH, D. Ye.; VOLIK, A. G.

Working rock under water. Transp. stroi. 13 no.4:24-25 Ap '63.
(MIRA 16:4)

1. Glavnyy tekhnolog tresta Chernomorgidrostroy (for Gurevich).
2. Nachal'nik tekhnicheskogo otdela tresta Chernomorgidrostroy
(for Volik).

(Hydraulic engineering)
(Boring) (Blasting, Submarine)

GUREVICH, D.Ye., inzh.; VOLIK, A.G., inzh

Rear protecting of wharves made of large concrete blocks
without a prism of stone. Transp.stroi. 12 no.7:28 J1 '62.
(Wharves) (Precast concrete) (MIRA 16:2)

VOLIK, V. Ye., veterinarnyy vrach (Melitopol')

Prevention of avitaminosis in poultry. Veterinariia 37 no.6:65
Je '60. (MIRA 16:7)

(Deficiency diseases in poultry)

I 15500-63 EWP(q)/EWP(m)/BDS AFFTC/ASD Pad JD
ACCESSION NR: AR3001633 S/0137/63/000/004/E011/E011

SOURCE: RZh. Metallurgiya, Abs. 4E56

AUTHOR: Kazennov, Yu. I.; Volikova, I. G.; Akshentseva, A. P. *Col*

TITLE: Properties of the welded joints of high-chromium steel alloyed with nitrogen and nickel

CITED SOURCE: Tr. Vses. n.-i. i konstrukt. in-t khim. mashinostr., no. 33, 1960, 36-49

TOPIC TAGS: welded joint, high-chromium steel, Kh28NA, C, Cr, Ni, Mn, N, Si, heat treatment, weldability

TRANSLATION: The weldability and corrosion resistance of several commercial heats of thin sheet steel Kh28NA (EI-657) were studied at NIIMHIMMASH [Nauchno-Issledovatel'skiy Institute Khimicheskogo Mashinostroyeniya -- Scientific Research Institute of Chemical Machine Building]. Basic research was conducted on heat 22993 of this steel with 3.0-mm thickness and the following chemical composition: 0.06% C, 26.2% Cr, 1.36% Ni, 0.74% Mn, 0.24% N, and 0.5% Si.

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L 15500-63

ACCESSION NR: AR3001633

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During short-time heating and welding, the alphas transformation takes place, starting at approximately 950°C. The higher the temperature of heating, the more complete is the transformation. Practically no reverse gamma-alpha transformation occurs at a sufficiently high rate of cooling, for example, during welding. However, due to significant variation of carbon solubility in ferrite and austenite, formation of carbides in the cooling process occurs at the gamma- and alpha-phase interfaces. Alpha-gamma transformations are reversible. The gamma-alpha transformation is achieved by short- or long-time annealing at 800-1,000°C. Harmful effect of high-temperature welding on steel Kh28NA can be eliminated completely by an annealing heat treatment. Steel Kh28NA can be classified with those steels which can be satisfactorily welded and which require heat treatment after welding. V. Fomenko

DATE ACQ: 20 May 63

SUB CODE: ML, EL

ENCL: 00

Card 2/2

USSR/Acad Sci

Aug 1947

"In the Presidium" 2 1/2 pp

"Vest Akad Nauk SSSR" No 8

Discusses suggestions made for greater distribution of responsibility between members of the Presidium, plan for operations of the Presidium for second half of 1947, and touches on work of branches and bases of the Academy of Sciences, USSR. Academician Volgin submitted article describing operation of six branches and seven scientific research bases, 88 laboratories, seven botanical gardens, and series of stations. Total of 2,555 people operate branches and bases of the Academy of Sciences. Proposition

5714

Aug 1947

FDB
USSR/Acad Sci (Contd)

was made to publish journal in 1948 honoring the 15th anniversary of branches and bases.

FDB

5714

VOLGIN

VOLGIN, fnu, Academician

Vice-President of the Academy of Sciences of the USSR Moscow, Moskovskaya o. Rsfar

Soviet Source: N: Trud (Labor)

Abstracted in USAF "Treasure Island", on file in Library of Congress, Air Information
Division, Report No. 89445. Unclassified

VOLGIN, A.

Ready dinners taken to the field; from the experience of state farms in the Altai Territory. Obshchestv. pit. no.6:10-13 Je (MIRA 14:9)
'61.

1. Nachal'nik otdela obshchestvennogo pitaniya upravleniya
torgovli Altayskogo krayispolkoma.
(Altai Territory--State farms)

VOLGIN, A.

Dining room on a state farm in the Altai Territory. Obshchestv.
pit. no. 11:35-37 N '61. (MIRA 15:2)

1. Nachal'nik otдела obshchestvennogo pitaniya Upravleniya
torgovli Altayskogo kryispolkoma.
(Altai Territory—Restaurants, lunchrooms, etc.)

GINZBURG, Lev Natanovich, prof.; DVERNITSKIY, Iosif Melent'yevich, inzh.;
TARASOV, S.V., retsenzent; SLUTSKOV, I.K., retsenzent; FEYMAN,
I.I., retsenzent; LYASHENKOV, I.K., retsenzent; VOLGIN, A.A.,
retsenzent; GORNEYCHIK, G.M., red.; SOKOLOVA, V.Ye., red.;
MEDVEDEV, L.Ya., tekhn.red.

[Spinning of bast fibers and the manufacture of twisted products]
Priadenie lubianykh volokon i proizvodstvo kruchenykh izdelii.
Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po legkoi promyshl., 1959.
549 p. (MIRA 12:8)

1. Kafedra pryadeniya l'na KTI (for Slutskov, Feyman, Lyashenkov,
Volgin).

(Bast)

(Cordage)

VOLGIN, A.I., inzh.; TALAYEVA, G.V., inzh.; CHUKALOVSKIY, F.A., inzh.

Caprolan machine parts. Khim.i neft. mashinostr. no.8:40-41
Ag '65. (MIRA 18:12)

VOLGIN, A.P.; SAVIN, M.F.; BOBROVA, L.F.

Experience of using direct telegraph connections in the Karelian
A.S.S.R. Vest. svyazi 21 no.5:19-21 My '61. (MIRA 14:6)

1. Nachal'nik Petrozavodskoy gorodskoy kontory svyazi (for Volgin).
2. Glavnyy inzh. Petrozavodskoy gorodskoy kontory svyazi (for Savin).
3. Nachal'nik telegrafa Petrozavodskoy gorodskoy kontory svyazi (for Bobrova).
(Karelia—Telegraph)

VOLGIN, B.; LUSHNIKOV, O., inzh., kand.tekhn.nauk; BEKHTEREV, Yu.

Problems in organizing the renting of automobiles. Za rul. 18 .
no.8:17-19 Ag '60. (MIRA 13:9)

1. Reydovaya brigada zhurnala "Za rulem." 2. Predsedatel' soveta
sodeystviya 12-y avtobazy Upravleniya taksomotornogo transporta
(for Volgin).
(Automobiles, Rental)

ZHIVAYKIN, L.Ya.; VOLGIN, B.P.

Hydraulic resistance of an ascending two-phase flowing liquid.
Zhur.VKHO 6 no.3:354-355 '61. (MIRA 14:6)

1. Ural'skiy nauchno-issledovatel'skiy khimicheskiy institut.
(Fluid dynamics)

ZHIVAYKIN, L.Ya.; VOLGIN, B.P.

Hydraulic resistance in wetted-wall columns with a two-
phase downflowing stream. Khim. prom. no.6:445-449 Je '63.
(MIRA 16:8)

(Scrubber (Chemical technology))
(Tubes--Fluid dynamics)

NORKINA, L.A.; VOLGIN, B.P.; BEREZINA, L.D.

Absorption of gases in a multistage apparatus built with Venturi scrubbers. *Izv. vys. ucheb. zav.; khim. i kniz. tekhn.* 7 no.4:669-674 '64.

(MIRA 17:12)

1. Kafedra mashin i apparatov khimicheskikh proizvodstv Ural'skogo politekhnicheskogo instituta im. S.M. Kirova.

ZHIVAYKIN, L.Ya.; VOLGIN, B.P.

Determining the amount of liquid carried away from the surface of
a film by a gas flow. Inzh.-fiz.zhur. 4 no.8:114-116 Ag '61.
(MIRA 14:8)

1. Ural'skiy nauchno-issledovatel'skiy khimicheskiy institut,
Sverdlovsk.

(Fluid dynamics)

BOGDANOV, Aleksandr Ivanovich [deceased]; BEREZIN, B.V., red.; VOLGIN,
B.P., red.; GOVORKOV, V.M., red.; DOLGANOV, Ye.A., red.; LEVCHEN-
KO, P.V., red.; RONZHIN, S.N., red.; SOMOVA, T.M., red.; DUGINA,
N.A., tekhn. red.

[Machinery for cement plants] Mekhanicheskoe oborudovanie tsement-
nykh zavodov. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-
ry, 1961. 384 p. (MIRA 14:9)
(Cement plants--Equipment and supplies)

L 15896-66 EWT(1)/EWP(m)/EWA(d)/FCS(k)/ETC(m)-6/EWA(1) WW

ACC NR: AP6001994

SOURCE CODE: UR/0170/65/009/006/0703/0706

AUTHOR: Yugay, F. S.; Volgin, B. P.

66
B

ORG: Ural Polytechnic Institute im. S. M. Kirov, Sverdlovsk (Ural'skiy politekhnicheskiy institut)

TITLE: Qualitative picture of the ^{2, 5-5} motion of a liquid in an ^{1, 5-5} accelerating gas flow

SOURCE: Inzhenerno-fizicheskiy zhurnal, v. 9, no. 6, 1965, 703-706

TOPIC TAGS: gas flow, droplet atomization, flow measurement

ABSTRACT: An attempt is made to study the physical picture of the process of phase interaction in a venturi scrubber. The experiments were carried out by using high-speed photography. Treatment of the data revealed that the motion of a drop in the gas flow along the axis of the tube in the entrance cone involves three periods: (1) pulsed acceleration of the drop, (2) regular deformation of the drop, (3) blowing out and atomization of the drop. The photographs showed that drops accelerated in the entrance cone acquire velocities in the throat which are equal to approximately 20-25% of the gas flow velocity in the throat. Drops 2 - 4 mm in size at gas flow velocities of 10, 15, 20, 25, 30, and 35 m/sec acquire the

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UDC: 532.54 + 529.5

I 15896-66

ACC NR: AP6001994

following velocities in the throat: 2.35, 2.95, 3.75, 5.15, 5.5, and 6.4 m/sec. Hence it is seen that most of the energy of the gas flow is expended on deforming the drop, not on accelerating it. At intermediate flow velocities (20 - 35 m/sec), owing to a considerable development of surface area and a high relative velocity between the phases, conditions favorable to absorption processes are created. Orig. art. has: 4 figures.

SUB CODE: 20 / SUBM DATE: 10Feb65 / ORIG REF: 004 / OTH REF: 005

Card 2/2

24410

16.8000 (1031, 1121, 1132)

S/024/61/000/002/008/014
E140/E163

AUTHOR: Voigin, L.N. (Moscow)

TITLE: The synthesis of discrete automatic systems with bounded control action

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Energetika i avtomatika, 1961, No.2, pp.114-119

TEXT: Using the z-transform the author gives a linear-program solution to the question of optimal control program in the form of a rational polynomial, for a pulse control system in which the number of cycles of control action is limited a priori. The solution is found under the condition of coarseness which permits the design of control systems for processes with negative dynamic characteristics (unstable, oscillatory, pure delay, etc). It is shown that if the restraints on the control action are not too stiff, there exists a linear program for the digital computer permitting the bounded control action and providing the required dynamic properties of the system. The solution is given in the form of successive approximations by rational polynomials of z . The degree of the numerator and denominator of the rational

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S/024/61/000/002/008/014
E140/E163



The synthesis of discrete automatic systems with bounded control action

polynomial is increased at each approximation until a set of consistent relations is found.

There are 1 figure and 7 references; 4 Soviet and 3 English. The English language references read as follows:

- Ref. 3: J.R. Ragazzini, L.A. Zade. The analysis of pulse systems. Trans. AIEE, 1952, V. 71, pt. II.
- Ref. 5: S. Vajda. Theory of games and linear programming. NY, L. 1956. Wiley.
- Ref. 6: E.W. Tucker. Linear and nonlinear programming. Operations research, 1957, V. 5, No. 2.

ASSOCIATION: Institut elektronnykh upravlyayushchikh mashin Akademii nauk SSSR (Institute of Electronic Control Machines, AS USSR)

SUBMITTED: November 4, 1960

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137-58-4-6419

Translation from: Referativnyy zhurnal, Metallurgiya, 1953, Nr 4, p 12 (USSR)

AUTHORS: Miller, V. Ya., Volgin, B. P., Tikhonova, Z. A., Krapivner, S. L.

TITLE: Sintering of Pyrite Cinders and Metallurgical Assessment of the Clinker Derived From Them (Spekaniye piritnykh ogarkov i metallurgicheskaya otsenka poluchennogo iz nikh aglomerata)

PERIODICAL: Tr. Ural'skogo n.-i. khim. in-ta, 1957, Nr. 4, pp 116-133

ABSTRACT: Experiments in the sintering of pyrite cinders (PC) by pulverized-pyrite roasting furnaces, as an instance of the possible utilizations of PC are described. The fuel was Kemerovo coke breeze of the 0-3 mm class, having 15.30 percent ash and 0.26 percent S. The layout of an experimental sintering plant is presented. In "heat value"--coke consumption per ton of iron--and also in consumption of flux in a blast-furnace heat, the clinker (C) from PC is equivalent to sand-clay refuse C having the same Fe content. PC C requires more flux and coke per blast furnace heat than does magnetic ironstone C, since the gangue of PC is exceptionally acid. But where ores have a low $\text{SiO}_2:\text{Al}_2\text{O}_3$ ratio, this peculiarity of PC C is a positive factor. When 8-10 percent

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Sintering of Pyrite Cinders (cont.)

C is added to the charge, the Cu they add does not interfere with the smelting of common conversion pig irons. The Zn content of the C is appx. 0.5 percent. When the charge contains 60-65 percent PC, this will add appx. 0.032 percent Zn to blast furnace charge, and this cannot but introduce difficulties in smelting. Thus, C from flotation tailings of furnaces and dust-catchers may be employed with adequate effectiveness by addition to the charges of sintering plants employing magnetic ironstones. Up to 10 percent of the weight of the charge may thus be added. Simultaneous addition of sand-clay refuse or ochre-brown ore fines, which speed the sintering process, is highly desirable.

A. Sh.

1. Minerals--Sintering--Test methods
2. Minerals--Sintering--Test results

Card 2/2

SOV/137-59-1-277

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 1, p 34 (USSR)

AUTHORS: Apakhov, I. A., Volgin, B. P., Lyapustina, Ye. M., Andreyev, A. F.

TITLE: High-temperature Roasting of Pyrite Maintained in a Suspended [Fluidized] State (Vysokotemperaturnyy obzhig kolchedana vo vzveshennom sostoyanii)

PERIODICAL: V sb.: Vopr. polucheniya sernist. gaza iz kolchedana i sery. Leningrad, Goskhimizdat, 1957, pp 71-78

ABSTRACT: The process of roasting of a flotation concentrate may be greatly enhanced if the surface area of the concentrate is increased by maintaining it in a suspended [fluidized] state at elevated temperatures (> 1000°C). The material injected into the furnace by blowing is preheated to a temperature approaching the temperature of fusion, a partial sintering of the material observed in the process being attributable to the collision of particles; the final formation of the sinter occurs on the bottom of the furnace. The sinter thus obtained contains only ~ 0.2% S and is well suited for blast-furnace smelting. Pilot-plant tests substantiated the possibility of employing this method of roasting, and, in 1953, an experimental-plant

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SOV/137-59-1-277

High-temperature Roasting of Pyrite Maintained in a Suspended (cont.)

furnace was designed on the basis of these tests. Pilot-plant experiments on roasting of material in a suspended state yielding a liquid end product, which was subsequently granulated, were conducted in a furnace 5.7 m high and 1.5 m in diameter; the experiments revealed the need for an additional supply of heat; this additional heat could be provided by means of combustion of fuel, preheating of air, or utilization of oxygen-enriched air, the latter alternative being the most advantageous.

A. P.

Card 2/2

VOLGIN, B.P.; ZHIVAYKIN, L. Ya.; NORKINA, L.A.

Absorption of gases in multistage units from Venturi scrubbers.
Izv. vys. ucheb.zav., khim. i khim. tekhn. 7 no.5:852-854 '64
(MIRA 18:1)

1. Ural'skiy politekhnicheskiy institut imeni S.M. Kirova i
Ural'skiy nauchno-issledovatel'skiy institut khimii.

10L SIN, B.P.

4

184E2C -1

2/25

Use in the metallurgical industry of the ash from pyrite
 flotation concentrate, and the possibilities of obtaining the
 ash in a pelletized form. B. P. Volgin and E. M. Lyu-
 pistina. *Trudy Ural. Nauch.-Issledovatel. Khim. Inst.*
 1954, No. 1, 133-7; *Referat. Zhur., Met.* 1956, No. 39.—It
 is possible to obtain an agglomerate or a melt after calcin-
 ing pyrite concentrates in a suspended state. This permits
 a 2-2.5-fold increase in the productivity of pyrite burners
 of sulfuric acid plants, and mechanization of unloading and
 transportation of the ash, and facilitates metallurgical treat-
 ment of the ash. The ash is sintered at 1050-1100° and
 melted at 1350° or higher. Iron in the melt is transformed
 into compounds which could be very hard to reduce and
 therefore the melt must be fed principally to the charge of
 agglomerate plants. The S content could be lowered to
 less than 0.2%, so that the agglomerate could be used di-
 rectly in the blast furnace. Precious metals that often are
 present in the original material can be recovered.

Alexis N. Bestall

108
007

MARON, P.S.; VOIGIN, B.P.

New sampling method for sulfur dioxide. Zav. lab. 22 no.9:1039-1040
'56. (MIRA 9:12)

1. Ural'skiy nauchno-issledovatel'skiy khimicheskiy institut.
(Sulfur dioxide)

Category: USSR/Fitting Out of Laboratories. Instruments, Their Theory, H. Construction and Use.

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 31188

Author : Maron F. S., Volgin B. P.

Inst : not given

Title : New Method of Collecting Samples of Sulfur Dioxide

Orig Pub: Zavod. laboratoriya, 1956, 22, No 9, 1039-1040

Abstract: The method permits to collect simultaneously cinder dust, H_2SO_4 vapor, As and Se. Collection is effected by means of an electro-filter connected with the gas duct. To measure the pressure, velocity and temperature of the gas, the apparatus is equipped with a mercury manometer, theometer and thermometer. The proposed method yields more accurate results than those utilized in plant practice.

Card : 1/1

-29-

Volgin, B. P.

3

The characteristics of aluminogel obtained as a by-product of chromate production. G. K. Magarshak, V. N. Tarasova, and B. P. Volgin. *Tруды Урал. Науч.-Исследователь. Хим. Инст.* 1954, No. 1, 55-63; Referat. Zhur., Khim. 1956, Abstr. No. 27739. — The gel-like ppt. obtained during the purification of $\text{Na}_2\text{Cr}_2\text{O}_7$ from NaAlO_2 by the action of H_2SO_4 contains 15-20% $\text{Al}(\text{OH})_3$ and 80-85% water, and is contaminated by Na chromates and sulfates, insol. chromite ore, and dolomite particles. For production of aluminogel, the ppt. is dehydrated by double squeezing in a hydraulic press, granulated by extruding as cylinders 6 mm. in diam., dried in a tunnel with countercurrent air, and activated at 325° for 4-6 hrs. Since the product obtained (I) is contaminated, it cannot be used in place of the ordinary aluminogel (II) in the catalytic processes, but as adsorbent, it surpasses II and silica gel especially for drying air with high water vapor content. Factory expts. show that I dries O (dew pt. -54°) better than II and that the activity of I is twice as high. I can be used in place of silica gel for drying used transformer oils during which time the activation temp. does not affect its reactivity. Compared with other adsorbents, I appears to be the most active. It lowers the acid no. from 0.4 to 0.04-0.03 mg. of KOH after percolation, and to 0.064 mg. KOH when the contact method is used. Its consumption is 50 kg. per ton of oxidized oil. I, used for purifying oil, can be reactivated (3 times) by washing the oil aw. r from it with a boiling distillate and drying at 110° . When the reactivation is considered, the consumption per ton of oil is 17-20 kg. of I.

N. Vasileff

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

PROCESSES AND PROPERTIES INDEX

Heat-utilizing steam boilers. H. P. Volgin. *J. Chem Ind. (U. S. S. R.)* 18, No. 20, 23-5 (1941). A cast Fe boiler is described which is heated by the gases from burning pyrites. H. M. Leicester

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COMMON ELEMENTS

OPEN

MATERIALS INDEX

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

COMMON SYMBOLS

RELATIONS

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

ZHIVAYKIN, L.Ya.; VOLGIN, B.P.

Hydrodynamics of the flow of thin liquid films. [Trudy]
UNIKHIM no.9:114-121 '61. (MIRA 15:12)
(Metallic films) (Fluid dynamics)

VOLGIN, F.

VOLGIN, F. Amur (Priroda i liudi Amurskago Kraia.) (S 17 ris., 2 portr. i kartoi Amura). S.-Peterburg, 1896. 144 p.

DLC: EK771.A3V

So: LC, Soviet Geography, Part II, 1951/Unclassified

VOIGIN, G.M.

On the problem of hypnotherapy in glossalgia. Stomatologia 36.
no.3:71 My-Je '57. (MLBA 10:9)

1. Iz gorodskoy stomatologicheskoy polikliniki (glavnyy vrach
N.T.Gitel'man) g.Makhachkala
(TONGUE--DISEASES) (HYPNOTISM--THERAPEUTIC USE)

VOLGIN, I.P.; OZEROV, F.A.

Automatic spring coiling machine. Mashinostroitel' no.3:7-8
Mr '64. (MIRA 17:4)

VOLGIN, I. V.

Cand Tech Sci - (diss) "Study of wear and foundation of the indications for discarding gears of tractor transmission." Moscow, 1961. 20 pp with diagrams; (Joint Academic Council of the All-Union Scientific Research Inst of Mechanization of Agriculture "VIM" and the All-Union Sci Res Inst for Electrification of Agriculture "VIESKh"); 200 copies; price not given; (KL, 7-61 sup, 233)

ARTEM'YEV, Yu.N.; VOLGIN, I.V.; GAL'PERIN, A.S.; DYADYUSHKO, V.P.;
KAPLUN, I.B.; LAVRISHCHEV, V.N.; NEFEDOV, B.B.; TEL'POV, A.S.;
CHICHEV, Yu.I., red.

[Control of technical conditions of tractor parts in repair-
ing; a handbook. Traktors DT-54, DT-54A, T-75, "Belarus',"
T-40, T-28, DT-14, DT-14A, DT-14B, DT-20, self-propelled
chassis DVSSh-16 and T-16] Kontrol' tekhnicheskogo sostoyaniia
+ traktornykh detalei pri remonte; spravochnik. Traktory
DT-54, DT-54A, T-75, "Belarus'," T-40, T-28, DT-14, DT-14A,
DT-14B, DT-20, samokhodnye shassi DVSSh-16 i T-16. Moskva,
Kolos, 1965. 471 p. (MIRA 18:4)

VOLGIN, I.V., inzh.

~~Establishing specifications for discarding tractor gears. Mekh. i
elek. sots. sel'khoz. 16 no.3:29-32 '58. (MIRA 11:6)~~

1. Gosudarstvennyy soyuznyy nauchno-issledovatel'skiy institut tekhnologii i remonta traktorov i sel'skokhozyaystvennykh mashin.
(Tractors--Transmission devices)

VOLGIN, L.

School for locomotive engineers. Tr. from the Russian. p. 227.
ZELEZNICE, Prague, Vol. 4, no. 9, Sept. 1954.

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 5, No. 6,
June 1956, Uncl.

32974
S/146/61/004/006/020/020
D221/D301

9,6000 (1089,1040,1139)

AUTHOR: Volgin, L. I.

TITLE: On estimating errors in scales of voltage level meters, calibrated in logarithmic units of transmission

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Proborostro-yeniye, v. 4, no. 6, 1961, 154-156

TEXT: In most instruments for measuring levels in electronic or detector systems with electromagnetic actuation, there is a linear relationship between the deviation of the pointer and the current. The non-linearity of the scale is due to units of measurements (napers and decibels), when the calibration with regard to the input of the instrument for napers is $p = \ln \frac{U}{U_0}$, and for decibels it is $p = 20 \log \frac{U}{U_0}$, where U_0 is the reference voltage. The analytical relationship which permits estimation of scale error is

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S/146/61/004/006/020/020
D221/D301

On estimating errors ...

given by $\Delta p = f(p, p_n, \Delta p_n)$ where Δp is the permitted absolute error of reading, corresponding to the indicated value p ; p_n is the nominal division of the scale; Δp_n is the absolute error, corresponding to the class of the meter. The deviation is given by

$$\alpha = aU_0 e^p \quad (4)$$

where a is a numerical coefficient. The scale is then divided into k equal parts, where k is a whole part of $\alpha_n / \Delta \alpha$. For any section of the division, it is possible to write

$$\Delta \alpha_i = \alpha_i - \alpha_{i-1} = aU_0 e^{p_i} (1 - e^{p_{i-1} - p_i}) \quad (5)$$

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On estimating errors ...

where $i = 1, 2, 3 \dots k$ is the number of division. Therefore,
 $e^p(1 - e^{\Delta p}) = e^{pn}(1 - e^{\Delta pn})$ where $\Delta p = p_{i-1} - p_i$; $\Delta p_n = p_c - p_{c-1}$
 $- p_c$; $p_n = p_c$ and $p = p_i$. By solving for Δp , it is deduced that
 $\Delta p = \ln [1 - e^n(1 - e^{\Delta pn})]$, where $n = p_n - p$ is the difference in
 napers between the nominal value of the scale and the value at the
 selected point. Under conditions of $|\Delta p_n| \ll 1$ and $|-e^n(1 - e^{\Delta pn})|$
 $\ll 1$, it is possible to obtain

$$\Delta p \approx e^n \Delta p_n \tag{8}$$

The empirical relation given by other authors for naper calibrated
 scales, $\Delta p \approx \Delta p_n(1 + n)$, may be obtained as an approximation from
 the previous equation. The assumption is valid when $|n| \ll 1$, i.e.,
 at the end of scale. At the beginning of the scale,
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D221/D301

On estimating errors ...

$$\Delta p \approx \Delta p_n (1 + n) \tag{9}$$

4

indicates only the order of the error. This is illustrated by a numerical example. Similarly, for decibel calibration it is deduced that

$$\Delta p = 20 \lg \left[1 - 10^{n/20} \cdot (1 - 10^{\Delta p_n/20}) \right] \tag{7a}$$

$$\Delta p = 10^{n/20} \cdot \Delta p_n \tag{8a}$$

$$\Delta p = \Delta p_n (1 + 0,115 n) \tag{9a}$$

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On estimating errors ...

The working part of scale is well approximated by Eqs. (8) and (8a). Coarse determination of errors can be ensured by Eq. (9) and (9a). This article was recommended by the Kafedra avtomatiki i telemekhaniki Tallinskogo politekhnicheskogo instituta (Department of Automation and Telemechanics of the Tallin Polytechnic Institute). There is 1 Soviet-bloc reference.

SUBMITTED: May 23, 1961

+

Card 5/5

VOLGIN, L.I.

Evaluating errors along functional scales of measuring instruments
with indicators. Izv. vuzov. no.11:29-30 N '63. (MIRA 16:12)

VOLGIN, I. I.

Determining the methodical error of a gliding-bias RMS linear
detector. Izv. AN Est. SSR. Ser. fiz.-mat. i tekh. nauk 12
no.2:164-171 '63. (MIRA 16:10)

L 48814-65 EWT(1)/EWG(m)/EWA(h) Feb
ACCESSION NR: AP5008338

S/0115/65/000/001/0043/0045

AUTHOR: Volgin, L. I.

TITLE: Linear capacitance-to-dc-voltage converter 15

8
B

SOURCE: Izmeritel'naya tekhnika, no. 1, 1965, 43-45

TOPIC TAGS: capacitance voltage converter

ABSTRACT: An operational amplifier is suggested for linear capacitance-to-voltage conversion. A sinusoidal voltage, via the input capacitor, is applied to an amplifier; from the amplifier output, the voltage U_{in} is applied to a second amplifier whose feedback circuit includes a two-diode detector; the latter ensures the linearity of the $U_{out} = f U_{in}$ characteristic of the a-c/d-c converter starting from $U_{in} = 1$ mv. An analysis of possible errors shows that the overall converter error can be kept to within a fraction of one per cent, provided the a-c ripple is suppressed at a ratio of 30,000 and the a-c source voltage instability is kept to within 0.1-0.2%. Orig. art. has: 2 figures and 10 formulas.

Card 1/2

L 48814-65

ACCESSION NR: AP5008338

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: DP, EC

NO REF SOV: 001

OTHER: 001

Card 2/2

VOLGIN, L.I.

Evaluating errors along the scales of voltage-level meters graduated in logarithmic transmission units. Izv.vys.ucheb. zav.; prib. 4 no.6:154-156 '61. (MIRA 14:12)

1. Rekomendovana kafedroy avtomatiki i telemekhaniki Tallinskogo politekhnicheskogo instituta.
(Electric measurements)

L 30108-65 EWI(a)/EED-2/ENP(1) Pc-4/Pq-4/Pg-4/Pk-4/Pl-4 IJF(c) BB/CG/GS/BC

ACCESSION NR: AT5004125

S/0000/64/000/000/0340/0347

52
BHI

AUTHOR: Volgin, L. N.

TITLE: Combined control systems with digital computers

SOURCE: Vsesoyuznoye soveshchaniye po teorii invariantnosti i veyu primeneniyu v avtomaticheskikh sistemakh. 2d, Kiev, 1962. Teoriya invariantnosti v sistemakh avtomaticheskogo upravleniya (Theory of invariance in automatic control systems); trudy soveshchaniya. Moscow, Izd-vo Nauka, 1964, 340-347

TOPIC TAGS: digital computer, control system stability, automatic control system, combined control system, invariance theory

ABSTRACT: Combined control systems with digital computers are investigated. This article attempts to show that the use of computers to compensate for the transfer functions of the objects can overcome the inertia of the objects and the effect of external perturbations. It is shown, however, that the complete compensation of continuous objects by continuous-type computers is impossible. The author goes on to show that pulse computers have a considerably wider class of permissible transfer functions than the continuous type; therefore, their use in automatic control systems yields the possibility of attaining that quality of processes and those

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L 30108-65

ACCESSION NR: AT5004125

dynamic properties which are impossible in continuous-type systems. Programs ensuring the obtainment of systems with a minimum time of establishing transfer processes are then obtained. The article concludes with a calculation of compensation in a closed system in the presence of controlling and perturbing actions and a calculation of the shortest transfer process in combined systems with one external action and with two external actions. Orig. art. has: 13 figures and 55 formulas.

ASSOCIATION: None

SUBMITTED: 24 Sep 64

ENCL: 00

SUB CODE: IE, DP

NO REF SOV: 003

OTHER: 000

Card 2/2

I 32135-65 ENT(d)/EPF(n)-2/ENP(1) Po-4/Pq-4/Pg-4/Pae-2/Fu-4/Pk-4/PL-4
IJP(c) WW/BC

ACCESSION NR: AP5002684

S/0280/64/000/006/0081/0084

AUTHOR: Volgin, L. N. (Moscow)

51
B

TITLE: Problem of synthesizing ^{the} learning and self-learning automatic-control systems.

SOURCE: AN SSSR. Izvestiya. Tekhnicheskaya kibernetika, no. 6, 1964, 81-84

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

ABSTRACT: An improvement in the development of learning and self-learning systems by pattern-recognition methods is suggested. The use of interpolation between patterns is also suggested; this is feasible because, in automatic-control problems, the concept "pattern" means "operator's skill," "control method," or the like. A generalized block diagram comprising a plant and a digital computer is considered. Specially programed input signals and plant parameters form a

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L 32135-65

ACCESSION NR: AP5002684

vector of real numbers "a." Control signal parameters forming a vector "b" are used as "patterns." The recognizing program is, in fact, an associative memory $a \rightarrow b$. It is shown that the number of teaching associations can be considerably reduced by introducing a linear interpolation. The method of interpolation is described. In the self-learning system, an additional program should be set up for the "pattern" of optimal control. However, it should be called upon only in those cases when there is no suitable program among the regularly stored programs. Orig. art. has: 2 figures and 8 formulas.

ASSOCIATION: none

SUBMITTED: 23Oct63

ENCL: 00

SUB CODE: DF, IE

NO REF SOV: 008

OTHER: 001

Card 2/2

VOLGIN, L.N.

"Synthesis of optimal sampled data systems."

Report submitted to the Second Intl. Congress of the Intl. Federation
of Automatic Control, Basel, Switzerland, 27-Aug-4 Sep 1963

Volgin, L.N.

S/024/60/000/04/005/013
E140/E463 8 2209

13,2000

AUTHOR: Volgin, L.N. (Moscow)

TITLE: Statistical Calculation of Discrete Automatic Systems⁹

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Energetika i avtomatika, 1960, No.4, pp.94-101

TEXT: The author uses the method of the z-transform to solve the syntheses of discrete automatic control systems described by linear difference equations with constant coefficients, both stable and unstable, with signals constituting the sums of slowly varying and stationary random functions of time. The random components of the useful signal and the noise have zero mean values and are statistically independent. The error in such a system consists of a slowly varying component (dynamic error) and a statistical error due to the random component of the signal and the noise. A corrective circuit for such a system should satisfy certain requirements, which are found to be compatible, and a method is developed for its design. Four special cases are considered: stable controlled object; absence of noise and random signal component; stationary signal (absence of slowly varying signal component); no prescribed part of the system. There are two
Card 1/2

X

S/024/60/000/04/005/013
E140/E463 82209

Statistical Calculation of Discrete Automatic Systems

appendices on the manipulation of polynomial equations. There are 5 references: 3 Soviet and 2 English.

SUBMITTED: January 16, 19⁶50

Card 2/2

S/103/60/021/008/007/014
B012/B063

AUTHORS: Volgin, L. N., Smolyar, L. I. (Moscow)

TITLE: Correction of Servosystems With the Help of Discrete Computers

PERIODICAL: Avtomatika i telemekhanika, 1960, Vol. 21, No. 8, pp. 1158-1164

TEXT: Reference is made to the methods of calculating systems and elements in automation, which are based on the theory of steady processes. Mention is made in this connection of papers by A. Ya. Khinchin (Ref. 1), A. N. Kolmogorov (Ref. 2), and the representation of this theory in A. M. Yaglom's paper (Ref. 3). Statistical methods of calculating various technical installations were further developed in papers by V. V. Solodovnikov (Ref. 5), V. S. Pugachev (Ref. 6), Ya. Z. Tsypkin (Ref. 7), and L. T. Kuzin (Ref. 8). The present paper gives a solution to the "synthesis" of computers for any controlled objects, i.e., both for stable and unstable ones. It deals especially with the "synthesis" of servosystems with discrete computers. The problem is characterized by the fact that only part

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Correction of Servosystems With the Help of
Discrete Computers

S/103/50/021/008/007/014
B012/B065

of the system, i.e., the discrete computer that serves as a corrective member is "synthesized", whereas the controlled object is given. Contrary to S. S. Cheng's method (Ref. 9), the solution offered here is based on the method of polynomial equations. This method was elaborated in the paper of Ref. 10. The problem to be solved is transformed into a system of two polynomial equations, the solution of which is given in the appendix. Some results of the theory of discrete steady processes, obtained in the above-mentioned papers of Refs. 3, 4, 7 - 9, are given next. It is noted that the method applied here is slightly different from those of these papers. The delay operator z is used as the main operator. It is related to the differential operator p and the delay time T in the following manner: $z = \exp(-pT)$. The use of the physically realizable operator $\exp(-pT)$ instead of $\exp(pT)$ facilitates the calculation of dynamic systems. The authors studied only such processes whose correlation representations are rational functions of z . A method is given for the development of a correlation representation according to the sequence of correlation factors. Next, formula (16) is written down for the transmission function of the servosystem with a discrete computer. The sum of

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Correction of Servosystems With the Help of
Discrete Computers

S/103/60/021/008/007/014
B012/E063

two processes, i.e., the intelligence signal $S(z)$ and the noise $N(z)$, reaches the input of the servosystem. It is assumed that the two processes be steady and statistically independent, and have zero mean values and given correlation factors. The requirements to be met for the selection of the program of the discrete computer are described: The system must be stable, the program of the discrete computer must be physically realizable, the condition of "rough" must be taken into account for the "synthesis" of the system, and the system must be an optimum. Then, the algorithm for the selection of the program is given. In conclusion, it is noted that the method of calculating such systems is greatly influenced by the condition of maintaining "rough" of the system when introducing computers into it. Theory has shown that the introduction of computers into servosystems makes it always possible to obtain optimum systems that satisfy the condition of "rough". The quality of the system, however, will be lower for unstable controlled objects than for stable ones. Besides, the control program for unstable objects is more complicated. The controlled object should be stabilized by means of additional internal connections. If such

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Correction of Servosystems With the Help of
Discrete Computers

S/103/60/021/008/007/014
B012/B063

connections cannot be introduced, it is possible to use discrete computers.
There are 10 references: 8 Soviet and 2 US.

SUBMITTED: January 11, 1960

Card 4/4

VOLGIN, L.N. (Moskva)

Synthesis of discrete automatic systems with limited controlling
action. Izv.AN SSSR.Otd tekhn.nauk.Energ.i avtom. no.2:114-119
Mr-Ap '61. (MIRA 14:4)

1. Institut elektronnykh upravlyayushchikh mashin AN SSSR.
(Automatic control)

VOLGIN, L.N.; SKLYAR, S.S.

Algebraic methods for calculating linear automatic control systems
with digital computing devices. Izv. vyz. ucheb. zav.;
radiofiz. 4 no.3:581-583 '61. (NINA 14:10)

.. Institut elektromekhanicheskogo upravleniya mashinami SSSR.
(Automatic control)

38831
S/103/62/023/006/003/012
D230/D308

16.6800

AUTHORS:

Volgin, L.N. and Fal'kovich, A.I. (Moscow)

TITLE:

Synthesis of discrete data-processing devices with a variable program

PERIODICAL:

Avtomatika i telemekhanika, v. 23, no. 6, 1962, 732-733

ABSTRACT:

In the analysis of the data-processing devices the following requirements are aimed at: (i) complete elimination of the dynamic error in the shortest time, (ii) relative dispersion minimum of the random error and, (iii) a steady improvement in the accuracy of data processing with program complexity. The operational program of a discrete computer satisfying these requirements is a polynomial in z , whose order increases from the moment $i = 0$ of switching on and rises to unity within each step $H_i(z)$, where $H_i(z) =$ variable program. An algorithm of the variable program synthesis is formulated yielding complete elimination of the dynamic error. The condi-

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Synthesis of discrete ...

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D230/D308

tion of minimum dispersion of random error is found to be fulfilled. As an example, a program is prepared for a discrete computer designed to extrapolate a two-bit random digital succession with the mean value $N(z) = \Omega(z)/(1-z)^M$. It is shown that the dynamic error disappears at the first step: Random error decreases with complexity of the operation program. As soon as the apparatus reaches a given accuracy the program is locked. In conclusion it is stated that the polynomial equations can be used successfully for the synthesis of a certain type of system with variable parameters. The solution of the polynomial equations to which the program synthesis is reduced, is a simple mathematical operation. The proposed data-processing device can be realized using ordinary digital computers.

SUBMITTED: October 14, 1961

Card 2/2

L 04986-67 EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(l) GD

ACC NR: AT6016435

(A)

SOURCE CODE: UR/0000/85/000/000/0050/0059

AUTHOR: Volgin, L. N.

ORG: none

TITLE: Synthesis of optimum pulsed systems

SOURCE: International Federation of Automatic Control. International Congress. 2d, Basel, 1963. Diskretnyye i samonastroyayushchiyesya sistemy (Discrete and adaptive systems); trudy kongressa. Moscow, Izd-vo Nauka, 1965, 50-59

TOPIC TAGS: automatic control theory, optimum automatic control, computer control system

ABSTRACT: New ways of formalizing decisions and lightening computational work must be found because of growth in computational difficulties involved in scientifically-based planning of intricate automatic complexes. A substantial achievement here is creation of methods of linear, nonlinear, and dynamic programming. The author discusses the synthesis of optimum pulsed systems under the heads of analytic conditions of pulsed system work capacity, criteria of work capability of the basic structures of automatic pulsed systems, and use of

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polynomial equations in synthesizing optimum pulsed systems. Work capability conditions formulated restrict possibility of arbitrary change in properties of controlled plants by means of pulsed computing devices. Here instability, lag, and fluctuation are hardest to overcome. Limits of accuracy in control of dynamic plants by pulsed computer devices are not unbounded, although they are wider than for continuous-type devices. Physically this means that plant inertia cannot be completely overcome. Automatic control theory should further explain the limits of possible accuracy of control to realize these possibilities by designing the most improved control machines. Research in the theory of polynomial equations adapted to this purpose is very promising. The author expresses his deep gratitude to Prof. Ya. Z. Tsypkin for a statement and discussion of some questions in this report. Orig. art. has: 30 formulas.

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VOLGIN, L.H. (Moskva)

Construction of learning and self-teaching automatic control
systems. Izv. AN SSSR. Tekh. kib. no.6:81-84 N-D '64.

(MIRA 18:3)

VOLGIN, L.N. (Moscow)

Programming of optimal control processes of linear objects.
Avtom. i telemekh. 25 no.11:1538-1544 N 161 (MIRA 18:1)

VOLGIN, L.N. (Moskva)

Programming of digital computers for handling information according
to the least squares method. Avtom. i telem. 24 no.9:1234-1288
S '63. (MIRA 16:9)
(Electronic digital computers) (Automatic control)

VOLGIN, Lev N.

[Elements of the theory of control machines] Elementy
teorii upravliaiushchikh mashin. Moskva, Sovetskoe radio,
1962. 155 p. (MIRA 16:12)
(Automatic control)
(Electronic digital computers)

VOLGIN, L. N. (Moskva)

A correction to the article "Statistical calculation of discrete
automatic control systems." Izv. AN SSSR, Otd. tekhn. nauk.
Energ. i avtom. no.6:201-202 N-D '62. (MIFA 16:1)

(Automatic control)

VOLGIN, L. N.

Dissertation defended at the Institute of Automation and Telemechanics
for the academic degree of Candidate of Technical Sciences:

"Synthesis of Optimal Impulse Systems of Automatic Control."

Vestnik Akad Nauk, No. 4, 1963, pp. 119-145

VOIGIN, Lev Nikolayevich; IVANUSHKO, N.D., red.; SVESHNIKOV, A.A.,
tekhn. red.

[Elements of the theory of computer control; polynomial equations in problems of the synthesis of automatic control systems with digital computers]Elementy teorii upravlianiushchikh mashin; metod polinomial'nykh uravnenii v zadachakh sinteza sistem avtomaticheskogo upravleniia s tsifrovymi vychislitel'nyimi mashinami. Moskva, Sovetskoe radio, 1962. 163 p.
(MIRA 15:11)

(Electronic computers) (Automatic control)