

SOKOLOV, N.G., kand.tekhn.nauk; SHEKHVITS, E.I., kand.tekhn.nauk

Modernization of the vertical milling machine. Mashinostroitel'  
no.1:13-14 Ja '61. (MIRA 14:3)  
(Milling machines--Technological innovations)

MINSKER, Emmanuil Isaakovich; SOKOLOV, Nikolay Georgiyevich;  
KAMINSKIY, Ye.A., red.; BORUNOV, N.I., tekhn. red.

[Electric wiring of metal-cutting machine tools]Elektricheskie provodki metallovezhushchikh stankov. Moskva, Gosenergoizdat, 1962. 63 p. (Biblioteka elektromontera, no.70)

(MIRA 16:1)

(Machines---Electric driving)

SANDLER, A.S.; SOKOLOV, N.G.

[Collection of automatic control systems for electric drives  
of machine tools] Sbornik skhem avtomaticheskogo upravle-  
niia elektroprivodami metallorezhushchikh stankov. Izd.2.,  
perer. i dop. Moskva, Mosk. energ. in-t, 1963. 31 p.  
(MIRA 16:10)

(Machine tools--Electric driving)  
(Automatic control)

SOKOLOV, Nikolay Georgiyevich; KORENEVSKIY, A.N., retsenzent;  
BIGERMAN, I.I., red.

[Principles of the design of electric drives] Osnovy  
konstruirovaniia elektroprivodov. Moskva, Energiia, 1965.  
287 p. (MIRA 18:5)

SOKOLOV, N.I.

DECEASED

1962/

Geology

C' 1961

4

records center  
~~SECRET~~

COELOGY

... ..

"Concerning the Revision and in Defense of Professor Dedyulin's Method".  
Vestn. sovrem. v terin., 1929, No. 2.

DOMOLOV, E. I. (Lecturer), BILIMIROV, I. A. (Professor), and VAYNTRUB, A. M.

"The etiology of infertility in cattle in Leningrad oblast and some bases for its therapy and prophylaxis", (Assistant, Department of Obstetrics and Gynecology).  
Collected Works No. 14, of Leningrad Veterinary Institute USSR Ministry of Agriculture  
P 109, Sel'khozgiz, 1954.

BOGOLYB, N. I. (Lecturer) and VAINTIKOV, A. A. (Assistant, Department of Obstetrics and Gynecology)

"Use of penicillin for prophylaxis of the postnatal infection in cows," Collected Works No. 14, of Leningrad Veterinary Institute USSR Ministry of Agriculture, P 119, Sel'khozgiz, 1954.



SOKOLOV, N.I., dotsent.

Use of phytoncides of onion and garlic in gynecological diseases.  
Veterinariia 31 no.2:51-52 F '54. (MLRA 7:2)

1. Leningradskiy veterinarnyy institut.  
(Phytoncides) (Genitourinary organs--Diseases)

SOKOLOV, N.I., dotsent.

Use of conifer chlorophyll carotene paste for treating vaginitis  
and endometritis in cows. Veterinariia 32 no.2:60-61 P '55.

(MLRA 8:3)

L.Leningradskiy veterinarnyy institut.

(COWS--DISEASES) (VETERINARY MATERIA MEDICA AND PHARMACY)

SOKOLOV, N. I.

Sokolov, N. I.

"The etiology, therapy, and prophylaxis of sterility in cattle on the sovkhoses and kolkhozes of the Leningrad suburban area." Leningrad Veterinary Inst, Min Higher Education USSR. Leningrad, 1956.

\* (Dissertation for the Degree of Doctor in Sciences.)

\* degree of Doctor of Veterinary Sciences

Knizhnaya Letopis'

No. 25, 1956. Moscow.

Name: SOKOLOV, Nikolay Ivanovich

Dissertation: Etiology, therapy and prophylaxis  
of sterility in cattle of sovkhoses  
and kolkhozes

Degree: Doc Vet Sci

Affiliation: Not indicated

Defense Date, Place: 14 Jun 56, Council of Leningrad Vet  
Inst

Certification Date: 20 Apr 57

Source: FMVO 14/57

SOKOLOV, N.I., doktor veter.nauk

Characteristics of the course of postnatal infection and septic  
endometritis in cows. Veterinariia 37 no.1:41-44 Ja '60.  
(MIRA 16:6)

1. Leningradskiy veterinarnyy institut.  
(Endometriosis) (Cows--Diseases)

SOKOLOV, N.I., doktor veterinarnykh nauk

Treatment of cows with puerperal infection. Veterinariia 37 no.12:  
48 D '60. (MIRA 15:4)

1. Leningradskiy veterinarnyy institut.  
(Veterinary obstetrics)

SOKOLOV, Nikolay Ivanovich; VAYNTRAUB, Aleksandr Moiseyevich  
[deceased]; POLYAKOV, P.Ya., red.; YAKOVLEVA, V.K., tekhn.  
red.

[First aid in calving] Pervaia pomoshch' pri otelakh. Izd.2.,  
dop. i ispr. Leningrad, Sel'khozgiz, 1961. 69 p.  
(MIRA 15:8)

(Veterinary obstetrics)

SOKOLOV, N.I.

Diphyllobothriasis of predatory fishes. Veterinariia 41 no.9:66  
S '64. (MIRA 18:4)

1. Starshiy veterinarnyy vrach Ivanovskoy oblastnoy veterinarnoy  
laboratorii.



BOLOLOV, N. I.

Mbr., Chita Mil. Hosp., -c1943-c49-. Cand. Medical Sci. Lt. Col., Med. Corps, -c1949-.  
Medicine. "Conduction Anesthesia of the Brachial Plexus through the Posterior Scala  
Aperture," Vest. Khirurgii, 68, No. 3, 1948; "Operative Treatment for Congenital Hernia  
Cerebri on the Forehead," Vest. Oto-rino-laringol., No. 2, 1949.

SOKOLOV, N. I.

PA 17/49797

USSR/Medicine - Anesthesia, Conduction Mar 48  
Medicine - Anesthesia, Local and Regional

"Conduction Anesthesia of the Brachial Plexus Through  
the Posterior Scala Aperture," N. I. Sokolov,  
Chitinsk Mil Hosp, 4 pp

"Vest Khirurgii" Vol LXVIII, No 3

Explains disadvantages of Kulenkampf's method.  
Sokolov describes own method in detail. Has used  
it 130 times.

17 /10707

31032. EKOLOV, N. I.

Vduvanie vozdukha kak metod profila kfiki i lecheniya tugopodvizhnosti  
v susta vakh posle travm. Vestnik khirurgii im. Grekova, 1949, No. 4, s. 31-33

SOKOLOV N. I. Operative treatment of battle injuries of peripheral nerves  
*Khirurgiya* 1949, 11 (48-54)

The author reviews a number of operations of battle injury: 115 on the peripheral nerves of the upper limb (22 on the brachial plexus and 1 on the cervical plexus), 79 on the peripheral nerves of the lower limb and 15 on the sympathetic nervous system. The procedures were as follows: neurolysis 114, suture 37, partial suture 39, neurectomy 4, periarterial sympathectomy 2, and ganglionectomy 13. In 63 cases there was major bone injury and in 14 cases major blood vessel injury. Trophic ulcers were present in 6 cases of sciatic palsy, contractures in 26 cases, and causalgia in 20 cases. The period between wounding and operation varied between 1½ months to 2 months after injury if there was no recovery of nerve function, except in brachial plexus and sciatic injury when the period was increased to three months. Sepsis and severe limb contractures were contraindications, unless in the latter there was associated and marked causalgia. In cases of delayed primary suture three weeks was the usual interval. For treatment of causalgia the author inclines to operation, with emphasis on the exclusion of local nerve lesions such as division or scarring before turning to sympathectomy. Thus in 6 cases excision of a lateral neuroma and partial suture was successful in relieving symptoms. Periarterial sympathectomy was abandoned as useless for this purpose. Cervical and lumbar sympathectomy gave the best results; in 8 cases out

Page 2

of 10 the condition improved considerably or was cured. Endoneurolysis performed in 5 cases on the sciatic nerve was found to be technically difficult and did not relieve pain. Mobilization of the nerve ends was used to overcome defects of up to 6 or 7 cm., but larger gaps were bridged by homotransplants in 3 cases and by an autotransplant in 1 case. When the sciatic nerve was damaged at its exit from the pelvis and the proximal fragment had retracted beyond reach, the superior gluteal nerve was sutured to the distal fragment. Neurolysis caused varying degrees of improvement, either motor or sensory in 90% of cases, but resection of neuromata gave on the whole better results. In 2 cases of severe causalgia sub-arachnoid injection of alcohol at the levels of the affected nerve roots was found ineffective. The disposal of 105 patients was known; 51 returned to army duties, 48 were temporarily unfit and 6 were totally unfit. (This report gives no details of degrees of recovery, but only outlines results in general form.)

Zinovieff - World Medical Abstracts (IX, 8)

So: Neurology & Psychiatry Section VIII, Vol. 4, No. 1-6

SOKOLOV, N.I.

Ligature of the left gastric artery in connection with operative immobilization of the stomach. Khirurgia, Moskva, No.5:5-13 May 50. (CIML 19:4)

1. Chita.

SCKOLOV, N.I.

Congenital encephalocele. Khirurgiia no.9:37-42 S '54. (MIRA 7:12)  
(ENCEPHALOCELE,  
congen.)

SOKOLOV, N.I. (L'vov)

Spontaneous clonus of muscles of the abdominal wall as a symptom  
of spinal diseases. Klin. med. 32 no.8:71 Ag '54. (MLRA 7:10)

(SPINE, diseases,  
manifest., clonus of abdominal wall)  
(ABDOMINAL WALL, diseases,  
clonus, as manifest. of dis. of spine)



SOKOLOV N.I., kandidat meditsinskikh nauk, L'vov, ul. Krupskoy, d.  
19, kv. 10.

Metal nails fit for irrigation for intramedullary nailing of  
long bones. Vest.khir. 75 no.5:122-125 Je '55. (MLBA 8:10)

(FRACTURES, surgery,  
intramedullary nailing with irrigation)  
(IRRIGATION,  
in intramedullary nailing)

SOKOLOV, N.I., kandidat meditsinskikh nauk; L'vov, ul. Krupskoy 12,  
kv. 10.

Ligature holders. Vest.khir.75 no.6:135-137 J1 '55.(MLBA 8:10)  
(SURGERY, OPERATIVE, apparatus and instruments  
case for ligatures)  
(SUTURES  
ligatures, spherical & cylindrical cases)

SOKOLOV, N.I., kand.med.nauk (L'vov, ul. Krupskoy, d.12, kv. 10)

Prevention of mistakes in the treatment of fractures of the long  
bones by medullary nailing. Nov.khir.arkh. no.6:27-32 N-D '58.  
(MIRA 12:3)

(FRACTURES)

BOROVSKIY, Viktor Anastasyevich; SOKOLOV, Nikolay Ivanovich

[Organizational and economic consolidation of the collective farms of Kazakhstan] Organizatsionno-khoziaistvennoe ukreplenie kolkhozov Kazakhstana. Alma-Ata, Kazgosizdat, 1961. 117 p. (MIRA 15:8)

(Kazakhstan--Collective farms)

SOKOLOV, N.I., inzhener; PANINA, A.V. inzhener.

Method of air separation for reclamation of used burned foundry  
sands; experience of the Krasnaia Vagranka Plant. Proizv.-tekhn.  
inform. no.2:39-43 '51. (MIRA 10:3)  
(Sand, Foundry) (Separators (Machinery))

ANGELOV, I.I.; PEVTSOV, G.A.; SOKOLOV, N.I.; DMITRIYEVA, N.S.

Preparation of spectrally pure salts of cesium and rubidium.  
Trudy IRRA no.23:40-46 '59. (MIRA 13:7)  
(Cesium salts) (Rubidium salts)

SOKOLOV, N.I., inzh.

New equipment for preparing keramzit granules. Stroi. mat. 9  
no.10:35 0 '63. (MIRA 16:11)

Sokolov, N. I.

I-26

USSR/Chemical Technology. Chemical Products  
and Their Application--Synthetic fibers

Abs Jour: Ref Zhur-Khimiya, No 3, 1957, 10096

Author : Angelov, I. I. and Sokolov, N. I.  
Inst : All-Union Science Research Institute for Chemical  
Reagents

Title : On the Utilization of Perchloroethylene Filters  
in the Production of Chemical Reagents.

Orig Pub: Tr. Vses. n.-i. in-ta khim. reaktivov, 1956, No 21,  
102-104

Abstract: Perchloroethylene filters are suited for the  
production of corrosive chemical reagents because  
of their chemical inertness which eliminates the  
contamination of the solutions. At 90-95° perch-  
loroethylene is not affected by long contact with  
aque regia, melanzh /Tl: presumably a mixture of  
reagents/, H<sub>2</sub>SO<sub>4</sub>, HNO<sub>3</sub>, HCl, alkaline solutions  
solutions of all concentrations, various salts,

Card 1/2



SOV-120-58-1-2/43

AUTHORS: Kondrashev, L.F., Kurashov, A.A., Linev, A.F., Sidorov, V.A., Sokolov, N.I. and Khaldin, N.N.

TITLE: A Spectrometer for Fast Neutrons (Spektrometr bystrykh neytronov)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1958, Nr 1, pp 17-21 (USSR)

ABSTRACT: The measurement of the fast neutron spectrum is one of the most difficult problems of experimental nuclear physics. The most common method employed in neutron spectroscopy in the energy region of a few MeV is the method of proton recoil. The measurement of the neutron spectrum is reduced to the measurement of the spectrum of the recoil protons which are produced by the neutron beam in a specimen containing hydrogen. There are a number of methods of measuring the proton spectrum. One of these is the nuclear emulsion method but this is very time-consuming and therefore not always convenient. The other methods employ coincidence circuits. Such a system is usually called a "telescope". These telescopes can be used in two ways. In the first method one measures the range of the protons in special absorbers between the counters and in the second method one measures the amplitudes of the pulses from a scintillation counter which is the last

Card 1/3

SOV-120-58-1-2/43

## A Spectrometer for Fast Neutrons.

counter of a telescope. The first of these was used in the present work. The telescope (Fig.1) consists of 4 proportional counters. A polyethylene "radiator" is placed in front of the first counter and two sets of aluminium absorbers are used to measure the range of recoil protons in aluminium. The first and main set of absorbers is placed in front and the third counter and the second set of filters in front of the fourth one. The first, second and third counters are in coincidence and the fourth in anti-coincidence. Thus one records recoil protons formed in the radiator and whose path ends before the fourth counter. An estimate of the proton loss due to multiple scattering was made, using the curves of Dickinson and Dodder (Ref.2). The figure obtained for this loss was less than 5% of the recoil protons. A photograph of the telescope is shown in Figs.2 and 3. The telescope can be used in studying not only neutrons but also charged particles. The spectrometer was used to study the reaction  $T(p, n) He^3$  for proton energies between 7 and 12 MeV. The neutrons were obtained at a target of a 1.5  $\mu$ .

Card 2/3

SOV-120-58-1-2/43

A Spectrometer for Fast Neutrons.

cyclotron. The derived neutron spectrum at zero angle for the above reaction is shown in Fig.5. The following persons are thanked for their cooperation: N. A. Vlasov, S. P. Kalinin, A. A. Shubin and L. N. Samoylov. There are 5 figures, no tables and 6 references, of which 2 are English and 4 Soviet.

SUBMITTED: June 19, 1957.

1. Neutron spectrum analyzers--Equipment
2. Neutron spectrum analyzers--Performance
3. Neutron spectroscopy

Card 3/3

8733  
S/120/60/000/004/012/028  
E032/E414

21.2200

AUTHORS: Kondrashev, L.F., Rybin, S.N., Sokolov, N.I. and  
Khalidin, N.N.

TITLE: Thin Vacuum-Tight Windows

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, No.4, pp.102-105

TEXT: In nuclear reaction studies it is frequently necessary to have thin vacuum-tight windows. The present paper describes some of the designs of such windows which were used in experiments on a 1.5 m cyclotron in which these windows were used for gas targets, vacuum chambers and other devices. The simplest solution of this problem which ensures that the thin window is in a vacuum-tight contact with the body of the apparatus is to solder the window to the body or to attach it with a suitable adhesive. However, this leads to a certain amount of contamination of the evacuated region during the soldering process and the contamination is difficult to remove. In the case of soldering, a further difficulty is encountered since it is difficult to attach the window uniformly over the perimeter. As a result, the thin window is nonuniformly loaded when the apparatus is evacuated. The heating of the material of the window during soldering may lead to nonuniform

Card 1

07373

S/120/60/000/004/012/028  
E032/E414

## Thin Vacuum-Tight Windows

changes in its mechanical properties which are also undesirable, and non-demountable designs present difficulties when it is desired to replace the windows. Fig.1 (1 - window, 3 - thin foil, 4,5 - rubber packing) shows a demountable form of a window in which the thin foil has a cylindrical form and vacuum tightness is ensured by rubber packing. With a gas target of 5 cm in diameter, window height of 1.2 cm and window length along the circular periphery of 9 cm, an 8  $\mu$  thick iron foil withstood pressures in excess of 2.5 atm. With a gas target 10.6 cm in diameter and two windows of 1.7 cm x 5 cm and three windows 2 to 3 cm in diameter, a 30  $\mu$  copper foil withstood pressures up to 1.5 to 2 atm. This type of window was used by Bogdanov et al (Ref.1) in their studies of the proton spectra of the reaction  $\text{He}^4 + d$  at 30°.

Fig.2 (1 - mica plate 10  $\mu$  thick, 4 - rubber packing) shows another type of target in which the window is plain and consists of a 10  $\mu$  thick mica plate maintained in position by brass grids on either side. The transparency of this arrangement was about 65%. The window is made vacuum-tight by rubber packing. A plane window

Card 2/6

87373

S/120/60/000/004/012/026  
E032/E414

## Thin Vacuum-Tight Windows

designed for working pressures up to 10 atm is shown in Fig.3. Here again, the foil 3 forming the wall of the window is supported on a brass grid 4 having a transparency of 70%. Rubber packing ensures vacuum tightness and 30  $\mu$  copper foils and 10  $\mu$  iron foils were used with this design. This type of window was used by Bogdanov et al (Ref.5) in their studies of the polarization of neutrons produced in the  $T(p,n)He^3$  reaction. Fig.4 shows a similar window in which the foil 1 is supported by a tungsten grid 2 made of 0.2 mm diameter wire. Fig.5 shows a design of a thin window used with a  $\beta$ -spectrometer. The cylindrical wall of the window 3 was made from aluminium ribbon 0.5 mm thick; rubber packing ensures vacuum tightness. This window was used by Vlasov and Rudakov (Ref.4) in their studies of the angular  $\beta$ - $\gamma$  correlation in the case of  $Ba^{139}$ . Finally, Fig.6 shows the design of a gas target with a plane, thin wall 3 which was used by Bogdanov et al (Ref.5) in their studies of the spectrum of fast neutrons produced in the bombardment of deuterium by deuterons. Here a platinum foil 30  $\mu$  thick is soldered to the body. The foil is separated by a grid of tungsten

Card 3/6

87.573

S/120/60/000/004/012/028  
E032/E414

Thin Vacuum-Tight Windows

wires 3. The window was found to withstand pressures up to 4 atm. The above devices were assembled and prepared for experiments by A.A.Shubin. There are 6 figures and 5 Soviet references.

SUBMITTED: May 27, 1959

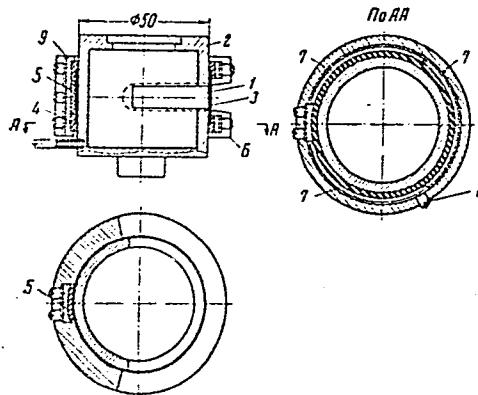


Fig.1.

Рис. 1. Газовая мишень с тонкой цилиндрической стенкой

Card 4/6

SOKOLOV, N.I.

Effect of "a dangerous area" on the accuracy of constructing  
photogrammetric nets. Geod.i kart. no.12:46-50 D '62.  
(MIRA 16:2)

(Aerial photogrammetry)



SOKOLOV, N.I., aspirant-zaochnik

Using the theory of matrices to solve problems of adjusting  
photogrammetric nets. Trudy MIIGAIK no.49:75-81 '62. (MIRA 16:6)

1. Kafedra fotogrammetrii Moskovskogo instituta inzhenerov  
geodezii, aerofotogrammetrii i kartografii.  
(Matrices) (Aerial photogrammetry)

SOKOLOV, N.I.; KHUMDIN, N.N.; ZEVYAKIN, V.V.; PIRYAYEV, V.V.

Vacuum slide-valves. Prib. i tekhn. eksp. # no. 6/197-240  
N-D '63. (NORA 17:6)

ACCESSION NR: AP4033108

S/0120/64/000/002/0061/0063

AUTHOR: Lamunin, V. I.; Rudakov, V. P.; Serikov, I. N.; Sokolov, N. I.;  
Khalidin, N. N.

TITLE: Vacuum scatter chamber for studying charged-particle reactions

SOURCE: Pribory\* i tekhnika eksperimenta, no. 2, 1964, 61-63

TOPIC TAGS: scatter chamber, vacuum scatter chamber, nuclear measurement,  
particle reaction, particle scattering

ABSTRACT: A scatter chamber (see Enclosure 1) consists of a steel housing 1,  
lower lid 2, and upper movable lid 3. The primary particle beam, restricted by  
graphite diaphragms 4 and 5, passes the filter chamber 6 and is collimated by a  
set of tantalum diaphragms. Then, the beam strikes the target and goes into the  
Faraday cylinder. Filter disks 7 are remote-operated by ShI-11 step-by-step  
telephone-type switches located inside the filter chamber. Diaphragms 8 and 10

Card 1/3

ACCESSION NR: AP4033108

belong with the collimator, while diaphragms 9 and 11 remove fringe particles. Detectors are fastened to the movable lid 3 by means of a nipple 15 which is positioned at an angle of  $10^{\circ}$  from the central plane of the chamber. The recording angle can be varied within  $10^{\circ}$ - $170^{\circ}$  without disturbing the vacuum. Remote control is provided for the detector position, target replacement, and filter changes in the primary and secondary beams. Orig. art. has: 2 figures.

ASSOCIATION: none

SUBMITTED: 01Jun63

DATE ACQ: 11May64

ENCL: 01

SUB CODE: NS

NO REF SOV: 004

OTHER: 001

Card 2/3

3. 05070-07 EMT(A)/EMF(Z)/EMK(K)/EMH(H)/EMPL(L)  
ACC NR: AN6018988

Monograph

UR/

24

B+1 14

Sokolov, Nikolay Ivanovich

Analytical method of synthesis of linearized automatic control systems  
(Analiticheskiy metod sinteza linearizovannykh sistem avtomaticheskogo regulirovaniya) Moscow, Izd-vo "Mashinostroyeniye", 1966. 327 p. illus., biblio. Errata slip inserted. 6500 copies printed.

TOPIC TAGS: linear automatic control system, control system synthesis, analytic method

PURPOSE AND COVERAGE: This monograph presents a simple and effective method for synthesizing linearized automatic control systems which is based on generalization and development of known ideas and on new relationships and laws derived by the author. The possibility of realizing the analytic relationships which have been found by means of simple, technically feasible, physical elements is taken into consideration in formulating and solving the problem of synthesizing automatic control systems. This method for synthesizing automatic control systems can be divided into three principal stages: 1) determining the desired transfer function for a control system in closed state; 2) selecting the actuator and the transfer relation of the reduction gear; and, 3) determining the structural design and the

Card 1/6

UDC 629.13: 62-50.001.1

I 05070-67

ACC NR: AM6018988

parameters of the projected automatic control system. In the first stage of synthesis (Chapters IV—X, XIV), the desired transfer function is determined which satisfies each of the following quality criteria separately, or several combined simultaneously: control time, order of astatism, magnitude of overshooting, error factors, value of the dynamic error, minimum root mean square error, etc. for various types of control and input signals applied to the measuring element and the controlled system. In the second stage (Chapter XI), the magnitudes of the displacement, the velocity, and the acceleration of the output coordinates of the actuator are determined in accordance with the desired transfer function of the system and that of the controlled system, then the required power of the actuator and the transfer relationship of the reduction gear are determined for known loads, including nonlinear loads. In the third stage (Chapters XII—XVII), the total structural design of the projected system, the amplification factor of the system in open state, and the transfer function of the automatic control system in closed state are determined. The corresponding system of equations derived here is always mathematically solvable. The second and third stages of this method are self-contained. If the desired transfer function of the system or controller is found by any method, it is easy to find the design and parameters of the synthesized system. This book is intended for

Card 2/6

ACC NR:AM6018988

engineers and technical workers engaged in designing automatic control systems and should be useful to advanced undergraduate and graduate students.

TABLE OF CONTENTS [abridged]:

Foreword -- 3

Notation -- 5

Introduction -- 8

First Part. Some problems of the analysis of linear automatic control systems -- 13

Ch. I. An approximate method for calculating transient processes in linear automatic control systems -- 13

Ch. II. Evaluating the quality of linear automatic control systems with random inputs -- 24

Second Part. The synthesis of linearized automatic control systems -- 37

Card 3/6

L 05070-67

ACC NR: AM6018988

Ch. III. General information -- 37

Ch. IV. Determining the desired transfer function of automatic control systems with a given order of astatism acted upon by given useful signals -- 56

Ch. V. Determining the desired transfer function of automatic control systems with a given order of astatism acted upon by useful signals and by noise -- 77

Ch. VI. Determining the desired transfer function of automatic control systems with a given order of astatism acted upon by a random stationary useful signal -- 85

Ch. VII. Determining the desired transfer function of automatic control systems with a given order of astatism acted upon by random stationary noise -- 103

Ch. VIII. Determining the desired transfer function of automatic control systems with a given order of astatism having random stationary inputs and some given regular useful signals -- 114

Card 4/6



L 05070-07  
ACC NR:AM6018988

- Ch. IX. Selecting the laws for distribution of zeros and poles of a normalized transfer function with various inputs to the systems -- 146
- Ch. X. Determining the desired transfer function of automatic control systems with "finite" memory -- 175
- Ch. XI. Energy calculations for automatic control systems -- 182
- Ch. XII. Determining the structural design and parameters of automatic control systems in accordance with the desired transfer function -- 198
- Ch. XIII. Determining the structural design and parameters of automatic control systems from the condition of approximate equality of its transfer function and the desired transfer function -- 223
- Ch. XIV. The synthesis of automatic control systems with parallel correcting devices including the point of introduction of input signals -- 245
- Ch. XV. Determining the structural design and parameters of invariant automatic control systems -- 262

Card 5/6

L 05070-57

ACC NR:AM6018988

Ch. XVI. The effect of certain typical nonlinearities on the stability of automatic control systems -- 288

Ch. XVII. Some problems in designing self-adjusting automatic control systems -- 297

Conclusion -- 304

Appendix -- 306

Bibliography -- 322

SUB CODE: 13/ SUBM DATE: 08Jan66/ ORIG REF: 057/ OTH REF: 006/

Card

616 *pla*

LOKOLEV, P. I.

Docent, Moscow Energetics Inst. in. V. K. Volotov, -c1949-. Cand. Technical Sci.  
"Construction and Use of Complex Substitution Systems in Complex Non-Symmetrical  
Circuits," Elektrichestvo, No. 8, 1949.

SCHEFLOV, V. I.

Electric Resistance

Using non-linear resistances for increasing the stability of exciters for synchronous generators. *Elek. st.* no. 8, 1952.

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

SOKOLOV, Ni. I.

On 31 May 1946, at the Power Engineering Institute imeni Molotov, defended his dissertation on "The Elements of Calculating Short-Circuit Currents in Internal Breakdown of Asynchronous Motors". Official opponents - Doctor of Technical Sciences Professor D. A. Gorodskiy, and Candidate of Technical Sciences Docent V. L. Fabrikant.

So: Elektrichestvo, No 4, April 1947, pp 90-94 ( U-5577, 18 February 1954 )

Methods were presented for calculating certain complex cases of nonsymmetry in asynchronous motors. Cases of series and parallel nonsymmetry were investigated by means of matrical algebra using the methods of breaking down the resistances to symmetrical components and circuits of all series members through self-inductive resistances. The method was illustrated with examples of analytic calculations and of calculations on direct-current panels. The determination of reactive resistances of a motor was also investigated for individual portions of the winding. It was found possible to discover, in the curve of the ampere windings of the air gap, harmonics of a wavelength equal to the full internal diameter of the stator, as well as harmonic multiples of these.

The use of matrical algebra was demonstrated for building equivalent circuits. A method was worked out for calculating supplemental harmonics in multipolar machinery, and the effect of the rotor on the harmonics of leakage in the air gap were examined.

So: IBID

СОКОЛОВ, Н. И.

AID P - 3258

Subject : USSR/Electricity

Card 1/2 Pub. 27 - 13/25

Authors : Khachaturov, A. A., Eng., and N. I. Sokolov, Kand. Tech. Sci.,  
Moscow

Title : Automatic reclosure without controlling synchronism

Periodical : Elektrichestvo, 9, 64-67, S 1955

Abstract : The authors present the results of experiments with automatic reclosure of two parts of a power system consisting of several steam electric power stations, without controlling for synchronism. Tests were made with values of transmitted capacity ranging from zero to the maximum possible and with disconnection periods varying from 1 to 6.4 sec. (see table). In all these tests normal operating conditions were reestablished without asynchronous motion except for the most difficult conditions of 6.4 sec of interruption at the highest transmitted capacity. Synchronous machinery were returned to synchronism in the first cycle of swinging. Voltage drops were of short duration. One table, 5 diagrams and

AID P - 3258

Elektrichestvo, 9, 64-67, S 1955

Card 2/2 Pub. 27 - 13/25

oscillograms, 1 Soviet reference, 1950.

Institution : None

Submitted : N 26, 1954

SOKOLOV, N.I., kandidat tekhnicheskikh nauk.

Approximate analytic method used for calculation of transients in  
linear systems of automatic control. Study No. 75:73-102 '57.  
(Automatic control) (MLRA 10:6)  
(Transients (Electricity))



SOKOLOV, N.I., kandidat tekhnicheskikh nauk; MEDVEDEV, B.P., kandidat tekhnicheskikh nauk; UL'YANOV, S.A., kandidat tekhnicheskikh nauk.

"Operation of asynchronous electric motors" by I.A.Syromiatnikov.  
Reviewed by N.I.Sokolov, B.P.Medvedev, S.A.Ul'ianov. Elektrichestvo no.1:95-96 Ja '57. (MLRA 10:2)

1. Kafedra "Elektricheskiye stantsii" Moskovskogo Energeticheskogo instituta im.Molotova.  
(Electric motors, Induction) (Syromiatnikov, I.A.)

SOKOLOV, N.I., kandidat tekhnicheskikh nauk.

Using transfer functions and inverse transfer functions expressed  
in trigonometric form in calculating automatic control systems.

Trudy MAI no.75:26-39 '57.

(MLRA 10:6)

(Automatic control)

(Functions)

AUTHOR: SOKOLOV, N.I., cand. tech. sc. PA - 3100  
TITLE: Steady-State Stability of a Transmission System with Regulated  
Synchronous Compensator at the Sectionalizing Substations.  
(Statischeckaya ustoychivost' peredachi s reguliruyemye sinkhron-  
nymi kompensatorami na promezhutochnykh podstantsiyakh, Russian)  
PERIODICAL: Elektrichestvo, 1957, Nr 5, pp 25-30 (U.S.S.R.)  
Received: 6 / 1957 Reviewed: 7 / 1957  
ABSTRACT: The experiments carried out in 1937 by LEBEDEV concerned only an  
ideal regulation and were incomplete. In the last few years, however,  
investigations have been carried out in the Central Scientific Elec-  
trotechnical Research Laboratory of the MES. They showed that for  
the increase of electrical transmission output for further trans-  
mission it is technically useful to employ intermediate synchronous  
compensators. Their application is particularly useful if power is to  
be taken off at intermediate points of the line. The set up of the  
substations does not become more complicated through the use of  
synchronous compensators and in most cases it does not become at all  
necessary to set up additional transformers. The position of the  
synchronous compensators and their power must be defined on the  
basis of technical and scientific considerations. The synchronous  
compensators at the intermediate substations can work with idle

Card 1/2

*Cent. Sci. Res. Electrotech. Laboratory  
Min. Electr. Stations*

KALNYSHEV, M.V., kapitan, voyenny letchik-instruktor pervogo klassa;  
SOKOLOV, N.I., leytenant, voyenny letchik tret'yego klassa;  
MALENEV, V.A., leytenant, voyenny letchik tret'yego klassa;  
DROZD, M.I., leytenant, voyenny letchik tret'yego klassa

We support this project. Vest.Vozd.Fl. no.2:84-85 F '60.  
(MIRA 13:7)

(Flight training)

SOKOLOV N. I.

Some Methods of Calculating ~~(OOXX)~~ Automatic Control Systems and their Components; Leningrad, 1959, 123p.\* SOV/3397

Sokolov, N.I., Candidate of Technical Sciences. Analytical Method of Approximate Calculation of Transients in Certain Nonlinear Systems of Automatic Regulation

27

The author presents a method of calculating transients in systems of automatic regulation containing nonlinear components with a continuous static characteristic of the saturation type. The author claims that this method, compared with the methods developed by Ya. Z. Tsyapkın and B.N. Naumov, gives a much smaller error, which increases integration interval and, consequently, reduces calculation time. In order to apply the author's method, conditions permitting the separation of the nonlinear components, whose characteristics can be given in analytical or in graphical form, must be present.

Bibliography

38

Sokolov, N.I., Candidate of Technical Sciences. Approximate Grapho-Analytical Method of Determining Amplitude-Phase Characteristics From Transient Functions

The author describes the method in which transient functions were obtained experimentally

\*Trudy, vyp 112, Moscow Aviatsionnyy in-ta im. Sergo Ordzhonikidze

SOKOLOV, N I.

PHASE I BOOK EXPLOITATION

SOV/3605

Kolosov, S.P., N.P. Kolpakova, N.I. Sokolov, A.K. Ter-Akopov,  
N.M. Tishchenko, and N.P. Udalov

Rukovodstvo po proyektirovaniyu elementov i sistem avtomatiki;  
posobiye po kursovomu i diplomnomu proyektirovaniyu, vyp. 3  
(Manual on Designing Automation Systems and Components; Hand-  
book for Term and Degree Projects, No. 3) Moscow, Oborongiz,  
1959. 200 p. (Series: Moscow. Aviatsionnyy institut im.  
Sergo Ordzhonikidze) Errata slip inserted. 12,500 copies  
printed.

Sponsoring Agency: R.S.F.S.R. Ministerstvo vysshego i srednego  
spetsial'nogo obrazovaniya.

Ed. (Title page): B.N. Petrov, Corresponding Member, USSR Academy  
of Sciences, Professor; Ed. (Inside book): I.L. Yanovskiy,  
Engineer; Ed. of Publishing House: M.S. Anikina; Tech. Ed.:  
V.P. Rozhin; Managing Ed.: A.S. Zaymovskaya, Engineer.

PURPOSE: This textbook is intended for term and degree projects of students in

Card 1/4

Sokolov, N.I.

28(1) Sokolov, N.I. PHASE I BOOK EXPLOITATION SOV/2309

Asevkin, Dmitry Ivanovich, Mikhail Aleksandrovich Balashov, Sergey Petrovich Kolesov, Valentina Ivanovna Nefedova, Yevgeniy Mikheylovich Reshetnikov, Nikolay Ivanovich Sokolov, Vasily Mikheylovich Strossilov, Nikolay Mikheylovich Vashchenko, and Nikolay Petrovich Ushakov

Rukovodstvo po proyektirovaniyu elementov i sistem avtomatiki; posobyie po kursovomu proyektirovaniyu (Handbook on the Design of Automatic Control Elements and Systems; Textbook for Term Projects in Design No. 2. Moscow, Oborongiz, 1959. 247 p. (Series: Moscow. Aviat-sionnyy institut im. Sergo Ordzhonikidze) Errata slip inserted. 17,500 copies printed.

Ed. (Title page): B.N. Petrov, Corresponding Member, USSR Academy of Sciences, Editor. Ed. (Title page): V.M. Istratov, Candidate of Technical Sciences, Ed. of Publishing House: E.A. Shekhtman; Tech. Ed.: V.P. Rozhin; Managing Ed.: A.S. Zaytsovskaya.

PURPOSE: This is a textbook for students of the electromechanical departments of vtuzev working on term- and diploma design projects. Some chapters may also be useful to engineering personnel working with automatic control systems. COVERAGE: The authors discuss basic problems in the design of automatic-control system elements, such as transducers, relays, clutches and power transformers. They also describe servo systems, particularly autopilots, and present numerical examples of calculating system parameters. Typical assignments for students working on term design projects are also presented. The book was written by Otdel'nye uchitelskie staff of Moscow Aviation Institute imeni Sergo Ordzhonikidze, under the direction of Professor B.N. Petrov, Corresponding Member, USSR Academy of Sciences. Chapter I was written by D.I. Asevkin, Chapter II, Sif. Nefedov and M. A. Balashov; Chapter III, by V. P. Rozhin; Chapter IV, by N. I. Sokolov; Chapter V, by N. P. Ushakov; Chapter VI, by N. M. Reshetnikov; Chapter VII, by N. I. Sokolov; and Chapter VIII, by V. M. Istratov. The authors thank Docents V. N. Istratov, S. P. Inozemtsev and A. V. Kholshov, Candidates of Technical Sciences, for reviewing the book. There are 69 references, all Soviet (including 2 translations).

TABLE OF CONTENTS:

Card 2/4	3
Foreword	5
Ch. I. Acceleration and Vibration Transducers	27
Ch. II. Displacement Transducers	41
Ch. III. Polarized Relays	71
Ch. IV. A-C Electronic Relays	89
Ch. V. Viscous-friction Electromagnetic Clutches	101
Ch. VI. Power Transformers	139
Ch. VII. Linear Servo Systems (Problems of Synthesis)	194
Ch. VIII. Autopilots	238
Appendices	
1. Remarks Concerning the Term Assignment and Term Design Project	238
2. Typical Assignment for a Term Design Project	238

AVAILABLE: Library of Congress  
Card 4/4  
JF/Ag  
9-30-59

SEKHAJAV, H. I., VENTIKOV, V. A., GERSHENBERG, GRIGORIY R., KOSTENKO, M. P., NEEMAN, L. R.,  
BOVALOV, S. A.,

"Excitation control of synchronous machines in power systems of the Soviet Union"

report to be submitted for Intl. Conference on Large Electric Systems (CIGRE),  
16th Biennial Session, Paris, France, 15-25 Jun 60.



*Soviet, R. U.*

PHASE I BOOK EXPLOITATION SOV/4607

Moscow. Aviatsionnyy institut im. Sergo Ordzhonikidze

Nekotoryye voprosy analiza i sinteza sistem avtomaticheskogo regulirovaniya;  
sbornik statey (Problems in the Analysis and Synthesis of Automatic Control  
Systems; Collection of Articles) Moscow, Oborongiz, 1960. 74 p.  
(Series: Its: Trudy, vyp. 121) Errata slip inserted. 6,150 copies printed.

Sponsoring Agencies: Ministerstvo vysshego i srednego spetsial'nogo obrazovaniya  
RSFSR; Moskovskiy ordena Lenina aviatsionnyy institut im. Sergo Ordzhonikidze.

Ed. (Title page): B.N. Petrov, Corresponding Member, Academy of Sciences USSR,  
Doctor of Technical Sciences, Professor; Managing Ed.: A.S. Zaymovskaya,  
Engineer; Ed. (Inside book): V.M. Tokar'; Tech. Ed.: I.M. Zudakin.

PURPOSE: This collection of five articles is intended for scientific, engineer-  
ing and technical personnel at plants, design offices and scientific research  
institutes, and for teachers and students of advanced courses at schools of  
higher education.

Card 1/3

## Problems in the Analysis and Synthesis (Cont.)

SOV/4607

COVERAGE: The articles discuss procedures for synthesizing linear automatic control systems, analyzing free oscillations of linear systems with variable parameters, calculating the design parameters of a ferroresonant circuit in order to obtain a relay action, and investigating the stability of linear and some nonlinear systems by using the energy method. The method for the synthesizing of systems makes it possible to determine the desired amplification factor of the system in the open condition, and the layout and parameters of parallel compensating devices and their connection, so as to satisfy the technical requirements imposed on the characteristics of the transient process. Some of the articles in the collection develop existing methods, while others present new methods for investigating automatic control systems with variable parameters. The methods presented may be used for the solution of a number of problems in the theory of oscillations of linear and nonlinear systems. Special consideration is given to the application of methods for the construction of approximate representations of the general solution of the equation of free oscillations. No personalities are mentioned. There are 16 references, all Soviet.

## TABLE OF CONTENTS:

Foreword

3

Sokolov, N.I. [Candidate of Technical Sciences] Some Problems in the Selection of Design Configurations and Parameters of Aircraft Control Systems 5  
Card 2/3

SOEKLOV, N.I., kand.tekhn.nauk, dotsent

Variable-polarity excitation of synchronous reactive power compensators for operation which involves consumption of reactive power. Elektrichestvo no.5:28-31 My '60.

(MIRA 13:9)

1. Moskovskiy energeticheskiy institut.  
(Electric machinery, Synchronous)

VELIKOV, V.A., doktor tekhn.nauk; GERSENBERG, G.R., kand.tekhn.nauk;  
KOSTENKO, M.P., akademik; NEYMAN, L.R.; SOVALOV, S.A., kand.tekhn.  
nauk; SOKOLOV, N.I., kand.tekh.nauk

Strong regulation in electric systems. Elek.sta. 31 no.6:43-49  
Je '60. (MIRA 13:7)

1. AN SSSR (for Kostenko). 2. Chlen-korrespondent AN SSSR (for  
Neyman).

(Electric power distribution)  
(Voltage regulators)

SOKOLOV, N.I., kand.tekhn.nauk

Questions about the selection of structural networks and parameters  
of controllers of aviation equipment. Trudy MAI no. 121:5-30 '60.

(MIRA 13:10)

(Automatic control) (Aeroplanes--Equipment and supplies)

BALASHOV, M.A.; VORONKOV, B.S.; YELAGIN, Ye.B.; KISELEV, L.N.; KOLOSOV,  
S.P.; LEONT'YEVA, V.P.; NEFEDOVA, V.I.; STROMILOV, V.M.;  
SOKOLOV, N.I.; TISHCHENKO, N.M.; UDALOV, N.P.; PETROV, B.N.,  
akademik, red.; GRIGORASH, K.I., red. izd-va; ROZHIN, V.P.,  
tekh. red.

[Handbook on the design of components and systems of automatic control; a manual for the preparation of course and diploma projects] Rukovodstvo po proektirovaniu elementov i sistem avtomatiki; posobie po kursovomu i diplomnomu proektirovaniu [By] M.A.Balashov i dr. Pod red. B.N.Petrova. Moskva, Gos. nauchno-tekh. izd-vo Oborongiz. No.4. 1961. 311 p.

(MIRA 15:3)

1. Moscow. Aviatsionnyy institut imeni Sergo Ordzhonikidze.  
(Automatic control) (Electronics)

SOKOLOV, N.I., kand.tekhn.nauk, dotsent (Moskva); GUREVICH, Yu.Ye., inzh.  
(Moskva); KHVOSHCHINSKAYA, Z.G., inzh. (Moskva)

Use of analog computers for simulating a system with multiple  
generators. Elektrichestvo no.5:1-8 My '61. (MIRA 14:9)  
(Electric network analyzers)  
(Electric power distribution)

1618000 (1031, 1132, 1329)

32060  
S/024/61/000/006/008/019  
E140/E335

AUTHOR Sokolov, N.I (Moscow)

TITLE On the synthesis of higher-order astatic systems

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye  
tekhnikeskikh nauk. Energetika i avtomatika  
no. 6, 1961, 60 - 66

TEXT At the present time partially invariant dynamic systems ( $\lambda$ -order astaticism,  $\lambda \geq 2$ ) are constructed in the form of "double-channel" systems, although it has been demonstrated that such systems may be constructed in the form of "single-channel"  $\lambda$ -order astatic dynamic systems with branches composed of parallel-connected integrating and amplifying branches. These circuits are very difficult to design and the present article gives a method for the synthesis of single-channel  $\lambda$ -order astatic control systems, permitting the required results to be obtained by means of ordinary internal feedbacks, easily designed and realized. The starting point of the method is an uncorrected control system, consisting of the functionally necessary elements (sensitive element, amplifier, controller).

Card 1/3



32060

S/024/61/000/006/003/019

E140/E555

On the synthesis of

in which it is necessary to realize  $\lambda$ -order astatism and transient duration not exceeding a specified time limit. The correction of the system is to be realized by the introduction of integral feedbacks. The initial system has a transfer function with an  $n$ th-degree denominator. The  $\lambda$ -order astatism is obtained from the technical conditions by a transfer function with numerator of not less than  $(\lambda-1)$ st degree. To introduce such a numerator into the uncorrected system it is also necessary to increase the degree of the denominator by the same amount, i.e. to increase the degree to  $n + \lambda - 1$ . The distribution of poles in the system is adopted according to the condition of stability. This fixes the values of the coefficients in the corrected transfer function. The normalized transient response to a unit function input is then examined to see if the transient duration is satisfied. If necessary, the time scale can be corrected. The transfer function of the corrective circuit is found by algebraic manipulation and the means for its physical realization are discussed. The transfer function is decomposed into partial fractions to permit its realization as a number of

case 2/7

32060

S/024/61/000/006/008/019

E140/E335

On the synthesis of . . . .

simple circuits. A numerical example is given for obtaining fourth-order astatism.

There are 3 figures and 3 Soviet-bloc references.

SUBMITTED: July 15, 1961

X

Card 3/3

33193

S/535/61/000/139/005/009  
E140/E435

10 1240

195

AUTHOR: Sokolov, N.I., Candidate of Technical Sciences

TITLE: Determination of the transfer function of an automatic control system satisfying given requirements on the stabilization regime

SOURCE: Moscow. Aviatsionnyy institut. Trudy. no.139. 1961.  
Voprosy avtomaticheskogo regulirovaniya  
dvizhushchikhaya ob"yektov. 108-118

TEXT: If we distinguish between the structures of automatic control systems in the "control" regime, where the output variable is to follow the variations of an input variable, and the "stabilization" regime, where the output variable is to be stabilized [Abstractor's note: With respect to a fixed reference?] against the influence of external perturbations, certain differences in the treatment of the two cases are possible. The author introduces for the latter case an equivalent control signal which, for a step function of the perturbation he approximates in the form of a second degree function. The extension to arbitrary perturbations is accomplished by means of

Card 1/2

X

Determination of the transfer ...

33193

S/535/61/000/139/005/009

E140/E435

unit  $\Delta$ -functions. The treatment is limited to linear systems.  
There are 10 figures and 3 Soviet-bloc references.

Card 2/2

X

SOKOLOV, N.I., kand.tekhn.nauk

Operational stability of asynchronous motors with significant  
external resistance and parallel connected static condensers.

Elek.sta. 32 no.6:43-47 Je '61.

(MIRA 14:8)

(Electric motors, Induction)

(Electric power distribution)

SOKOLOV, Nikolay Ivanovich, inzh.; MASHKINA, A., red.; POKHLEBKINA, M.,  
tekhn. red.

[Service station]Stantsia tekhnicheskogo obsluzhivaniia. Mo-  
skva, Mosk. rabochii, 1962. 123 p. (MIRA 15:12)

1. Upravlyayushchiy Stupinskim oporno-pokazatel'nym otdeleniyem  
"Sel'khoztekhnika" (for Sokolov).  
(Stupino (Moscow Province)--Service stations)

SOKOLOV, N.I., VENIKOV, V.A., GRJZDEV, I.A., KUCHUMOV, A. LUGINSKIY, YA.N.,

"Analogue computer application for analysis of transient processes  
in electrical systems."

Report to be submitted for the 19th Biennial Session, Intl. Conf. on  
Large Electric Systems(CIGRE), Paris, France, 16-26 May '62.

VENIKOV, Moscow Power Engineering Inst. im V.M. Molotov  
SOKOLOV, " " " " " "  
GRJZDEV, Leningrad Polytechnical Inst. im M.I. Kalinin  
KUCHUMOV, none given  
LUGINSKIY, All-Union Scientific Research Inst. Electro Power Engineering

SOKOLOV, N.I., kand. tekhn. nauk, dotsent; KIRKIN, B.I., inzh.

Determination of the frequency characteristics of synchronous machines. Elektrichestvo no.1:29-35 Ja '62. (MIRA 14:12)

1. Moskovskiy energeticheskiy institut.  
(Electric machinery, Synchronous)



35316

S/103/62/023/002/002/015  
D230/D301

16.8000 (1031,1132,11329)

AUTHOR: Sokolov, N.I. (Moscow)

TITLE: Synthesis of automatic control systems with random actions. I

PERIODICAL: Avtomatika i telemekhanika, v. 23, no. 2, 1962,  
138 - 147

TEXT: The synthesis of linear automatic control systems (a.c.s.) is discussed as follows: 1) On the basis of functionally indispensable elements without which the indirect-action operation is impossible; the structural design is proposed and the orders of polynomials of both the numerator and the denominator for the system transfer function are formulated. 2) The transfer function of a.c.s. is determined on the basis of operational requirements, order of astaticism, minimum root-mean error, permissible over-control and duration of transient processes. The orders of the polynomials of the \*numerator and the denominator of the transfer function for the corrected a.c.s. depend equally on the orders of polynomials of both

X

Card 1/3

\*numerator (chislitel')

S/103/62/023/002/002/015  
D230/D301

Synthesis of automatic control ...

the numerator and the denominator for the transfer function of the selected uncorrected system and on the form of the transfer function, describing the compensating elements. The orders of polynomials of the \*numerator and the denominator of transfer function for the uncorrected a.c.s. cannot be changed arbitrarily. Further, the orders and the polynomial coefficients of both the \*numerator and the denominator of the transfer function for the compensating elements can be varied within wide limits; as a function of this, the order of polynomials of both the \*numerator and the denominator of the transfer function for the corrected a.c.s. will vary within wide limits. In order to obtain the desired transfer function of the a.c.s. it is first necessary to formulate the normalized transfer function; this function has known laws of distribution of zeros and poles, with the least pole equal to unity. The order values of the polynomials of the initial normalized transfer function is made equal to those of the transfer function for the corrected system. The main difficulty in determining the desired transfer function is the setting-up of the functional relation between the selected criterion for the system and the time-scale coefficient for various

X

Card 2/3

\* numerator (chislitel')

Synthesis of automatic control ...

S/103/62/023/002/002/015  
D230/D301

forms of input signal and noise. The transfer function of the a.c.s. for random stationary input signals is determined. The formula for the time scale coefficient is deduced and its proof given in the appendix. There are 3 Soviet-bloc references.

SUBMITTED: May 27, 1961

X

Card 3/3

31451

S/103/62/023/003/006/016  
D201/D301

16.8000 (1031, 1132, 1329)

AUTHOR: Sokolov, N.I. (Moscow)

TITLE: Synthesis of automatic servo-systems in the presence of random disturbances II. Determining the required transfer function of an automatic servo-system in the presence of random stationary disturbance

PERIODICAL: Avtomatika i telemekhanika, v. 23, no. 3, 1962, 331 - 341

TEXT: In the second part of his work the author suggests a method of determining the desired transfer function of the follow-up system from the condition of satisfying the permissible r.m.s. error, in the case when the measuring element is acted upon by a random stationary disturbance. Such a system must filter out this disturbance with a permissible r.m.s. error  $\epsilon_1$ . Taking into account the degree of polynomials of the numerator and denominator of the transfer function of the non-corrected follow-up system and the requirements as to the order of the astaticism of the system - an initial Card 4/2

Synthesis of automatic servo- ...

S/103/62/023/003/006/016  
D201/D301

normalized transfer function  $K_n(p)$  is chosen. It is necessary to determine the required transfer function satisfying the set requirements. When a disturbance acts at the system input and it is required that the system be insensitive to it, it should be as inert as possible. If this is the case, the duration of the correlation function  $R_n(i\omega_1)$  is much shorter than that of the autocorrelation function  $k_x(i\omega_1)$ . The graph of the latter shows that it may be approximated, over a certain range, wider than the correlation function of noise, to a straight line. In evaluating the r.m.s. error it is, therefore, enough to know this section of curve  $k_x(\tau)$  which is limited by time  $0 - \tau_1/$ . By using this straight line approximation and using an approximate expression for determining a new time scale factor  $z$ , the expression for the required transfer function  $K_r$  becomes  $K_r = K_n(zp)$ . It is shown that the error, introduced in linearizing the graph of the correlation function of the useful signal, can be always determined. There are 5 tables, 6 figures and 3 references: 2 Soviet-bloc and 1 non-Soviet-bloc.

SUBMITTED: May 27, 1961

Card 2/2

45746

S/194/62/000/012/013/101  
D201/D308

9.7200

AUTHORS: Sokolov, N. I. and Yakushov, V. M.

TITLE: Application of continuous analog computers to static  
d.c. and a.c. simulator computations

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika,  
no. 12, 1962, 65-66, abstract 12-1-130 ya (Dokl. na  
4-y Mezhvuz. Konferentsii po primeneniyu fiz. i matem.  
modelirovaniya v razlichn. otraslyakh tekhn. Sb. 2.  
M., 1962, 25-38).

TEXT: It is pointed out that the use of d.c. and a.c. simulators  
in conjunction with continuous analogs results in quicker calcu-  
lations and increases the number of problems which are solved. It  
is shown that, in the calculation of s.c. currents due to several  
simultaneous faults or s.c. currents in systems with disconnected  
phase, the components of continuous analogs may be used for elec-  
trical simulation of 'ideal' transformers or for automatic setting  
of operating conditions which satisfy the limiting conditions at

Card 1/2

Application of continuous ...

S/194/62/000/012/013/101  
D201/D308

the damaged point. The possibility of using these components for the reproduction of nonlinear static load characteristics is investigated. It is also shown that it is possible to take into account the real transformation coefficient when working with static a.c. simulator and to take into account the mutual inductance between the lines in null-to-sequence circuits, when the simulators are coupled with analogs. 2 references. [Abstracter's note: Complete translation.]

Card 2/2

SOKOLOV, N.I., doktor tekhn.nauk (Moskva); GUREVICH, Yu.Ye., inzh.  
(Moskva); KHVOSHCHINSKAYA, Z.G., inzh. (Moskva)

Use of analog computers in studying the parallel operation of  
large turbogenerators. Elektrichestvo no.10:5-13 0 '63.  
(MIRA 16:11)



SOKOLOV, N.I., kand.tekhn.nauk

Choice of coordinate systems and use of equivalent circuits in  
mathematical modeling of the transients of synchronous and asynchronous  
machines. Trudy VNIIE no.15:47-72 '63. (MIRA 16:12)

SKOLOV, Nikolay Ivanovich; SOBOLEV, O.K., red.; BUL'DYAYEV, N.A.,  
tekhn. red.

[Synthesis of linear automatic control systems with random  
action] Sintez lineinykh sistem avtomaticheskogo reguliro-  
vaniia pri sluchainykh vozdeistviiakh. Moskva, Izd-vo  
"Energiia," 1964. 127 p. (Biblioteka po avtomatike, no.93)  
(MIRA 17:3)

SOVALOV, S.A., kand. tekhn. nauk; SOKOLOV, N.I., doktor tekhn. nauk;  
SOKOLOV, N.N., inzh.

Carrying capacity of electric power transmission lines from  
thermal electric power plants. Elek. sta. 35 no.2:73-79  
F '64. (MIRA 17:6)

1. Ob"yedinennoye dispetcherskoye upravleniye Yedinoy ener-  
geticheskoy sistemy SSSR (for Sovalov).
2. Vsesoyuznyy nauchno -  
issledovatel'skiy institut elektroenergetiki (for N.I. Sokolov).
3. Energoset'proyekt (for N.N. Sokolov).

GRUZDEV, Igor Aleksandrovich; KADOMSKAYA, Kira Panteleymonovna;  
KECHINOV, Leonid Aleksandrovich; LUGINSKIY, Yakov  
Natanovich; PORTNOY, Marlen Gdalevich; SOKOLOV, Nikolay  
Ivanovich; NIKOLAYEVA, M.I., red.

[Use of analog computers in electric power systems;  
methods for studying transient processes] Primenenie  
analogovykh vychislitel'nykh mashin v energeticheskikh  
sistemakh; metody issledovani perekhodnykh protsessov.  
[By] I.A.Gruzdev i dr. Moskva, Energiia, 1964. 407 p.  
(MIRA 18:2)

L 27378-65 EWT(d)/EWP(1) Pg-4/Pk-4/Pl-4/Po-4/Pq-4/Pas-2 IJP(c) EC

ACCESSION NR AM4041631

BOOK EXPLOITATION

S/ 32 BT1

Sokolov, Nikolay Ivanovich

Synthesis of linear automatic control systems under random action (Sintez lineynykh sistem avtomaticheskogo regulirovaniya pri sluchaynykh vozdeystviyakh), Moscow, Izd-vo "Energiya", 1964, 127 p. illus., biblio. 15,000 copies printed. Series note: Biblioteka po avtomatike, vyp. 93

TOPIC TAGS: linear automatic control system, random stationary signal

PURPOSE AND COVERAGE: The book considers the problem of synthesizing linear automatic control systems under the influences of random stationary signals and certain assigned time functions. Two stages of synthesis are assigned: determining the desired transmission function of the system from the condition of optimal saturation of technical regimes and determining the structure of the circuit and parameters of technically feasible systems of automatic control with respect to the transmission function. The book is intended for engineers, graduate students and advanced students concerned with automatic control.

TABLE OF CONTENTS [abridged]:

Card 1/3

L 27378-65

ACCESSION NR AM1041631

Foreword -- 3

Ch. I. Processing a random stationary signal with a linear automatic control system -- 7

Ch. II. Some problems of the synthesis of automatic control systems -- 18

Ch. III. Determining the desired transmission function of a system with assigned astatism under the influence of a random stationary signal -- 30

Ch. IIII. Determining the desired transmission function of an automatic control system with assigned astatism under the influence of random stationary interference -- 49

Ch. V. Determining the desired transmission function of a system with assigned astatism with random stationary interferences and certain assigned signals -- 55

Ch. VI. Selecting the distribution law of zeros and pluses of a standard transmission function with various types of interferences at the input of the system -- 85

Ch. VII. Determining the desired transmission function of an automatic control system with a finite memory with various types of interferences at the input of the system -- 106

Ch. VIII. Some problems of determining the structure and parameters of a corrected linear automatic control system from the desired transmission function -- 111

Card 2/3

L 27378-65

ACCESSION NR AM4041631

Bibliography -- 127

SUBMITTED: 21Dec63

SUB CODE: DP, EC

NO REF SV: 018

OTHER: 005

Card 3/3

I. 30106-65 EWT(d)/EWP(1) Po-4/Pq-4/Pg-4/Pk-4/Pl-4 IJP(c) GS/BC

ACCESSION NR: AT5004118

S/0000/64/000/000/0169/0187

50  
B+1

AUTHOR: Sokolov, N. I.

TITLE: Selection of a block diagram and the parameters of a combined control system

SOURCE: Vsesoyuznoye soveshchaniye po teorii invariantnosti i yeye 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, 169-187

TOPIC TAGS: invariance theory, cybernetics, automatic control system 9

ABSTRACT: This article determines a method of selecting a block diagram and the parameters of a combined control system. The author commences by selecting a block diagram of an uncorrected automatic control system (ACS) consisting of functionally necessary elements. He then determines the block diagram of an uncorrected linear ACS consisting of two control channels - a basic and auxiliary. Then the initial normalized transfer functions of an invariant ACS are determined. Three cases are examined; in each case, the useful signal  $x$  in  $(t)$  acts on the input of the projected ACS, and the disturbing signal  $f(t)$  acts on the control object. The

Card 1/2



L 30106-65

ACCESSION NR: AT5004118

transfer function is then determined when the correcting device of the basic control channel of an ACS does not include the inlet point of the perturbing signals; when the first parallel correcting device does not include the inlet point of the perturbing signals and the second includes it; and when the first parallel correcting device does not include the inlet point of the perturbing signals and the second does. The article concludes with a determination of the parameters and diagram of the correcting devices and amplification factor of the basic control channel, and with a determination of the diagram and parameters of the auxiliary channels. Orig. art. has: 3 figures and 45 formulas.

ASSOCIATION: None

SUBMITTED: 24 Sep 64

ENCL: 00

SUB CODE: DP, IE

NO REF SOV: 006

OTHER: 000

Card 2/2

L 27307-65 EWT(m)/EPA(w)-2/EWA(m)-2 Pab-10/Pt-10 IJP(c)  
ACCESSION NR: AP5002140 S/0120/64/000/006/0028/0029

3  
40  
35  
B

AUTHOR: Antonov, A. V.; Vasil'yev, P. I.; Venikov, N. I.; Kalinin, S. P.;  
Sokolov, N. I.; Khaldin, N. N.; Khoroshavin, B. I.; Chumakov, N. I.

TITLE: Changing the IAE cyclotron into a controllable-ion-energy mode of operation

SOURCE: Pribory i tekhnika eksperimenta, no. 6, 1964, 28-29

TOPIC TAGS: cyclotron, IAE cyclotron

ABSTRACT: The adoption of rapid energy control in the 1.5-meter IAE cyclotron, with preservation of a good ( $\pm 0.3-0.4\%$ ) monoenergetic characteristic and short duration (2-4 nsec) of accelerated-ion clusters, was predicated upon the following changes introduced into the cyclotron: (1) Correction of magnetic field by the currents in additional windings within 5-14 koe; (2) Provision of a dee-type slit ion optical device suitable for the entire range of accelerated ions; (3) Replacing

Card 1/2

L 27307-65

ACCESSION NR: AP5002140

the VCh-200 h-f oscillator by a GU-300 which can be tuned without additional neutralization within 8--13 Mc; (4) Introduction of a remote control of dees position; (5) Correction of optical properties of the system guiding the output beam. As a result of the above measures, the type and energy of particles can be changed in less than an hour's time; particulars are tabulated. Orig. art. has: 1 figure and 2 tables.

ASSOCIATION: Institut atomnoy energii (Institute of Atomic Energy)

SUBMITTED: 20Nov63

ENCL: 00

SUB CODE: NP

NO REF SOV: 005

OTHER: 000

Card 2/2

L 2960-66 EWT(d)/EMP(k)/EMP(1)  
ACCESSION NR: AP5026355

UR/0105/64/000/009/0091/0091

AUTHOR: Bel'kind, L. D.; Venikov, V. A.; Glazunov, A. A.; Grudinskiy, P. G.;  
Zhadin, K. P.; Zhebrovskiy, S. P.; Lapitskiy, V. I.; Neklyudov, B. K.; Pavlenko, V. A.  
Razevig, D. V.; Rossiyeviskiy, G. I.; Safonov, A. P.; Sokolov, N. I.; Soldatkina, L. A.  
Tayts, A. A.; Ul'yanov, S. A.; Fodosoyev, A. M.; Khoyster, V. A.

TITLE: Professor B. A. Teleshev on this 70th birthday and the 45th anniversary  
of his engineering, scientific, and teaching activity

SOURCE: Elektrichestvo, no. 9, 1964, 91

TOPIC TAGS: electric engineering personnel

ABSTRACT: Boris Arkad'yevich Teleshev was seventy years old 12 March 1964.  
He graduated from the electromechanical department of the Petrograd Poly-  
technic Institute in 1917 and gained the title Electrical Engineer in 1920.  
In the Union of Electric Power Stations of the Moskovskiy rayon, Teleshev  
was one of the founders of the first dispatcher service of the Moscow  
Power System, the chief dispatcher of this system, the manager of the high-  
voltage networks of the Moscow Union, the chief engineer in construction of  
the Moscow high-voltage network and of the high-voltage networks of the

Card 1/3