SOV/124-58-7-7500

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 7, p 26 (USSR)

AUTHORS: Vedrov, V.S., Romanov, L.G., Surina, V.N.

TITLE: The Aircraft as an Object of Control (Analog Circuits for the
            Equations of Perturbed Aircraft Motion) [Samolet kak ob"yekt
            regulirovaniya (strukturnyye skhemy uravneniy vozmushchen-
            nogo dvizheniya samoleta)]

PERIODICAL: Tr. M-va aviats. prom-sti SSSR, 1957, Nr 74, 44 pages ill.

ABSTRACT: The methods of the theory of automatic control are used to
            investigate an instance of perturbed aircraft motion that is not
            far removed from the aircraft's normal steady-state motion
            prior to perturbation. Linearized equations for the perturbed
            motion are examined which are in fact systems of linearized
            fourth-order equations with constant coefficients. In addition,
            an investigation is made of nonhomogeneous equations the
            right-hand sides of which allow for possible small deflections
            of wing and tail control surfaces caused by the pilot. The flight
            of an aircraft without an automatic pilot is analyzed. The paper,
            which consists of two sections, deals in the first section with
Card 1/3   the longitudinal perturbations of an aircraft's motion, in the

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The Aircraft as an Object of Control (cont.)

second section with the lateral perturbations. Each section is comprised of three paragraphs. The first paragraph of each section shows how analog circuits for the equations of a perturbed motion (longitudinal or lateral) can be set up. It turns out that some of the links of the analog circuit form a closed "stability contour" (i.e., a contour of stabilization), whereas the remaining links constitute "branches" of the outputs of the various parameters of the motion, or inputs containing the control-surface deflections ("control links"). The analog circuit for the longitudinal motion is so set up that its stability contour includes the variations in speed and angle of attack. The "branches" include the variations in the pitch attitude, the flight altitude, the slope of the flight path, and elevator deflection. In the analog circuit for the lateral motion the stability contour includes the variations in the angle of bank and yawing velocity. One of the "branches" represents the output of the sideslip angle. The second paragraph of either section contains a brief analysis of the characteristics of the individual links. An account is given of the amplitude-frequency and phase-frequency characteristics of the links making up the stabilization contour. They are set up to simulate aerodynamic coefficients that characterize modern subsonic jet aircraft. The relationship of the characteristics of the links to the flying speed and flight altitude is then analyzed. In each of the third paragraphs transfer functions are evolved for the Card 2/3

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The Aircraft as an Object of Control (cont.)

control of an aircraft with tail control surfaces and ailerons. To simplify
analysis of the transfer functions and to enhance clarity, the authors at the
end of each section give approximate simplified theories of the transfer
functions. These theories are based on the fact that in both the longitudinal
and the lateral motion the frequencies of the individual links are widely sep-
arated from one another on the frequency scale. In the first section a theory
is offered for the short-period high-frequency perturbed motion, followed by
a theory of the long-period perturbed motion. In the second section, trans-
fer functions are obtained for three distinct types of perturbed motion, con-
sidered separately: a slow spiral motion, a rapid oscillatory motion (with
the use of the rudder control only), and a fast rolling motion (with control by
the ailerons only).

L.V. Klimenko

1. Aircraft--Control systems   2. Airplanes--Performance   3. Mathematics--Applications
4. Control systems--Theory

Card 3/3

PONOMAREV, V.D.; ROMANOV, L.G.

Interaction of sodium-calcium hydrosilicate with high-modulus
aluminate solutions. Izv.AN Kazakh.SSR.Ser.met., obog.i ogneup.
no.2:43-52 '61.   (MIRA 14:8)
    (Sodium calcium silicate)   (Aluminates)

ROMANOV, L.G.; PONOMAREV, V.D.

Effect of protective additions on the stability of aluminate solutions in the presence of solid phases. Izv. AN Kazakh. SSR. Ser. met., obog. i ogneup. no.3:59-65 '61.   (MIRA 15:1)
(Aluminates) (Hydrometallurgy)

NI, L.P.; ROMANOV, L.G.; OSIPOVA, Ye.F.; PONOMAREV, V.D.

Interaction of sodium hydroalumosilicates with alkali solutions.
Trudy Inst. met. i obog. AN Kazakh. SSR 9:90-96 '64.
(MIRA 17:9)

NI, L.P.; ROMANOV, L.G.; PROKHOROV, S.T.; PONOMAREV, V.D.

Alkaline hydroaluminosilicates formed by desilication of aluminate
solutions. Zhur. prikl. khim. 37 no.8:1671-1676 Ag '64.
(MIRA 17:11)

ROMANOV, L.G.; OSIFOVA, Ye.F.; NURLYBAYEV, A.N.

Leaching of epileucitic porphyry at pressures of less than 40 at. Trudy Inst.met.i obog. AN Kazakh.SSR 11:10-14 '64.
(MIRA 18:4)

NI, L.P.; ROMANOV, L.G.; KHALYAPINA, O.B.; PONOMAREV, V.D.

Investigating high temperature sodium aluminosilicate hydrates.
Trudy Inst.met.i obog. AN Kazakh.SSR 11:15-21 '64.

(MIRA 18:4)

NI, I.P.; BERLIN, I.G.; OSIPOVA, Ye.F.; PONOMAREV, V.D.

Kinetics of the interaction of the unstable form of sodium
aluminosilicate hydrate with alkali and aluminate solutions.
Izv. vys. ucheb. zav.; tsvet. met. 8 no.3:52-57 '65.
(MIRA 18:9)

1. Institut metallurgii i obogashcheniya AN Kazakhskoy SSR.
Redkomendovana kafedroy legkikh i redkikh metallov Kazakhskogo
politekhnicheskogo instituta.

L 8138-66   EWT(m)/EWP(j)/T   RM

ACC NR: AP5025027   SOURCE CODE: UR/0286/65/000/016/0082/0082

AUTHORS: Romanov, L. M.; Semenov, N. I.; Yenikolopov, N. S.; Rakova, G. V.

ORG: none

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 16, 1965, 82

TOPIC TAGS: polymer, polymerization, polyformaldehyde, Friedel Kraft catalyst

ABSTRACT: This Author Certificate presents a method for obtaining high-molecular weight polyformaldehyde by the polymerization of trioxane in an inert organic solvent in the presence of a Friedel-Kraft catalyst. To increase the polymerization rate, the process is carried out in the presence of polar organic substances having high dielectric constants (halogen derivatives of hydrocarbons, nitriles, and nitro-compounds of aliphatic and aromatic hydrocarbons).

SUB CODE: OC/ SUBM DATE: 30Jan62

Card 1/1   UDC: 678.644'141

ROMANOV, L. M.

USSR.

Compounds containing a three-membered oxide ring.
IV. Reaction of hydrogen sulfide with oxides of 1-methyl-1-
ethylethylene and 1-methyl-1-phenylethylene. V. P.
Martynov and L. M. Romanov (A. A. Zhdanov State Univ.,
Leningrad). *Sbornik. State. Obshchei Khim.* 2, 070-5
(1953); cf. *C.A.* 49, 097h.—The crude chlorohydrin from
ClCH$_2$Ac and PhMgBr yielded with powd. KOH 09% α-
methylstyrene oxide (I), b$_4$ 74-5°. This (15 g.) was added
over 2 hrs. to 10 g. Ba(OH)$_2$ in 75 ml. 75% EtOH which
had been satd. with H$_2$S, the mixt. treated 1.5 hrs. with
H$_2$S, the Ba removed with CO$_2$, the ppt. washed with
EtOH, the combined filtrate freed of EtOH, and the org.
layer distd., giving 37% *MePhC(OH)CH$_2$SH*, b$_7$ 118-19°,
d$_{20}$ 1.1108; n$^{20}_D$ 1.567, which with HgO yielded the *Hg
mercaptide*, m. 99-100° (from EtOH). The thioglycol
(5 g.) refluxed 3-4 hrs. with 30-40 g. Raney Ni in abs.
EtOH gave *Me$_2$PhCOH*, m. 35-7°. I (10 g.) added to a
closed system contg. 10 g. Ba(OH)$_2$ in 50 ml. 75% EtOH
with H$_2$S passed in at the rate at which it was consumed (no
excess) gave an unstated yield of (*MePhC(OH)CH$_2$)$_2$S* (II),
m. 98-9°. To 0.01 mole I and 0.01 mole MePhC(OH)-
CH$_2$SH was added 0.7 g. EtONa in EtOH (exothermic reac-
tion) and the mixt. refluxed 10 hrs., yielding II. 2-Ethyl-
1,2-propylene oxide (III), b. 81-3° (15 g.) was slowly added
to 10 g. Ba(OH)$_2$ in 50% EtOH previously satd. with H$_2$S,
and the gas stream maintained 2.5 hrs. after the addn.; the
usual working-up yielded 30% *MeEtC(OH)CH$_2$SH* (IV),
b$_{10}$ 70-8°, d$_{20}$ 1.0075; n$^{20}_D$ 1.481; when the addn. of III was
made in 40 min. instead of 1.5 hrs., the mixt. yielded but a
trace of IV, the main product being (*MeEtC(OH)CH$_2$)$_2$S*,
b$_1$ 158-60°, d$_{20}$ 1.0200, n$^{20}_D$ 1.492.   Cf. Smith and Sjöberg,
C.A. 30, 4465°.   G. M. Kosolapoff

RO...KOV, I. ..

"Studying the Reactions of Free Radicals in Model Systems in Connection With the Polymerization Process." Cand Chem Sci, Inst of High-Molecular Compounds, Leningrad, 1954. (KL, No 1, Jan 55)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational

SO: Sum. No 5..., 29 Jul 55

Romanov, L. M.

USSR/Chemistry - Reaction processes

Card 1/1   Pub. 151 - 14/37

Authors   : Dolgoplosk, B. A.; Yerusalimskiy, B. L.; Krol', V. A.; and Romanov, L. M.

Title   : Reaction of free radical in solutions. Part 2.- Relative activity of free radicals during reaction with isopropyl benzene, cyclohexene and polymers

Periodical   : Zhur. ob. khim. 24/10, 1775-1782, Oct. 1954

Abstract   : Data regarding the relative activity of numerous free radicals, which are distinguished by their entirely different reactivity characteristics, were obtained by studying the products of thermal decomposition of diazoamino compounds in solution. A series of free radical activities was established in the reaction of separation of the H-atom from various compounds. The reason why allyl, crotyl, benzyl and tertiary-butyl free radicals do not react with isopropyl benzene, is discussed. The effect of low-active free radicals (allyl, benzyl and anil) on the structure-formation of natural rubber, is explained. Twelve references: 4-USA; 5-German; 2-USSR and 1-English (1895-1953). Tables.

Institution : Acad. of Sc. USSR, All-Union Scientific Research Institute of Synthetic Rubber and Institute of High Molecular Compounds

Submitted   : March 2, 1954

ROMANOV, L. M.

Reactivity of free radicals and the role of the polar factor. B. A. Dolgoplosk, B. L. Erusalimskii, V. A. Krol, and L. M. Romanov. *Voprosy Khim. Kinetiki, Kataliza i Reak-tsionnoi Sposobnosti, Akad. Nauk S.S.S.R., Oldel. Khim. Nauk* 1955, 810-20.—The yields of RH and RR in radical reactions of $RN:NNHPh$ in iso-PrPh or cyclohexene indi-cate the order of descending radical reactivity as Me, Ph-C_6H_4, Et, Pr, Bu, Me_3CCN, iso-Pr, *sec*-Bu, allyl, $MeCH:$-$CHCH_3$, $PhCH_2$, and Me_3C. A similar series is obtained in the yield of final products in reactions of these radicals with benzene solns. of rubber, or in thermal treatment of rubber in vulcanization. The following yields of tridimen-sional vulcanizate were obtained with: dibiphenyltriazene 76-90%; diazoaminobenzene 65-84%; methylphenyltri-azene 13-44%; isopropylbenzene hydroperoxide 18-28%; Bz_2O_2 11-60%. Benzylphenyltriazene, allylphenyltriazene, and butylphenyltriazene gave 0%.   G. M. Kosolapoff

Romanov, L.M.

M.A POUT2
dcopies

Free-radical reactions in solution. Polyisobutylene destruction by free-radical action. L. M. Romanov, B. A. Dolgoplosk, and B. L. Erusalimskii. Doklady Akad. Nauk S.S.S.R. 105, 288-300(1955); cf. C.A. 49, 12339c.—The reaction of C—C bond rupture was studied with the free-radical interaction with polyisobutylene as an example. For the source of free radicals were used methyl-, ethyl-, propyl-, isopropyl-, and tert-butyltriazenes and the dinitrile of azobutyric acid, which decompose by heating with the formation of the corresponding free radicals. During the reaction the starting viscosity of polyisobutylene solution was decreased by free radicals in the following order: Me > Et > Pr > tert-Bu.   W. M. Sternberg

63. **Formation of Free Radicals by the Decomposition of Triazenes Investigated**

"The Reactions of Free Radicals in Solution; Thermal Decomposition of Triazenes in Different Media," by L. M. Romanov, B. A. Dolgoplosk, and B. L. Yerusalimskiy, Institute of High-Molecular Compounds, Academy of Sciences USSR, Doklady Akademii Nauk SSSR, Vol 112, No 4, 1 Feb 57, pp 703-705

It is pointed out that a considerable amount of research is being done at present on the kinetics of the decomposition of various compounds which are capable of serving as sources of free radicals, and that in this work the formation of radicals from organic peroxides and hydroperoxides receives particular attention (several US references to research of this type are given). Work by Kh. S. Bagdasar'yan and R. I. Milyutinskaya to the effect that benzoyl peroxide decomposes by a chain mechanism at sufficiently high concentrations is mentioned.

On the example of ethylphenyltriazene and propylphenyltriazene it was shown that as the concentration of the triazene in a solution increases, the velocity constant of the decomposition of the triazene (i.e., of radical formation from the triazene) also increases. This indicates that decomposition by a chain mechanism takes place. The velocity of decomposition was determined on the basis of gas evolution from the solution. The chain character of the decomposition of triazenes at high concentrations was confirmed by the fact that this velocity is sharply reduced when sulfur has been added: as established by M. P. Tikhomolova and others, sulfur is an effective acceptor of radicals.

Experiments with methylphenyltriazene, benzylphenyltriazene, and hexylphenyltriazene were also conducted. All triazenes were synthesized by reacting phenyl azide with the appropriate magnesium bromide derivatives. The decomposition of the triazenes was carried out in an atmosphere of nitrogen by a method described earlier (cf. B. A. Dolgoplosk, B. L. Yerusalimskiy, V. A. Krol', and L. M. Romanov, Zhurnal Obshchey Khimii, Vol 24, p 1775, 1954). (U)

20-4-27/60

AUTHORS

Dolgoplosk, B.A.   Romanov L.M.,
Yerusalimskiy, B.L. and Bogomel'nyy, V.Ya.

TITLE

The Use of Catalysts based on Magnesium Halogen Alkyls
and Titanium Tetrachloride in the Production of Amorphous
and Crystalline Polymers from α-Olefins and Dienes
(Katalizatory na osnove magniygalogenalkilov i chetyrekh-
khloristogo titana dlya sinteza amorfnykh i kristalliches-
kikh polimerov iz α-olefinov i dienov.)

PERIODICAL

Doklady Akademii NaukSSSR, 1957, Vol. 115, Nr 4,
pp. 731-733 (USSR)

ABSTRACT

The production of polymers from aliphatic compounds of the
ethylene series on the basis of polymerization by free
radicals is only possible for the first representative
of this series, namely ethylene. The interaction of the
free radicals with the ethylene homologues leads to the
formation of low-molecular products due to the rupture
reactions in the first stages of the process. Ziegler
and his collaborators used the reaction between organo-
aluminum compounds and titanium tetrachloride for
initiating the ethylene polymerization. Further in-
vestigations in this field furnished the possibilities
of initiating the olefin polymerization under formation

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The Use of Catalysts based on Magnesium Halogen Alkyls and Titanium
Tetrachloride in the Production of Amorphous and Crystalline Polymers
from a-Olefins.and Dienes

of homogeneously built (isotactic) polymers. Later on
organo-aluminum compounds could be replaced by other
organometallic derivatives, especially by sodium and
lithium compounds. The mechanism of these reactions can
for the time being not be considered as established. The
reaction between the components of the Ziegler reaction
has an oxidizing-reducing character and leads to the
formation of titanium derivatives of low valence degrees.
Ethane and ethylene develop as by-products in the case
of triethylaluminum. Kondyrev and Fomina proved that the
reaction between magnesium halogen alkyls and the salts
of various metals (Fe, Cu, Co, Ni, Cr, Mo) leads to the
formation of:
a) equivalent quantities of a saturated and an unsaturated
hydrocarbon which correspond to the alkyl of the oragno-
magnesium compound, and
b) of reduced forms of heavy metals. The effectiveness of
the system R - MgHal - $TiCl_4$ in the initiation of the
polymerization was proved by the authors in the case of
ethylene, propylene, styrene and isoprene. The former
polymerizes at once without pressure or heating from out-

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20-4-27/60

The Use of Catalysts based on Magnesium Halogen Alkyls and Titanium
Tetrachloride in the Production of Amorphous and Crystalline Polymers
from α-Olefins and Dienes

seide. The thus obtained polyethylene possesses $/\eta/ = 2.55$
melting point 130 - 138°C, ultimate strength 335 kg/cm²
and relative extension 730 %. These indices are analogous
to those of polyethylene which is obtained by means of
the ordinary Ziegler catalyst. Of great interest are data
which were obtained by the authors from the polymerization
of propylene. It was proved by the authors that on this
occasion in the presence of magnesium chloroethyl and
tetrachlorotitanium about the same quantities of an
amorphous and a crystalline (isotactic) polymer-form
develop. At the same time a fraction was isolated which
is insoluble in boiling hexane and whose crystallizability
was spectroscopically and X-ray structurally proved. In
the case of the polymerization of isoprene various polymer
forms were also isolated. The simultaneous production of
cis-1,4-polyisoprene and trans-1,4-polyisoprene or of
the amorphous and the isotactic polyisoprene directly
prove that in the system coexist various catalytic

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20-4-27/60

The Use of Catalysts based on Magnesium Halogen Alkyls and Titanium Tetrachloride in the Production of Amorphous and Crystalline Polymers from α-Olefins and Dienes

complexes of different types which lead to the formation of a polymer structure characteristic of a certain complex. An experimental part with the usual data follows.

There are 2 Slavic references.

ASSOCIATION: Institute for High-Molecular Compounds AN USSR. (Institut vysokomolekulyarnykh soyedineniy Akademii nauk SSSR)
PRESENTED: By I.N. Nazarov, Academician, April 25, 1957
SUBMITTED: March 22, 1957.
AVAILABLE: Library of Congress.

CARD 4/4

RAKOVA, G.V.; AVAKYAN, A.K.; ROMANOV, L.M.; YENIKOLOPYAN, N.S.

Cation polymerization kinetics of trioxane. Dokl. AN SSSR
156 no.6:1409-1411 Je '64.
(MIRA 17:8)

1. Institut khimicheskoy fiziki AN SSSR. Predstavleno akademikom
N.N. Semenovym.

BOBKOVA, L.P.; KORSAKOV, V.S.; ROMANOV, L.M.; YENIKOLOPYAN, N.S.

Polymerization of formaldehyde. Part 5: Effect of water, methyl alcohol, acetic acid, and acetic anhydride on the polymerization of formaldehyde in solutions. Vysokom. soed. 5 no.12:1780-1784 D '63.   (MIRA 17:1)

1. Institut khimicheskoy fiziki AN SSSR.

ROMANOV, L.M.; VERKHOTUROVA, A.P.; KISSIN, Yu.V.; RAKOVA, G.V.

Polymerization of 1,5-heptadiene on complex catalysts. Vysokom.
soed. 5 no.5:719-723 My '63.   (MIRA 17:3)

1. Institut khimicheskoy fiziki AN SSSR.

IRZHAK, V.I.; ROMANOV, L.M.; YENIKOLOPYAN, N.S.

Polymerization of formaldehyde. Part 2: Effect of a monomer on the mean degree and rate of polymerization. Vysokom.soed. 5 no.11:1638-1640 N '63.

(MIRA 17:1)

1. Institut khimicheskoy fiziki AN SSSR.

BOBKOVA, L.P.; KORSAKOV, V.S.; ROMANOV, L.M.; YENIKOLOPYAN, N.S.

Polymerization of formaldehyde. Part 3: Effect of active addition
agents on the polymerization of formaldehyde in solutions.
Vysokom.soed. 5 no.11:1653-1657 N '63.   (MIRA 17:1)

1. Institut khimicheskoy fiziki AN SSSR.

L 13853-63   EWP(j)/EPF(c)/EWT(m)/BDS   ASD   Pc-4/Pr-4   RM/WW

ACCESSION NR: AP3000700   S/0190/63/005/005/0719/0723

AUTHOR: Romanov, L. M.; Verkhoturova, A. P.; Kissin, Yu. V.; Rakova, G. V.

TITLE: Polymerization of hepta-1,5-diene on complex catalysts

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 5, no. 5, 1963, 719-723

TOPIC TAGS: copolymerization, complex catalysts, infrared spectra

ABSTRACT: The difficulties in obtaining rubbers suitable for vulcanization by means copolymerization of alpha-olefins induced the authors to select hepta-1,5-diene for a study of homopolymerization by means of various Ziegler-Natta catalysts.   The most active of these proved to be the system Al(C sub 2 H sub 5) sub 3 - TiCl sub 4.   The Al/Ti ratio of 2:1 proved the most effective, producing a maximum 40% yield of the polymer in a n-heptane solution at 70 to 80C.   The obtained poly-hepta-1,5-diene had a rubberlike texture, a molecular weight of 1250 and a 25-30% of double bonds, as determined by Hanus' method.   The product was also subjected to infrared spectroscopy in the 2000-7000 cm sup -1 range, and the number of double bonds per one CH sub 2 group was determined.   Ozonization provided additional clues.   It is concluded that the internal double bond is capable of participating in the polymerization initiated by Ziegler-Natta catalysts, a fact established by Natta while the present investigation was still in the experimental stage.   The formation of five-membered

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L 13553-63
ACCESSION NR:AP3000700

2

rings in the polymer is stressed. Thanks are given to G. Ye Zankov for assistance
in the analysis of the ozonized products. Orig. art. has: 4 formulas, 3 tables,
and 2 figures.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics,
Academy of Sciences SSSR)

SUBMITTED: 02Nov61   DATE ACQ: 17Jun63   ENCL: 00

SUB CODE: CH   NO REF SOV: 002   OTHER: 007

Card 2/2

MARCHUK, G.I.; KURBATKIN, G.P.; KALENKOVICH, Ye.Ye.; PANCHUK, V.I.;
        RIVIN, G.S.; ROMANOV, L.N.

        Solution of a system of equations for short-term weather
        forecasting. Izv. AN SSSR. Ser. geofiz. no.12:1849-1858
        D '64.   (MIRA 18:3)

        1. Vychislitel'nyy tsentr Sibirskogo otdeleniya AN SSSR.

L 25028-65   EWT(1)/FCC   GW   S/0049/64/000/012/1849/1858
ACCESSION NR: AP5001953

AUTHOR: Marchuk, G. I.; Kurbatkin, G. P.; Kalenkovich, Ye. Ye.; Panchuk, V. L.;
Rivin, G. S.; Romanov, L. N.

TITLE: Solving the system of equations for short-term weather forecasts

SOURCE: AN SSSR. Izvestiya. Seriya geofizicheskaya, no. 12, 1964, 1849-1858

TOPIC TAGS: atmospheric process, wind velocity, adiabatic approximation,
quasistatic condition, geopotential, Euler equation, isobaric surface, inter-
polation, quasigeostrophy, linear factorization, weather forecasting

ABSTRACT: This study deals with the solution of a complete system of equations
for short-range weather forecasting in an adiabatic approximation, taking the
quasi-static conditions of motion into account. Under consideration is a 10-level
model of a baroclinic atmosphere based on the utilization of the main differences
between all the geometrical variables. This problem is solved in two successive
stages. In the first stage, the geopotential in the period of time under con-
sideration is determined by the vector of the wind velocity and the geopotential;
in the second stage the geopotential found in the first stage is used for de-
termining the vector component of the wind velocity by means of Euler equations.

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L 25028-65
ACCESSION NR: AP5001953

An essential feature of the newly developed algorithm is that the solution to
the equation for the geopotential is found by a method consisting of a combin-
ation of linear factorization and relaxation. The construction of the mentioned
baroclinic model of the atmosphere is based on the assumption that the atmospheric
processes in it are both adiabatic and quasi-static. Orig. art. has: 16 formulas
and 3 figures.

ASSOCIATION: Vychislitel'niy tsentr, Sibirskoye Otdeleniye, Akademiya Nauk SSSR
(Computer center, Siberian branch, Academy of sciences, SSSR)

SUBMITTED: 04Jul64   ENCL: 00   SUB CODE: ES, DP

NO. REF SOV: 006   OTHER: 003

Card 2/2

28195
S/194/61/000/005/010/078
D201/D303

12 2200

AUTHORS: Gorin, A.V., Grosman, V.A., Drapchinskiy, L.V.,
Rayevskiy, B.N., Romanov, L.P., Storozhenko, E.P.,
Fedorov, Yu.P., Shavrin, G.M. and Shamov, V.P.

TITLE: A mobile radiometric emergency laboratory using
semiconductor devices

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika,
no. 5, 1961, 31-32, abstract 5 A235 (Dokl. nauchn.
konferentsii in-ta radiats. gigiyeny po itogam rab-
oty za 1959, g., L., 1960, 18-19)

TEXT: A description is given of a complete mobile laboratory,
mounted on the automobile УАЗ -450 A (UAZ-450 A) and which is to be
used for detecting radioactive isotope contamination of certain
areas or of separate objects. The laboratory equipment consists
of the following: 1) automatic recorder of the level of γ-back-
ground from 10 to 10^5 microcurie/hr ((ИРГ -ПГС-5)(IRG-PGS-5)); 2) 2

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A mobile radiometric emergency...   D201/D303

calculating machines ((ИРГ-ПП-100)(IRG-PP-100)); 3) supplies 200-
2000 V; 4) head screening (thickness 40 mm) for counters CTC-5 (STS-
5) in cassettes or for the end-counter; 5) rate counter ИРГ-ИП-1
(IRG-IP-1) with counting rate up to 10^6 pulses/min; 6) beta-gamma
portable scintillating radiometer with ФЭУ-25 (FEU-25) ИРГ-ПР-2
(IRG-PR-2). Power for the whole installation is supplied by the
automobile battery. Power comsumption ~ 15 watt. The laboratory
personnel consists of three operators and driver. /Abstracter's
note: Complete translation/

Card 2/2

85345

9,7500

S/120/60/000/005/013/051
E192/E382

AUTHORS: Rayevskiy, B.N., Romanov, L.R. and Shamov, V.P.

TITLE: A Counting Decade Based on Transistors

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, No. 5,
pp. 62 - 64

TEXT: A detailed circuit diagram of the device is shown in
Fig. 1. The decade consist of four bistable circuits and
a diode reset key. The bistable circuits are based on tran-
sistors type ПI4 (Pl4). The circuits are reset to zero by
momentarily applying the supply voltage to the collector of
the lefthand-side transistor via a diode. Unlike in the
standard decade circuits, a direct feedback is provided from
the output of the bistable circuit T_1 to the input of the
circuit T_4 and by providing a diode key between T_1 and
T_2. The decade operates as follows. Normally, all the
bistable circuits are in their rest position, which is
characterised by the lefthand-side transistor being closed
and the righthand-side transistor conducting. A voltage of

Card 1/3

85345
S/120/60/000/005/013/051
E192/E382

A Counting Decade Based on Transistors

-10 V is applied to the key diode from the collector of the lefthand-side transistor of T_4. The divider R_{10} and R_{11} keeps the anode potential of this diode at -8V; consequently, the diode is conducting. Thus, the key transmits positive pulses to the input of T_2. The pulses appearing at the second input of T_4 cannot operate it since its righthand-side transistor is open. The eighth pulse triggers T_4 so that its lefthand-side transistor becomes conducting and the righthand-side transistor is closed. The voltage at the key diode will thus be increased to -1.5 V and the key becomes nonconducting to positive pulses. The ninth pulse changes the state of T_1, while the tenth pulse returns T_1 and T_4 to their rest position. The decade now produces a positive output pulse and returns it to its original state. The resolving time of the decade is 7 μs and the power consumed by it is 0.15 W. The decade was constructed as a plug-in unit

Card 2/3

85345

S/120/60/000/005/013/051
E192/E382

A Counting Decade Based on Transistors

and its photograph is shown in Fig. 2.
There are 2 figures and 5 references: 3 Soviet and
2 English.

ASSOCIATION: Institut radiatsionnoy gigiyeny
               (Institute of Radiation Hygiene)

SUBMITTED: September 17, 1959

Card 3/3

ROMANOV, M., kand.biol.nauk

Make way for polymers! Nauka i pered.op.v sel'khoz. 9
no.11:66-68 N '59.   (MIRA 13:3)

1. Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk
imeni V.I.Lenina. Zamestitel' predsedatelya Soveta po pri-
meneniyu polimerov v sel'skom khozyaystve.
                (Polymers)

ROMANOV, M.

Films made of synthetic materials used in agriculture. Plast.
massy no.5:76 '60.   (MIRA 13:7)
    (Films (Chemistry))   (Agriculture)

ROMANOV, M., inzhener.

  Characteristics of turbojet engine performance. Grazhd.av.13
  no.3:17-20 Mr '56.   (MIRA 9:7)
     (Airplanes--Turbojet engines)

ROMANOV, M.

What the greatest airport in the country will be like. Grazhd.
av. no.3:18-20 Mr '61.   (MIRA 14:3)
                    (Moscow—Airports—Planning)

ROMANOV, PI.

SA

B 44

1484

621.313.13 : 621.3.013.82 = 82
Methods of accelerating the rate of excitation of electric machines.
Romanov, I. Bull. Acad. Sci., USSR, Dep. Tech. Sci., Nos. 4-5, pp.
239-256, 1944. - Formulae are developed for calculating the
magnetizing quantities governing the operation of electric motors, for
the urpose of considering applications for speeding the reaction of ele-
ctric power drives in industrial processes. The formulae are confirmed
by oscillograms obtained experimentally. A number of systems for
achoiveing accelerated reaction are considered and analysed mathematically.
Methods employing resistors and increased voltages are favoured for
heavy industrial power drives.   E. R. A.

RGMANOV, M.

Answers to the questions of printing industry workers. Sots.
trud 8 no.5:135-136 My '63.   (MIRA 16:6)

(Wages—Printers)

KOBULASHVILI, Sh.; ROMANOV, M.; ROTENBERG, A.; KHACHATUROV, A.

More attention to the quick freezing of food products [with summary in English]. Khol.tekh. 35 no.6:4-9 N-D '58.
(MIRA 12:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut kholodil'noy promyshlennosti.
(Food, Frozen) (Refrigeration and refrigerating machinery)

Romano, M.

2

Country: Rumania

Abstract Source: Veterinarian

Affiliation: Regional Veterinary Laboratory (Laboratorul Veterinar
Regional), Roman.

Source: Bucharest, _Probleme Zootehnice si Veterinare_, No 8, Aug 1961,
pp 63-67.

Data: "Abortion in Sows with _Listerella monocytogenes_."

Co-author:

ROLAND, N., -Dr.-, Regional Veterinary Laboratory, Roman.

ROMANOV, M.

Great force. Prom.koop. 12 no.4:16-17 Ap '58.   (MIRA 11:4)

1. Predsedatel' pravleniya oblpromsoveta, Novgorod.
        (Novgorod--Cooperative societies)

TOLOCHKOV, M., polkovnik; KUZ'MENKO, N., general-mayor tankovykh voysk;
DVORTSOV, F., podpolkovnik; KOVALEV, F., podpolkovnik; KOLESNIKOV, I.,
gvardii general-mayor; ROMANOV, M., polkovnik; KALINOVSKIY, V.,
polkovnik; BOZHKO, I., podpolkovnik; PAVLOVICH, A., podpolkovnik

We discuss projects of new general Army regulations. Voen. vest.
38 no. 8:2-10 Ag '58.   (MIRA 11:7)
          (Russia--Army--Regulations)

ROMANOV, M., inzhener.

"Flooded" freon coil condensors. Khol.tekh. 30 no.2:65 Ap-Je '53.
(MLRA 6:7)

(Refrigeration and refrigerating machinery) (Dichlorodifluoromethane)

ROMANOV, M., slesar'-lekal'shchik, uchastnik iyul'skogo Plenuma TSen-
    tral'nogo komiteta Kommunisticheskoy partii Sovetskogo Soyuza.

    All efforts toward the accomplishment of our socialist obliga-
    tions. Sov.profsoiuzy 16 no.15:9-11 Ag '60.   (MIRA 13:8)

    1. Vladimirskiy traktornyy zavod.
                    (Vladimir--Tractor industry)

METEVA, Ia.; VASILEVA, T.; ROMANOV, M.; RALCHEVA, A.; MILOSHEVA, E.

Epidemic of serous meningitis and similar disease. Suvrem.
med., Sofia 6 no.11:46-51 1955.

1. Iz I detska gradska bolnitsa, Sofiia. nauchen rukovoditel:
prof. Br. Ts. Bratanov.
        (MENINGITIS, epidemiology,
            serous, epidemic outbreak in Bulgaria. (Bul))

KOMISAR, Mikhail Il'ich; KOMAROV, A.A., inzh., retsenzent; ROMANOV,
    M.A., kand. tekhn. namk, retsenzent; YERMILOVA, L.F., red.
    izd-va; NOVIK, A.Ya., tekhn. red.

    [Electric machinery of gyroscope systems] Elektricheskie
    mashiny giroskopicheskikh sistem. Moskva, Oborongiz, 1963.
    287 p.   (MIRA 16:7)
            (Gyroscope)   (Electric machinery)

ROMANOV, M.A.; VITENBERG, Ya. L.

    Performance of asynchronous motors in airplanes cirucits.
    Sam.elektr. no.1:3-20 '60.   (MIRA 14:3)
                   (Airplanes--Electric equipment)

ROMANOV, M.A.

Voltage control of airplane generators and its effect on the
weight and size relations of generators. Sam.elektr. no.1:21-
36 '60.   (MIRA 14:3)
    (Airplanes--Electric equipment)
        (Voltage regulations)

ROMANOV, M. A.   Cand Biolog Sci

Dissertation: "Mineral Nutrition as a Factor of Cultivating the Wildings and Sets of an Apple-Tree." 26/4/50

Moscow Order of Lenin State U imeni M. V. Lomonosov

SO Vecheryaya Moskva
       Sum 71

KOLESOV, A.P.; ROMANOV, M.A., professor, direktor; GUDKOVA, A.M., glavnyy vrach.

Treatment of trichomonal colpitis with phytoncides of onion, garlic, and radish. Novosti med. no.34:22-23 '53.   (MLRA 6:9)

1. Akushersko-ginekologicheskaya klinika Astrakhanskogo gosudarstvennogo meditsinskogo instituta (for Romanov). 2. TSentral'naya poliklinika im. prof. Pirogova (for Gudkova).   (Phytoncides) (Vagina--Diseases)

PHASE I BOOK EXPLOITATION   SOV/4414

Samoletnoye elektrooborudovaniye; sbornik statey, No 1 (Air-
craft Electric Equipment; Collection of Articles, No 1).
Moscow, Oborongiz, 1960. 106 p. Errata slip inserted.
3,600 copies printed.

General Ed.: A. F. Fedoseyev, Candidate of Technical Sciences;
Ed. of Publishing House: K. I. Grigorash; Tech. Ed.: V. P.
Rozhin; Managing Ed.: A. S. Zaymovskaya, Engineer.

PURPOSE: This book is intended for engineers engaged in de-
signing and operating   aircraft electric equipment. It
may also be of interest to those working in the electrical
industry, and to teachers, instructors and students in
electrical engineering schools of higher and secondary
education.

COVERAGE: The book is a collection of 9 articles dealing with
problems in designing, calculating and operating aircraft
electric equipment, and electric motors, regulators, in-
struments, etc. The use of heat-resistant coatings and

Card 1/ 3

Aircraft Electric Equipment (Cont.)   SOV/4414

electric—insulating materials are discussed. No person-
alities are mentioned. References follow the article by
Gomel'skaya and Yasin.

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Aircraft Electric Equipment (Cont.)   SOV/4414

Prusov, M. A., and A. V. Vershinkin. Instrument for Measuring
Quantity of Electricity, Energy and Arcing Period   70

Gomel'skaya, A. I., and D. R. Yasin. Experience Gained in
the Use of Chemical Nickelplating   79

Sayenko, A. D., and S. F. Shakay. Use of Epoxide Resins as
Sealing and Impregnating Compounds   83

Ivanova, L. S., and A. P. Vasil'yeva. Determination of
Maximum Allowable Operational Temperatures for Glass Texto-
lites   92

AVAILABLE: Library of Congress

                                                        /ec
Card 3/3   10-18-60

ROMANOV, M.A.

Polymer materials in agriculture. Plast.massy no.6:47-50 '60.
(MIRA 13:11)
(Polymers)   (Agriculture--Equipment and supplies)

ROMANOV, M.A., kand. biol. nauk, red.; SUVALOV, I.S., red.; ANTONOVA,
      N.M., tekhn. red.

      [Use of polymeric films in agriculture] Primenenie polimer-
      nykh plenok v sel'skom khoziaistve. Pod obshchei red. M.A.Ro-
      manova. Moskva, Sel'khozgiz, 1961. 130 p.   (MIRA 15:7)

      1. Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk im.
      V.I.Lenina.
                   (Agriculture)   (Polymers)

ROMANOV, M.A.

Make way for advanced cultivation practices. Zemledelie 5 no.3:64-
65 Mr '57.   (MLRA 10:3)

1. Glavnyy agronom Borkovskogo zernosovkhoza, Kustanayskoy oblasti.
            (Wheat)

ROMANOV, M·D.

RESHETNYAK, V. Z. and ROMANOV, M. D.
Rostov Oblast Veterinary Experimental Station.
   "From the experience of the fight against the tick Hyalamma scupense."
SO: Vet. 27 (4) 1950, p. 20

ROMANOVA,M.F.

Present status of establishing the standard meter by light
wave lengths. Usp. fiz. nauk 56 no.2:257-264 Je '55.
   (Metric system) (Standards of length)   (MIRA 8:9)

BERTINOV, Al'bert Iosifovich; LARIONOV, A.N.,prof., doktor tekhn.nauk,
     retsenzent; ROMANOV, M.F., doktor tekhn.nauk, retsenzent;
     ATABEKOV, G.I., prof., doktor tekhn.nauk, retsenzent;
     GOLGOFSKIY, F.I., inzh., retsenzent; FEDOSEYEV, A.F., kand.
     tekhn.nauk, retsenzent; ISTRATOV, V.N., kand.tekhn.nauk, red.;
     PETROVA, I.A., izdat.red.; GARNUKHINA, L.A., tekhn.red.

     [Aeronautical electric generators] Aviatsionnye elektricheskie
     generatory. Moskva, Gos.izd-vo obor.promyshl., 1959. 594 p.
                                             (MIRA 12:7)
     1. Chlen-korrespondent AN SSSR; zaveduyushchiy kafedroy aviatsionnogo
     i avtotraktornogo oborudovaniya Moskovskogo energeticheskogo instituta
     im.Molotova (for Larionov).
        (Electric generators)   (Airplanes--Electric equipment)

SEREBRENNIKOV, Mendel' Girshevich; PERVOZVANSKIY, Anatoliy
      Arkad'yevich; Prinimal uchastiye ROMANOV, M.F.; MERKIN,
      D.R., red.

      [Discovery of hidden periodicities] Vyiavlenie skrytykh
      periodichnostei. Moskva, Nauka, 1965. 244 p.
                                          (MIRA 18:4)

ROMANOV, M.F.

Synthesis of optimum control systems with a finite memory in the
presence of internal noises. Trudy LPI no.235:98-104 '64.
(MIRA 17:11)

L 12152-66   EWT(1)/EPF(n)-2/ETC(m)   IJP(c)   WW

ACC NR: AT5028841   SOURCE CODE: UR/2563/65/000/252/0140/0146

AUTHOR: Romanov, M. F.

ORG: Leningrad Polytechnic Institute (Leningradskiy politekhnicheskiy institut)

TITLE: Effect of hidden periodicities in the presence of correlated noise

SOURCE: Leningrad. Politekhnicheskiy institut. Trudy. no. 252, 1965. Dinamika
i prochnost'mashin; mekhanika i protsessy upravleniya (Dynamics and durability of
machines; mechanics and processes of control), 140-146

TOPIC TAGS: ~~statistics estimation~~, noise theory, correlation noise, acoustic
frequency, acoustic theory

ABSTRACT: Using methods of Grenander and Rosenblatt, the author presents a method
for estimating the frequencies ω_k' and amplitudes A_k of the process y_t where the
process x_t

where
$$x_t = y_t + n_t, \qquad (1)$$

$$y_t = \sum_{k=1}^{\cdot} A_k \cos(\omega_k' t + \psi_k), \qquad (2)$$

Card 1/2

L 12152-66

ACC NR: AT5028841

is observable at discrete times on some finite interval. Here ψ_k are uniform on $(-\pi, \pi)$ and the noise n_t is a linear process. Orig. art. has: 17 formulas.

SUB CODE: 20/ SUBM DATE: none/ SOV REF: 002/ OTH REF: 005

Card 2/2

ROMANOV, M.F.

Exposure of hidden periodicities in the presence of correlated
noises. Trudy LPI 252:140-146 '65.   (MIRA 18:9)

ACCESSION NR: AP4018871   S/0043/64/000/001/0156/0159

AUTHOR: Romanov, M. F.

TITLE: The solution of a class of Fredholm integral equations

SOURCE: Leningrad, Universitet. Vestnik. Seriya matematiki, mekhaniki i astronomii, no. 1, 1964, 156-159

TOPIC TAGS: integral equation, Fredholm equation, Fredholm integral equation

ABSTRACT: Consider the Fredholm integral equation of the first kind:

$$\int K(t, \theta)\,\varphi(\eta)\,d\eta = f(t) \quad (0 < t < T) \tag{1}$$

where at first the kernel is taken to be: $K(t, \eta) = R(t - \eta)$, (2)

where $R(z)$ is defined by:

$$R(\eta) = \begin{cases} \sum_{k=1}^{m_1}\left(\sum_{s=0}^{n_k} A_{ks}\eta^s\right)e^{-l_k\eta} & (\eta < 0), \\ \sum_{k=1}^{m_2}\left(\sum_{s=0}^{n_k} A_{ks}\eta^s\right)e^{-l_k\eta} & (\eta > 0). \end{cases} \tag{3}$$

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ACCESSION NR: AP4018871

and where $\operatorname{Im} \omega_\lambda > 0$, $\operatorname{Im} \omega_\lambda' < 0$. The Fourier transform of (3) has the form:

$$S(\omega) = \frac{1}{\pi} \frac{M(\omega)}{N(\omega)},$$
(4)

where $M(\omega)$ and $N(\omega)$ are polynomials in ω of the mth and nth degrees, respectively. To solve the given integral equation we now have to solve the equation:

$$M\left(-i\frac{d}{dt}\right)\tau(t) = N\left(-i\frac{d}{dt}\right)f(t), \quad (0 \leq t < T),$$
(5)

and this solution has the form:

$$\tau(t) = \sum_{n=1}^{m} \phi_n(t) + \tau_f(t) \quad (0 < t < T),$$
(6)

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ACCESSION NR: AP4018871

The author then considers the kernel:

$$K(t, \eta) = \beta(t - \eta) + \sum_{k=1}^{n} X_k(t) Y_k(t). \tag{7}$$

where the functions $X_k(t)$ and $Y_k(t)$ are linearly independent and square-integrable in $(0, T)$. Methods similar to the previous case are used to obtain an explicit solution even in this case. Also, the Fredholm integral equation of the second kind is considered for the kernel shown in (2) above. An example of this latter case is provided. "The author thanks Prof. S. G. Mikhlin for helpful advice." Orig. art. has: 33 equations.

ASSOCIATION: None

SUBMITTED: 19Sep62   DATE ACQ: 23Mar64   ENCL: 00

SUB CODE: MM   NO REF SOV: 000   OTHER: 001

Card   3/3

45630

S/141/62/005/006/021/023
E140/E435

AUTHOR: Romanov, M.F.

TITLE: Calculation of the optimal value of the variable
             parameter of a linear system with finite memory

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Radiofizika.
             v.5, no.6, 1962, 1233-1242

TEXT: The purpose of the study is to obtain the optimal
filtration of useful signal from input noise in an automatic
control system.   An optimal nonstationary first order filter is
considered, as described by the equation

$$\alpha(t)\frac{dy}{dt} + y = f(t)$$ (1)

The filter is excited at $t = 0$ by random initial conditions and
a nonstationary random signal during the interval $0 \leqslant t \leqslant T$.
The value of $\alpha(t)$ for minimization of the mean square output
signal error at the time T is found.   A limiting value for the
error is found bounding the performance obtainable from a real
filter.   The method of solution involves the integral equation of
the form

Card 1/3

S/141/62/005/006/021/023
E140/E435

Calculation of the optimal ...

$$\int_0^T s(t)\,\varphi(\tau - t)\,d\tau = \mu(t) \qquad (0 \leqslant t \leqslant T) \qquad (14)$$

to which any problem in optimal filtering of a stationary signal in the class of systems with constant parameters can be brought. For nonstationary signals in the form

$$f(t) = g(t)x(t) + h(t) \qquad (1a)$$

where g(t) and h(t) are given functions of time, while x(t) is a stationary random process with prescribed correlation function having a rational spectrum, the solution leads to the integral equation

$$\int_0^T s(\tau)\left[\varphi(\tau-t) + \nu(\tau)\vartheta(t)\right]d\tau = \mu(t) \qquad (0 \leqslant t \leqslant T) \qquad (34)$$

for which a method of solution is given in the paper.
Card 2/3

Calculation of the optimal ...   S/141/62/005/006/021/023
                                          E140/E435

ASSOCIATION: Leningradskiy politekhnicheskiy institut
             (Leningrad Polytechnic Institute)

SUBMITTED: February 23, 1962

Card 3/3

45630

S/141/62/005/006/021/023
E140/E435

16. 9000

AUTHOR: Romanov, M.F.

TITLE: Calculation of the optimal value of the variable
             parameter of a linear system with finite memory

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Radiofizika.
             v.5, no.6, 1962, 1233-1242

TEXT: The purpose of the study is to obtain the optimal
filtration of useful signal from input noise in an automatic
control system.   An optimal nonstationary first order filter is
considered, as described by the equation

$$\alpha(t)\,\frac{dy}{dt} + y = f(t) \tag{1}$$

The filter is excited at   t = 0   by random initial conditions and
a nonstationary random signal during the interval $0 \leqslant t \leqslant T$.
The value of $\alpha(t)$ for minimization of the mean square output
signal error at the time   T   is found.   A limiting value for the
error is found bounding the performance obtainable from a real
filter.   The method of solution involves the integral equation of
the form

Card 1/3

Calculation of the optimal ...

$$\int_0^T s(t)\,\varphi(\tau - t)\,d\tau = \mu(t) \qquad (0 \leqslant t \leqslant T) \qquad (14)$$

to which any problem in optimal filtering of a stationary signal in the class of systems with constant parameters can be brought. For nonstationary signals in the form

$$f(t) = g(t)x(t) + h(t) \qquad (1a)$$

where g(t) and h(t) are given functions of time, while x(t) is a stationary random process with prescribed correlation function having a rational spectrum, the solution leads to the integral equation

$$\int_0^T s(\tau)\left[\varphi(\tau-t) + \nu(\tau)\chi(t)\right]d\tau = \mu(t)$$
$$(0 \leqslant t \leqslant T) \qquad (34)$$

for which a method of solution is given in the paper.

Card 2/3

Calculation of the optimal ...   S/141/62/005/006/021/023
                                                  E140/E435

ASSOCIATION: Leningradskiy politekhnicheskiy institut
             (Leningrad Polytechnic Institute)

SUBMITTED: February 20, 1962

Card 3/3

L 26689-65   EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(l)   Po-4/Pq-4/Pf-4/Pg-4/Pk-4/Pl-4
ACCESSION NR: AT5002371 IJP(c)   BC S/2563/64/000/235/0098/0104
                                                                      S O
AUTHOR: Romanov, M. F.   3 6
                                                                      B + 1

TITLE: Synthesis of optimum systems with finite storage in the presence of internal
noises

SOURCE: Leningrad. Politekhnicheskiy institut. Trudy, no. 235, 1964. Dinamika i
prochnost' mashin (Dynamics and strength of machines), 98-104.

TOPIC TAGS: linear differential equation, automatic control, transfer function, random
function, optimum system synthesis, control system, finite storage, internal noise,
Fredholm integral

ABSTRACT: This article examines the linear system of automatic control with the con-
stant parameters shown in Fig. 1 of the Enclosure. A correction device is selected
so that the reproduction process has a minimum mean square error. Using the principle
of superposition, the structural diagram of the system being considered is transformed,
as shown in Fig. 2 of the Enclosure. As a result, the formulated problem reduces to a
determination of the optimum linear operator of a closed system with feedback. After
obtaining the minimum of the mean square error, and determining the transfer function
of the correction device, the author solves the obtained Fredholm integral equation of

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L 26689-65
ACCESSION NR: AT5002371

the first kind. A system is thus obtained which should be satisfied by the coefficients of
the unknown constants subject to determination. It is concluded that the solution of the
integral equation corresponds to each solution of this system; conversely, the solution
of the system corresponds to any solution of the integral equation. Thus, the integral
equation and the system of linear algebraic equations are equivalent. Orig. art. has:
2 figures and 16 formulas.

ASSOCIATION: Leningradskiy politekhnicheskiy institut imeni M. I. Kalinina
(Leningrad polytechnic institute)

SUBMITTED: 00   ENCL: 02   SUB CODE: IE, MA

NO REF SOV: 003   OTHER: 000

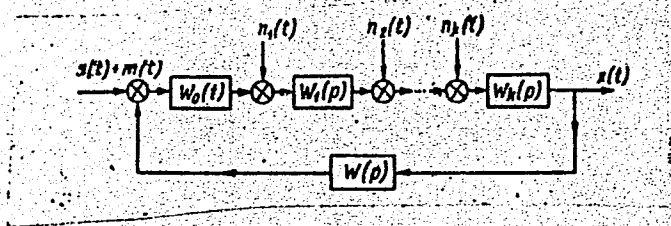Card   2/4

L 26689-65
ACCESSION NR: AT5002371

ENCL: 01

Fig. 1 - Block diagram of a linear automatic control system with constant parameters.
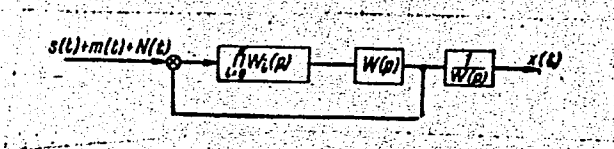
Card   3/4

L 26689-65
ACCESSION NR: AT5002371

ENCL: 02

$$s(t)+m(t)+N(t) \;\;\otimes\!\!\!-\!\!\!-\!\!\boxed{\textstyle\sum_{l=1}^{n} W_l(p)}\!-\!\boxed{W(p)}\!-\!\boxed{\frac{1}{W(p)}}\!-\!x(t)$$

Fig. 2 - Block diagram of a modified linear automatic control system.

Card   4/4

POKROV, M. F., Professor, SHOSHINA, O. Yu.

"Evaluating the Surface Finish of a Metal." Stanki I Instrument Vol. 15, No. 12, 1944

ER 52059019

TODOROV, I.T.; ROMANOV, M.G.

    Case of elliptocytosis. Suvrem.med.,Sofia 6 no.5:97-102 1955.

1. [I]z detskata klinika pri Visshiia meditsinski institut V.
Chervenkov-Sofiia (zav.katedrata: prof.L. Rachev), i I detska
gradska bolnitsa-Sofiia (gl.lekar; B. Boiuklieva)
      (ANEMIA,
          alliptocytosis, case report)

RACHEVA, U.; ROMANOV, M. G.

Prothrombin time in newborn and significance of vitamin K in pre-
vention and therapy of intracranial hemorrhages. Suvrem.med.,Sofia
5 no.11:95-101 1954.

1. Iz II gradski rodilen dom - Sofiia (gl.lekar: Iv. Doganov) i
I detska gradska bolnitsa - Sofiia (gl. lekar: B. Buiuklieva)
    (CEREBRAL HEMORRHAGE, in infant and child,
       prev. & ther., vitamin K)
    (VITAMIN K, therapeutic use,
       cerebral hemorrh. in inf., prev. & ther.)
    (PROTHROMBIN TIME,
       in newborn)

67487

16.4500

SOV/24-59-5-18/24

AUTHOR: Romanov, M.I.   (Moscow)

TITLE: The Analytic Conditions for Aperiodicity in Linearized
            Systems

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh
            nauk, Energetika i avtomatika, 1959, Nr 5, pp 162-174 (USSR)

ABSTRACT: It is assumed that all the zeros of an integral real
            polynomial $f(x)$, which has positive coefficients and no
            repeated roots, are real and negative, the necessary and
            sufficient condition for this being that the Hermits
            form belong to $f(x) - jf'(x)$ and $f'(x) - jf(x)$ should
            be positive and determinate. Eq (1) is such a
            polynomial; Eq (2) is the polynomial with conjugate
            roots. Eq (3) gives the coefficients, as does Eq (4).
            The Hermite-Biehler theorem (on $f(x)$ and $f'(x)$) is then
            applied to prove that the above assumption is justified.
            Eq (6) is used to produce a Hermite form (7), whose
            coefficients are given by (8) and (9). Eq (10) gives
            the minors; if all of these are not zero, the form may
Card   be put as Eq (11), and so that form is determinate and
1/2   positive if, and only if, Eq (12) is complied with.

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SOV/24-59-5-18/24

The Analytic Conditions for Aperiodicity in Linearized Systems

Eq (13) gives (6) in the f form. The working from
Eq (14) to (20) is clear; Eq (21) is a recurrence
formula for the Hermite matrix.   Certain other relations
that simplify the work are also given.   The
significance of the Tables is evident in the light of the
above; much of the rest of the article is devoted to a
polynomial of tenth degree, Eq (27), and to other
polynomials of ascending powers.   The last section of
the paper deals with a numerical example.
There are 12 tables and 14 references, of which 9 are
Soviet, 4 are French and 1 is English.

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SUBMITTED: May 15, 1959

FILE I BOOK EXPLOITATION   30//h27b
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Moscow. Aviatsionnyy Institut Imeni Sergo Ordzhonikidze

Voprosy rascheta aviatsionnykh priborov i sistem upravleniya; sbornik statey (Problems in the Design of Aviation Instruments and Control Systems; Collection of Articles) Moscow, Oborongiz, 1960. 157 p. (Series: Its: Trudy, vyp. 120). Errata slip inserted. 3,650 copies printed.

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

Ed. (Title page): B. A. Ryabov, Doctor of Technical Sciences, Professor; Ed. (Inside book): V. M. Tkach; Tech. Ed.: V. I. Orekhkina; Managing Ed.: A. S. Zaytseva, Engineer.

PURPOSE: This book is intended for engineers and technicians working in the planning and design of devices and control systems and can also be used by students in the electromechanical departments of schools of higher technical education.

COVERAGE: The book consists of articles containing results achieved by the Department of Aeronautical Devices and Automatic Equipment of the Moscow Aviation Institute imeni Ordzhonikidze in the development of aeronautical devices and automatic equipment. The book covers the following: design of a transformer for an external register and telemetering system, the problems of the dynamics of linear and nonlinear control systems, membrane origin, and the design of devices for measuring flight altitude, and the revolutions of engines. No personalities are mentioned. References are found at the end of some articles.

TABLE OF CONTENTS:

AVAILABLE: Library of Congress

Card 1/3   KC/m/pd
9-2-66

AUTHOR: Romanov, M. I.   SOV/20-121-2-25/53

TITLE: On the Analysis of the Commutation of Commutator Machines
                With Contact Conduction   (K analizu kommutatsii
                kollektornykh mashin, svyazannoy s kontaktnoy provodimost'yu)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 121, Nr 2, pp. 284 -
                287 (USSR)

ABSTRACT: This is a presentation of an analytical method of investigating
                commutation processes. It is assumed that such processes are
                only dependent upon the contact conductivity below the brushes.
                The   resistance of the armature windings and of their leads
                to the commutator is neglected. Formulae (1) and (2) specifying
                the commutator current are written down. Formula (2) was first
                obtained by E. Arnold and G. Mie (Ref 9) (Arnol'd, Mi). Formula
                (14) for the additional commutator current is deduced. The
                solution of the classical commutation equation can be solved
                for the value of the additional current at all A-values which
                occur in practice.
                            $$A = R \frac{T}{L},$$

Card 1/2   where T denotes the commutation period and R the resistance

On the Analysis of the Commutation of Commutator Machines Connected with Contact Conduction

of the brush contact. A table giving the incomplete beta-function for values of A from 0 to 15 and the additional commutation current for all values of A is incorporated in this paper. The values of formula (15) following from (14) are also tabulated. The mean value of the additional current during one commutation period is computed on the basis of the formulae obtained: Formula (16). The evidence presented shows that this solution of the commutation equation offers wide possibilities for further computations.
There are 2 figures and 10 references, 8 of which are Soviet.

PRESENTED: March 4, 1958, by V. S. Kulebakin, Member, Academy of Sciences, USSR

SUBMITTED: March 4, 1958

Card 2, 2

SHILER, V.G.; ROMANOV, M.I., mashinist-instructor

Recuperation is an important source of savings in electric power.
Elek.i tepl.tiaga 5 no.11:13-14 N '61.   (MIRA 14:11)

1. Glavnyy inzh. depo Belovo Zapadno-Sibirskoy dorogi (for Shiler).
            (Electric locomotives)

ROMANOV, M.I., doktor tekhn.nauk; ARMENSKIY, Ye.V., kand.tekhn.nauk

Method for simulating operating motors of low-powered a.c.
servosystems. Trudy MAI no.120:42-58 '60.   (MIRA 13:9)
                 (Servomechanisms)

8(3), 9(3)   SOV/20-128-2-19/59

AUTHOR: Romanov, M. I.

TITLE: The Algebraic Criterion of Aperiodicity in Linear Systems

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 2, pp 291-294
               (USSR)

ABSTRACT: This article deals with an algebraic criterion of aperiodicity
               which has a structure similar to the well-known criterion by
               Raut-Hurwitz for the negativity of the real parts of all
               ciphers of a polynomial. The following theorem is established:
               A whole real polynomial $f(x)$ with positive coefficients has no
               multiple ciphers. To render all ciphers of $f(x)$ real and
               negative, it is necessary and sufficient that the Hermitian
               form belonging to $\varphi(x) = f(x) - jf'(x)$ and $\varphi*(x) = f'(x) - jf(x)$
               is positive and defined. The theorem is briefly proved in a
               scheme. A definition of only $n(n+1)/2$ components of the
               Hermitian matrix is sufficient. As an example, the author in-
               vestigates a polynomial of the degree:

               $$n = 10 = f(x) = \sum_{J=0}^{10} a_J x^J = a_0 + a_1 x + a_2 x^2 + \ldots + a_{10} x^{10} \text{ with}$$

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SOV/20-128-2-19/59

The Algebraic Criterion of Aperiodicity in Linear Systems

positive coefficients only. For a determination of the ratios of coefficients at which all ciphers are real and negative, the author employed the above criterion. At first, the general matrix form is written down. A matrix is then obtained which contains elements expressed by the coefficients of the polynomial under investigation. Afterwards, the matrix for $n = 4$, i.e. $f(x) = a_0 + a_1 x + a_2 x^2 + a_3 x^3 + a_4 x^4$ as well as inequalities for the principal minors are written down. With n being the greatest exponent of the polynomial, the order of the determinants does not exceed n according to the criterion under discussion. There are 2 tables and 10 references, 6 of which are Soviet.

PRESENTED: November 22, 1958, by V. S. Kulebakin, Academician

SUBMITTED: December 13, 1957

Card 2/2

ROMANOV, M.I.; GORSKIY, V.V.

Application and design of autoexciting electric-machine amplifiers.
Sbor.nauch.rab.Mekh.inst. no.3:15-44 '52.   (MLRA 8:3)
        (Rotating amplifiers) (Boosters, Electric)

Romanov, M.L. -

ROMANOV, M.L.; NEVRAYEV, V.Yu.

Graphic-analytic methods in the design of cross-field electric-machine amplifiers. Sbor.nauch.rab.Mekh.inst. no.3:45-83 '52.   (MLRA 8:3)
            (Rotating amplifiers) (Boosters, Electric)

ROMANOV, M. I.

USSR (600)

"Methods of Accelerating the Remagnetization of Electric Motors." Iz. Ak. Nauk SSSR, Otdel Tekh., Nauk, No. 4-5, 1944. Submitted 11 Dec., 1943.

Report U-1556, 14 Nov 1951.

POPKOV, M. I.

"Systems of Extinguishing Magnetic Field of Excitation of Synchronous Machine," Iz. Ak. Nauk SSSR, Otdel. Tekh. Nauk, No. 5, 1941. Submitted 21 Feb 1941.

Report U-1530, 25 Oct 1951

"Methods of Accelerating the Demagnetization of Electric Motors." Iz. Ak. Nauk SSSR,
Otdel. Tekh. Nauk, Nos. 4-5   1944

BR 52059019

ROMANOV, M. I.

"A Method for Determination of Leakage Reactance in Synchronous Machines,"

Dok. AN, 36, No.4--5, 1942.