MAGAYEV, B. ...,

        Shape:
        Vol.:

        ...

ACCESSION NR: AP4028965

AUTHOR: Nagayev, E.L.

TITLE: Electric current in a gas-filled diode with potential discontinuities at the electrodes

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.4, 1964, 745-752

TOPIC TAGS: diode, gassy diode, cathode discontinuity, cathode drop, diode current, gassy diode current, cathode drop diode current

ABSTRACT: The current in a diode containing a weakly ionized gas is calculated for the case in which the plane electrodes are so close together that the electrons do not have time to make significant progress toward thermal equilibrium with the gas. The calculation is based on a kinetic equation for the electron distribution func-tion in which volume ionization is neglected and only collisions with neutral atoms are included. Energy transfer in these collisions is neglected. The appropriate boundary condition at the cathode is that the electrons leave with the Maxwellian velocity distribution corresponding to the temperature of the cathode. The kinetic equation is first solved, however, with the boundary condition that the electrons

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ACCESSION NR: AP4028965

all leave the cathode with a fixed speed (but in the directions uniformly distribu-
ted over the hemisphere). This solution is effected, under the assumption that the
potential and the collision integral are both given functions of position, by a me-
thod employed in the theory of radiative transfer (E.Hopf,Mathematical problems of
radiative equilibrium, Cambridge,1934). The potential is now assumed to be constant
in the inter-electrode space, but in general to differ there from its value on the
cathode itself (cathode discontinuity). There results an expression for the electron
distribution function as a functional of the collision integral, in which the ca-
thode potential drop and the speed of the electrons leaving the cathode appear as
parameters. Since the collision integral is in turn a functional of the distribu-
tion function, it can be determined from the condition that the two expressions be
consistent. It is now assumed that the scattering is isotropic, so that the colli-
sion integral is proportional to the electron density, and the consistency condition
is formulated as an integral equation for the density. A variation principle is
found of which this integral equation is a consequence, and an approximate solution
is obtained by the Ritz procedure with the assumption that the electron density is
a linear function of distance from the cathode. From this solution, the distribution
function is obtained and the current is calculated. This is finally averaged over
the Maxwellian distribution of initial electron speeds, giving an expression for

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ACCESSION NR: AP4028965

the current as a function of cathode temperature, cathode drop, electron mean free path, and electrode spacing. (The electrode spacing enters via the boundary condition on the anode that electrons enter but do not leave this electrode.) When the cathode drop is zero, the current is nearly inversely proportional to the electrode spacing, in agreement with results previously obtained for this case by B.Ya.Moyzhes and G.Ye.Pikus (FTT 2,756,1960). When the cathode drop is very large the current approaches the Richardson emission of the cathode. For a fixed finite cathode drop, the current depends the more strongly on the electrode spacing, the higher the cathode temperature. The cathode drop itself is to be determined from the condition of quasi-neutrality in the inter-electrode region. For this purpose the ion density and current are described by the phenomenological equations of B.Ya.Moyzhes and G.Ye.Pikus (loc.cit.). These equations involve the electric field in the inter-electrode region, which was assumed to vanish in the calculation of the electron distribution. If it is not possible to find a value of the cathode drop for which the charge density and electric field are both small, it can be concluded that the assumption of constant potential was not adequate. "In conclusion the author expresses his gratitude to I.A.Zaydenman for his constant interest in the work. The author is also grateful to M.I.Kaganov, R.Ya.Kucherov and L.E.Pikenglaz for reading the manuscript and for critical comments." Orig.art.has: 38 formulas.

Card 3/4

ACCESSION NR: AP4028965

ASSOCIATION: none

SUBMITTED: 02Feb63

SUB CODE: PH, GE

DATE ACQ: 28Apr64

NR REF SOV: 003

ENCL: 00

OTHER: 002

Card 4/4

L 3598-66

UR/0057/65/035/009/1634/1641

37

ACCESSION NR: AP5024042

AUTHOR: Nagayev, E. L.

TITLE: Operation of a gas-filled diode when the electron distribution is not *B* Maxwellian

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 35, no. 9, 1965, 1634-1641

TOPIC TAGS: diode electron tube, cesium electron tube, thermionic energy, conversion, plasma device, mathematic physics

ABSTRACT: The author develops the theory of a plane hot-cathode plasma diode operating under such conditions that the Maxwell distribution of electron velocities is not established. The theory is applicable to the case in which the electrode spacing is large compared with the mean free path of an electron for collision with atoms, for although electrons readily exchange momentum in collisions with atoms, the energy exchanged in such collisions is very slight owing to the large mass difference. The author has previously treated the case in which the potential is a monotonic function of distance from the cathode (ZhTF 32, No.10, 1964). In the present paper he considers the case in which there is a single potential maximum between the electrodes. The calculations are based on the kinetic equation including the collision integral for electron-atom collisions. The potential is assumed

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ACCESSION NR: AP5024042

to be a linear function of distance from the cathode except at the two electrodes themselves, where it is discontinuous. The kinetic equation is solved by methods that are discussed in more detail in the paper cited above. The stability of the solution is discussed in the diffusion approximation with electron-electron collisions taken into account, and stability conditions are derived. The ion distribution is discussed and a procedure is devised whereby one can calculate the current-voltage characteristic of the diode. The beam instability of the plasma was neglected. Although this effect provides the predominant mechanism for the establishment of a Maxwell electron velocity distribution when the cathode potential drop is very great, it appears to be of secondary importance in cesium diodes. Orig. art. has: 44 formulas.

ASSOCIATION: none

SUBMITTED: 30Sep63   ENCL: 00   SUB CODE: ME, EC, NP

NO REF SOV: 005   OTHER: 003

Card 2/2

NAGAYEV, E.I.

...pin mechanism underlying charge and energy tr..... ... .
tela 7 no.10 2969-2977 O '65.

1. Inesyan gyy nauchno-issledovatel'skiy nst ....
....

L 10573-66   EWT(1)/T   IJP(c)   AI

ACC NR: AP5025383   SOURCE CODE: UR/0181/65/007/010/3033/3041

AUTHOR: Nagayev, E. L.

ORG: All-Union Scientific Research Institute of Current Sources, Moscow (Vsesoyuznyy
nauchno-issledovatel'skiy institut istochnikov toka)

TITLE: Spin mechanism of charge and energy transfer. Antiferromagnetic and para-
magnetic states

SOURCE: Fizika tverdogo tela, v. 7, no. 10, 1965, 3033-3041

TOPIC TAGS: theoretic physics, antiferromagnetic material, paramagnetic material,
energy band structure

ABSTRACT: The paper is a continuation of a previous work in which general expres-
sions were derived for the kinetic coefficients of a system of quasi-localized spins.
The author uses these previously derived relationships for determining the kinetic
coefficients of materials in which the spin mechanism may be responsible for energy
and charge transfer. The results of these calculations indicate that conductivity
in the metallic state for almost all the compounds in this class is due to localized
d-electrons. In other words, these materials make the transition into the metallic
state without forming d-bands. The antiferromagnetic and paramagnetic states are
considered individually. In the first case, primary consideration is given to scat-

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ACC NR: AP5025383

tering of spin waves by magnetic defects. In the second case, the presence of de-
fects may be disregarded. Conductivity is independent of temperature in the anti-
ferromagnetic state, while in the paramagnetic state conductivity is inversely pro-
portional to temperature and may reach values of ~100 $\Omega^{-1} \cdot cm^{-1}$. The thermoelectro-
motive force decreases with an increase in temperature, approaching a constant limit-
ing value. Orig. art. has: 32 formulas.

SUB CODE: 20/   SUBM DATE: 04Dec64/   ORIG REF: 007/   OTH REF: 007

HW

Card 2/2

L 26624-66   EWP(1)/T   IJP(c)   AT

ACC NR: AP5025374   SOURCE CODE: UR/0181/65/007/010/29 69/2977

AUTHOR: Nagayev, E. L.

ORG: All-Uni·n Research Institute for Sources of Current, Moscow (Vsesoyuz-
nyy nauchno-issledovatel'skiy institut istochnikov toka)

TITLE: On the spin mechanism of charge and energy transfer, General relation-
ships

SOURCE: Fizika tverdogo tela, v. 7, no. 10, 1965, 2969-2977

TOPIC TAGS: transition element, kinetic equation energy, electron spin

ABSTRACT: A polar model of metal was used to describe the occurrence of trans-
fer in combinations of transition metals. The projection perturbation theory
was used. Formulas for kinetic coefficients through current correlators were
interpreted with the aid of the Bogolyubov technique in a subspace of quasihomo-
polar functions. A formula was derived for the deformed energy flux of electrons,
which replaces true energy flux in the subspace of quasihomopolar functions. It
was indicated that energy transfer is carried out by virtual pairs and vacancies.
Because of exchange interaction, energy transfer is absent. It was also indicated
that Herring's criticism – C. Herring (Phys. Rev., 87, 60, 1952.) of the

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L 26624-66

ACC NR: AP5025374

Bogolyubov-Tyablikova results N. N. Bogolyubov (Lektsii po kvantovoy statistike. Izd. "Radyan'ska shkola", Kiev, 1949; N. N. Bogolyubov, S. V. Tyablikov. ZhETF, 19, 251, 256, 1949). had no adequate foundation. Orig. art. has: 49 formulas.

SUB CODE: 20,11/ SUBM DATE: 04Dec64/ ORIG REF: 003/ OTH REF: 008

Card 2/2

NAGAYEV, German Danilovich; POLYAKOV, N.V., red.; BUKOVSKAYA, N.A.,
tekhn.red.

[Designer Shpagin] Konstruktor Shpagin. Moskva, Voen.izd-vo
M-va obor.SSSR, 1960. 139 p.   (MIRA 13:11)
(Shpagin, Georgii Semenovich, 1897-1952)

VORONOV, I.S., gornyy inzh.; KOVALENKO, V.A., gornyy inzh.; BEKETOV,
P.Ye., gornyy inzh.; MATVEYEV, V.P., gornyy inzh.; NAGAYEV,
Kh.Kh., gornyy inzh.; SHMAKOV, P.I., gornyy inzh.; CHEPLYAYEVA,
N.G., gornyy inzh.

Conveying and loading ore with a vibrating feeder. Gor.
zhur. no.8:28-31 Ag '64.   (MIRA 17:10)

NAGIYEV, M.F.; KARAMD H, .V.; ZAYT EVA, Z.A.

Theory of reactors operating with total recycling; on the concentration gradient. Azerb. khim. zhur. no.5:79-84 '63
(MIRA 17:8)

NAGAYEV, Nikolay Il'ich; SHIBANOV, S.V., redaktor; FEDOSOVA, N.I., redaktor; GLUBKOVA, L.A., tekhnicheskiy redaktor

[Hunting ermine mink, and polecats] Promysel gornostaia, kolonka i khoria. Pod red. S.V.Shibanova. Moskva, Izd-vo tekhn. i ekon. lit-ry po voprosam zagotovok, 1956. 35 p.   (MLRA 9:10)
        (Trapping)

NAGAYEV, Nikolay Il'ich; SHIBANOV, S.V., red.; SHVETSOV, V.G.,
     red.izd-va; SOTNIKOVA, N.F., tekhn. red.

[Trapping fur-bearing animals] Kapkannyi promysel pushnykh
zverei. Moskva, Izd-vo TSentrosoiuza, 1962. 65 p.
                                          (MIRA 16:5)

                    (Trapping)

NAGAYEV, P.V., laureat Stalinskoy premii;   LICHENKOV, I.M.

Using a spherical chamber in the piston of a four-cycle engine with self-ignition. Avt.trakt.pron.no.5:16-20 My '53.   (MLRA 6:5)

1. Nauchnyy avtomotornyy institut.   (Gas and oil engines)

KISELEV, B.A., inzh.; LIPGART, A.A., otv.red.; PASHIN, M.A., red.; BORISOV,
S.G., red.; BRISKIN, M.I., red.; BRYZGOV, N.N., red.; DYBOV, O.V.,
red.; ZIL'BERBERG, Ya.G., red.; LOZAR', A.S., red.; LUNEV, I.S.,
red.; NAGAYEV, P.V., red.; PEVZNER, Ya.M., red.; PRYADILOV, V.I.,
red.; RAMAYYA, K.S., red.; SAMOL', G.I., red.; SEDOVA, Ye.V., red.;
TAMRUCHI, O.V., red.; CHAPKEVICH, V.A., red.; CHISTOZVONOV, S.B.,
red.; SHKOL'NIKOV, E.M., red.; SMIRNOVA, G.V., tekhn.red.

[Investigation of the operation and gas-exchange of a loop-scavenged
two-cycle motor-vehicle diesel engine] Issledovanie rabochego
protsessa i gazoobmena dyukhtaktnogo avtomobilnogo dizelia s
petlevoi produvkoi. Moskva, Mashgiz, 1961. 93 p. (Moskow.
Gosudarstvennyi nauchno-issledovatel'skii avtomobil'nyi i
avtomotornyi institut. Trudy, no.30).   (MIRA 16:8)
                    (Motor vehicles—Engines)

NAGAYEV, R.F. (Leningrad)

Dynamics of a vabratory machine having a beam-type vibrating element. Izv.AN SSSR.Otd.tekh.nauk.Mekh.i mashinostr. no.1: 18-23 Ja-F '63.   (MIRA 16:2)
                    (Vibrators)

NAGAYEV, R.F. (Leningrad)

Dynamics of a vibratory percussion crusher with a pair of self-
synchronizing vibrators. Izv.AN SSSR.Mekh. i mashinostr. no.5:
46-53 S-O '63.   (MIRA 16:12)

NAGAYEV, R.F.

Natural vibrations of a rectangular perforated plate. Trudy
LPI no.226:117-122 '63.   (MIRA 16:9)
                     (Elastic plates and shells—Vibration)

AUTHOR: Nagayev, R. F. (Leningrad)

TITLE: Internal synchronization of almost identical dynamic objects under the influence of weak linear relations

TOPIC TAGS: synchronization, dynamic object, weak linear relation, stability, synchronous motion, generating phase, harmonious functioning, coinciding parameters, coinciding periods

ABSTRACT: The author studies the general case of almost identical objects synchronized under the influence of weak linear relations. He obtains conditions for existence and stability of synchronous motions and equations for determining "generating phases". One speaks of synchronous motion of objects in a system when the basic parameters, which characterize the rhythm of motion, coincide. For periodic motion, one is concerned with coinciding of the periods. The author distinguishes weak and strong relations between objects, which influence their

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ACCESSION NR: AP4027581

motion, and he is basically interested in weak relations with small influence,
having little effect on deforming the nature of the motion. In order to achieve
synchronous motion, the variables characterizing the degree of synchronization of
the system must be of the same order of smallness as the parameter reflecting the
"strength" of the relations. This condition is best satisfied by systems of almost
identical objects. Orig. art. has: 29 formulas.

ASSOCIATION: none

SUBMITTED: 24Oct63   DATE ACQ: 28Apr64   ENCL: 00

SUB CODE: PH, MM   NO REF SOV: 002   OTHER: 001

Card 2/2

S/0040/64/028/003/0483/0492

ACCESSION NR: AP4040573

AUTHOR: Nagayev, R. F. (Leningrad)

TITLE: Synchronization of almost identical dynamic systems close to Lyapunov systems

SOURCE: Prikladnaya matematika i mekhanika, v. 28, no. 3, 1964, 483 - 492

TOPIC TAGS: synchronization, dynamic system, Lyapunov system, perturbation, stability

ABSTRACT: The author assumes that the motion of an isolated object is described by a system of differential equations close to a Lyapunov system. In order to be able to adjust an object to the frequency of an exterior periodic perturbation transmitted to the object with the help of a weak connection, it is required only that this frequency be included in the frequency range of the isolated object. For interior synchronization, i.e., synchronization of an autonomous (on the whole) mutually connected system of objects, intersection of their frequency ranges is naturally required. Apparently the tendency to synchronization is stronger for systems of such objects. The author studies the problem in general formulation

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ACCESSION NR: AP4040573

for the case of almost identical objects, deriving conditions for existence and necessary conditions for stability of synchronous conditions. He obtains results which he then uses to study synchronization and autophasing systems of almost conservative objects established on a carrying body of rather general form. He establishes a generalized integral criterion of stability which is applicable to such a system. Orig. art. has: 70 formulas.

ASSOCIATION: none

SUBMITTED: 02Mar64

SUB CODE: MA

DATE ACQ: 19Jun64

NO REF SOV: 007

ENCL: 00

OTHER: 000

Card 2/2

L 45382-65   EWT(d)   IJP(c)

AUTHOR: Nagayev, R. F. (Leningrad)

TITLE: Synchronization in a system of intrinsically nonlinear units with a single degree of freedom

TOPIC TAGS: nonlinear system, equation of motion, Lagrange equation, conservative system, power series, approximation method

ABSTRACT: Consider a system of n-dynamic units with a single degree of freedom whose positions are determined by the generalized coordinates $q_1 \ldots q_n$. Introduce the coupling parameter μ to characterize the degree of deformation in the links of the moving units. The generalized Lagrangian of the interconnected system is then expressed by

$$L = \sum_{i=1}^{n} L_i(q_i, \dot{q}_i) + \mu L_0(q_1, \dot{q}_1, \ldots, q_n, \dot{q}_n, \nu t) + \mu^2 \ldots \quad (1)$$

To express the equations of motion of the system in the canonical form

$$\dot{q}_i - \frac{\partial H_i}{\partial p_i} = -\mu \frac{\partial L_0}{\partial p_i} + \mu^2 \ldots, \quad \dot{p}_i + \frac{\partial H_i}{\partial q_i} - Q_i = \mu \frac{\partial L_0}{\partial q_i} + \mu^2 \ldots, \quad (2)$$

$$(i = 1, \ldots, n)$$

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L 45382-65

ACCESSION NR: AP5010626

the generalized velocity q_i is expanded in powers of small μ using the canonical variables q_i, p_i. First, the solution of the equation of motion is discussed for $\mu = 0$, and then the problem is considered where the system is tuned to the frequency of the external excitations over a wide range. The equations of motion are transformed to a phase-frequency system

$$\omega_i = \frac{\mu}{\sqrt{k_i(\omega_i)}}\left(\frac{\partial x_i}{\partial \varphi_i}F_i + \frac{\partial L_0}{\partial \varphi_i}\right) + \mu^2 \ldots$$

$$\varphi_i - \omega_i = -\frac{\mu}{k_i(\omega_i)}\left(\frac{\partial x_i}{\partial \omega_i}F_i + \frac{\partial L_0}{\partial \omega_i}\right)\mu^2 \ldots \qquad (i = 1, \ldots, n)! \,, \tag{3}$$

where $Q_i = \mu F_i$. The problem of a substantially nonlinear, almost conservative, system is expressed by the following multidimensional rotary phase

$$\omega_i' = \mu Y_i(\varphi, \omega, \tau) + \mu^2 \ldots \,, \qquad \varphi_i' = \omega_i + \mu X_i(\varphi, \omega, \tau) + \mu^2 \ldots$$

$$Y_i(\varphi, \omega, \tau) = Y_i(\varphi_1, \ldots, \varphi_n; \omega_1, \ldots, \omega_n; \tau) \tag{4}$$

$$X_i(\varphi, \omega, \tau) = X_i(\varphi_1, \ldots, \varphi_n; \omega_1, \ldots, \omega_n; \tau) \qquad (i = 1, \ldots, n) \,,$$

and the solution given up to the third approximation by expanding ω and φ in

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ACCESSION NR: AP5010626

powers of μ. The results are then applied to the synchronous solution of equation (3). "In conclusion the author thanks I. I. Blekhman for evaluating the work." Orig. art. has: 56 equations.

ASSOCIATION: none

SUBMITTED: 18Nov64   ENCL: 00   SUB CODE: ME, MA, ME

NO REF SOV: 006   OTHER: 000

b/o
Card 3/3

L 17855-66   EWT(m)/ETC(m)-6/EWP(w)   IJP(c)   EM/WW

ACC NR: AP6004064   SOURCE CODE: UR/0040/65/029/005/0801/0809

AUTHOR: Nagayev, R. F. (Leningrad)   *3.6*

ORG: none   *B*

TITLE: The general problem on synchronization in a nearly conservative system

SOURCE: Prikladnaya matematika i mekhanika, v. 29, no. 5, 1965, 801-809

TOPIC TAGS: dynamic system, kinetic energy,   Lagrange equation, conservative system, system synchronization, vector, potential energy, motion equation

ABSTRACT: The problem of synchronization in a nearly conservative system of weakly linked dynamic objects from maximally generalized positions is studied. The system consists of k dynamic objects; the movement of the ith object in the system is characterized first of all by a $\ell_i \times 1$ column vector of partial general coordinates

$$q_i = (q_{i1}, \ldots, q_{i\ell_i}).$$

The form of dependency of the dynamic characteristics of an object on generalized coordinates and velocities is invariant with respect to the type of linkage. Kinetic energy is expressed as $T_i = \frac{1}{2} q_i'' A_i(q_i) \dot{q}_i \cdot$,

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L 17855-66
ACC NR: AP6004064
$\mathcal{D}$

where A_1 is a symmetric $(A_1 = A_1')$ "inertial" $\ell_1 \times \ell_1$ matrix. Using Π_i to denote potential energy and x to denote a supplementary coordinate vector, the author expresses kinetic and potential energies in the system as

$$T^* = \sum_{i=1}^{k} T_i + \Delta T^*, \qquad \Pi^* = \sum_{i=1}^{k} \Pi_i + \Delta \Pi^*,$$

where

$$\Delta T^* = \sum_{i=1}^{k} q_i'' A_{im}(x, q) \dot{x}' + \frac{1}{2} x'' A_m(x, q) \dot{x}', \qquad \Delta \Pi^* = x'C(q, v\ell) + \cdots$$

Criteria are developed for the strength of interactions between objects. The weakness of interaction is studied through the introduction of a linkage parameter which is zero for objects in the system which are considered isolated. This parameter is used in expressions for the inertial and dynamic characteristics of the system. Equations of system motion are developed in the Rauss form. The Rauss function is

$$R = T - \sum_{i=1}^{k} p_i'q_i' = -\frac{1}{2} \sum_{i=1}^{k} p_i'A_i^{-1}p_i + \mu \left(\frac{1}{2} \xi'' M_m ° \xi' + \sum_{i=1}^{k} p_i'A_i^{-1}A_{im}'\xi' + \right.$$

$$\left. + \frac{1}{2} y'' N_n ° y' + \sum_{i=1}^{k} p_i'A_i^{-1}N_{im}'y' + \frac{1}{2} \sum_{i,j=1}^{k} p_i'A_i^{-1}N_{ij}'A_j^{-1}p_j \right) + \mu^2 \cdots$$

and the Rauss kinetic potential is

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ACC NR: AP6004064

$$L_R = R - \Pi = - \sum_{i=1}^{k} H_i + \mu L_0 + \mu^2 \ldots, \qquad L_0 = \Delta L^* + L^{(1)} + L^{(2)} \cdot$$

A Lagrange equation is used in expressing the motion of a mutually linked system of objects in Rauss form. A general case where all objects in a generating approximation are essentially nonisochronous is developed, and the stability and properties of the synchronous state are discussed. A simple example of two mechanical vibrators in concentric rotation is given. Orig. art. has: 41 equations.

SUB CODE: 12, 20/ SUBM DATE: 02Apr65/ ORIG REF: 005

Card 3/3 nat

BENYAKOVSKIY, M.\.; GUTNIK, M.V.; TOROPOV, G.M.; BUTYLKINA, L.I.;
    REUTOV, Yu.G.; SHIKHANOVICH, B.A.; FIRSOV, P.A.; MAGAYEV, S.A.

Mastering the operation of the plant for cold-rolled sheet production.
Stal' 25 no.8:726-730 Ag '65.   (MIRA 18:8)

1. Cherepovetskiy metallurgicheskiy zavod.

NAGAYEV, S.V., Cand Phys-Math Sci-- (diss) "Certain limiting
theorems for homogeneous circuits by Markov." Tashkent,
Publishing House Acad Sci UzSSR,1957. 8 pp. (Central Asian
State U im V.I. Lenin. Phys-Math Faculty.) 150 copies.
(KL, 12-58, 96)

-13-

AUTHOR: Nagayev, S. V.   (Tashkent)

TITLE: Some Limit Theorems for Stationary Markov Chains.
           (Nekotoryye predel'nyye teoremy dlya odnorodnykh tsepey
           Markova.)

PERIODICAL: Teoriya Veroyatnostey i yeye Primeneniya, 1957, Vol.II,
           Nr.4,   pp.389-416. (USSR).

ABSTRACT: Let X be the space of points ξ and F_X the σ-algebra
          of its subsets.   Let $p(\xi, A)$, $\xi \in X$, $A \in F_X$,
          be the transition probability function.   For fixed ξ
          the function $p(\xi, A)$ is a probability measure, and
          for fixed A it is measurable over F_X.   The transition
          probability for n steps, $p^{(n)}(\xi, A)$ is calculated
          from the formula

$$p^n(\xi, A) = \int_A p^{(n-1)}(\eta, A) p(\xi, d\eta).$$ (Eq.0.1)

          If the initial probability distribution is $\pi(.)$, then
Card 1/6 $p(.,.)$ defines sequences of random quantities

Some Limit Theorems for Stationary Markov Chains.

$$x_1, x_2, \ldots, x_n, \ldots,$$

which are connected in a homogeneous Markov chain, and

$$Pr(x_1 \in A) = \pi(A),$$

$$Pr(x_n \in A) = \int_X p^{(n-1)}(\xi, A) \, \pi(d\xi). \qquad (Eq. 0.2)$$

Let $f(\xi)$ be a real function defined on X and measurable over F_X, and let $F_n(x)$ be the distribution function of the sum

$$S_n = \frac{1}{B_n} \sum_1^n f(x_i) - A_n, \qquad (Eq. 0.3)$$

where A_n and $B_n > 0$ are constants. As in the study of sums of independent identically distributed random quantities there arises the question of the conditions under which the sequence $F_n(x)$ converges

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Some Limit Theorems for Stationary Markov Chains.

and the law by which it converges. But if for
independent random quantities this problem is completely
solved, in the case of random quantities related in a
homogeneous Markov chain this is far from being the case.
The investigation is complicated because the behaviour
of $F_n(x)$ depends on the ergodic properties of the chain.

In order to simplify the problem it is necessary to study
the chain with sufficiently strongly expressed ergodic
properties. The conditions which are sufficient for the
truth of the central limit theorem have been most fully
investigated. Markov himself proved the central limit
theorem for three states under the condition when all
transition probabilities were positive. Deblin (Ref.3)
proved the central limit theorem for arbitrary sets of
states under the assumption that $f(\xi)$ was bounded but
imposed certain restrictions on the transition probability
function. Doob (Ref.12) and Dynkin (Ref.11) replaced
the limitation on $f(\xi)$ by the assumption that for

Card 3/6   some $\delta > 0$ the following (wrongly marked 0.3 in the text)

Some Limit Theorems for Stationary Markov Chains.

$$\int_X \left| f(\xi) \right|^{2+\delta} p(d\xi) < \infty , \qquad (\text{Eq}.0.3(2))$$

holds where p(.) is the stationary probability
distribution corresponding to p(.,.). Deblin proved
that in the case of an even chain it is possible to
reduce the study of sums of the form Eq.0.3(1) to the
study of sums of independent identically distributed
random quantities. Deblin's method permits the assertion
that for a definite class of even chains a set of possible
limiting laws coincides with the set of stable laws. The
stable laws for the number of instances of a fixed state
of an even chain were obtained by Feller (Ref.13). Also
important is the study of the conditions under which the
local limit theorem is true. This theorem was proved
for finite chains by Kolmogorov (Ref.9), using Deblin's
method. Considerable attention has been concentrated
on shortening the limit theorems. Sirazhdinov (Ref.10)

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Some Limit Theorems for Stationary Markov Chains.

obtained a shortening of a local and integral limit
theorems for a finite number of states.   The present
paper consists of three chapters: in the first chapter
the asymptotic properties of the characteristic function
of a sum of random quantities connected in a homogeneous
Markov chain are studied.   In the second chapter the
convergence to the normal law and to a stable law which
is different from the normal is studied.   In the third
chapter the local limit theorem is proved and asymptotic
expansions are obtained.   The method of characteristic
functions is the basic method used in the investigations
of this paper.   The central limit theorem is proved
under the assumption that

$$\int_X f^2(\xi)p(d\xi) < \infty$$

Card 5/6
There are sixteen references, of which 9 are Soviet,
5 French and 2 American.

SOV/52-2-4-1/7

Some Limit Theorems for Stationary Markov Chains.

SUBMITTED: June 25, 1957.

       1. Perturbation theory 2. Mathematics—Theory
       3. Topology

Card 6/6

N HG/I/V

20-2-10/62

AUTHOR: Nagayev, S.V.

TITLE: On Some Boundary-Value Theorems for Homogeneous Markov Chains.
             (O nekotorykh predel'nykh teoremakh dlya odnorodnykh tsepey Markova)

PERIODICAL: Doklady Akad.Nauk SSSR, 1957, Vol. 115, Nr 2, pp. 237-239 (USSR)

ABSTRACT: The abstract space X and the σ-algebra $\mathcal{F}_X$ of its sub-sets be assu-
             med. $p(\eta, A)$, $\eta \in X$, $A \in \mathcal{F}_X$ be a function of the transition probabil-
             ities. A certain stationary distribution of the probabilities $p(A)$
             may apply here, so that in the case of certain $\varrho < 1$ and c the re-
             lation $|p^{(n)}(\eta, A) - p(A)| < c\varrho^n$ applies uniformly with regard to
             $\eta \in X$ and $A \in \mathcal{F}_X$. In this connection $p^{(n)}(\eta, A)$ signifies the pro-
             bability of the transition (after n steps) from the state η into a
             state belonging to the set A. The function $p(\eta, A)$ and the initial
             distribution $\pi(A)$ of the probabilities define the sequence $x_1, x_2 \ldots$
             $\ldots x_n$ of the accidental quantities combined to a homogeneous Markov
             chain. In this connection applies $P(x_1 \in A) = \pi(A)$.
             $P(x_n \in A) = \int_X p^{(n-1)}(\eta, A)\pi(d\eta)$. Then 5 relevant theorems are gi-
             ven. All of these theorems can be determined by a method which is
             based on the use of the spectral theory of the linear operators in
             a Banakh space.
             There are 8 references, 7 of which are Slavic.

Card 1/2

On Some Boundary-Value Theorems for Homogeneous Markov Chains.   20-2-10/62

ASSOCIATION: Moscow State University imeni M.V.Lomonosov. (Moskovskiy gosudarst-
             vennyy universitet imeni M.V.Lomonosova)
PRESENTED: February 13, 1957, by Kolmogorov, A.N., Academician
SUBMITTED: December 23, 1957
AVAILABLE: Library of Congress.

Card 2/2

NAGAYEV, S.V.

FIRST BOX EXPLOITATION   504/A981

Soveshchaniye po teorii veroyatnostey i matematicheskoy statistike

Trudy Vsesoyuznogo soveshchaniya po teorii veroyatnostey i matematicheskoy statistike, Yerevan, 19-25 sentyabrya 1958 g. (All-Union Conference on the Theory of Probability and Mathematical Statistics. Held in Yerevan 19-25 September, 1958. Transactions) Yerevan, Izd-vo AN ASSR, 1960. 291 p. Errata slip inserted. 2,500 copies printed.

Sponsoring Agency: Akademiya nauk Armyanskoy SSR.

Editorial Staff: G.A. Akhverdyan, B.V. Gnedenko, Ye.B. Dynkin, Yu.V. Linnik and S. M. Tamamyan; Ed. of Publishing House: A.G. Sikmol; Tech. Ed.: N.A. Kaplanyan.

PURPOSE: The book is intended for mathematicians.

COVERAGE: The book contains 41 articles submitted to the Conference and dealing with the theory of probability and mathematical statistics. Some of the articles are the papers read at the Conference and edited for publication, while others outline the theses of papers which appeared or are scheduled to appear, wholly or in part, in other publications; in some cases, such publications are quoted. A list of the papers whose contents were published elsewhere is included and the places of publication are indicated. Individual articles examine theories of mass service, spectral instruments, numbers, gases, and certain processes, discuss the theorems of Shannon, Markov's chains, and certain squares, the stochastic utilities, and functions. Such items as the method of least squares, a scheme of Markov's and diffusion processes, measure and their application, distribution of stars, Bernoulli experiments, Markov-type radio field, visible products of cor-inversion notion, capacity of radio channel, and defective products are con- sidered. No personalities are mentioned. References accompany some of the articles.

Ayvazyan, Yu.S.   On a Property of Accompanying Laws. (Theses)   33

Blum, R.M.   Limit Theorems for Random Quantities on Compact Abelian Groups. (Theses)   33

Petrov, V.V.   On a Central Limit Theorem for m-Dependent Quantities   34

Statulyavichus, V.A.   Limit Theorems for Heterogeneous Markov's Chains (Theses)   34

Kovalenko, I.N. and P.S. Knopov.   Some Problems in the Theory of Positive Games. (Theses)   35

Leonov, A.I.   Limit Theorems for Large Deviations in the Theory of Homogeneous Markov's Chains   35

Richter, Wolfgang.   Local Limit Theorem for Probabilities of Large Deviations. Necessity of Cramer's Condition   55

Parkhomen, B.S.   On Constructive Proof of the Basic Shannon's Theorem for a Simple Binary Case. (Theses)   68

Chugin, Yu.I.   Some Properties of Stochastic Pulse Processes   72

Sharshanov, A.V.   Random Measures and their Applications in the Theory of Stochastic Processes and Statistics. (Theses)   83

Chetaev, R.N.   Topologic Measures and the Theory of Random Functions   83

Sirozhdinov, S.Kh.   On Evaluation of a Distribution Function Based on the Realization of a Stationary Process   88

Yilssm, N.N.   On One Problem of a Random Walk. (Theses)   98

NAGAYEV, S.V. (Tashkent)

Local limit theorems for large deviations. Teor. veroiat. i ee orim. 5 no.2:259-261 '60.   (MIRA 13:9)
(Probabilities)

NAGAYEV, S.V. (Tashkent)

Refinement of limit theorems for homogeneous Markov chain. Teor.
veroiat. i ee prim. 6 no.1:67-86 '61.   (MIRA 14:6)
        (Markov processes) (Limit theorems (Probability theory))

NAGAYEV, S.V.

Some problems of the theory of homogeneous Markov processes
with discrete time. Dokl. AN SSSR 139 no.1:34-36 Jl '61.
(MIRA 14:7)

1. Institut matematiki im. V.I. Romanovskogo AN UzSSR. Pred-
stavleno akademikom A.N. Kolmogorovym.
(Markov processes)

NAGAYEV, S. V.

PHASE I BOOK EXPLOITATION   SOV/6371

Vsesoyuznoye soveshchaniye po teorii veroyatnostey i matematicheskoy
statistike. 6th, Vilnius, 1960.

Trudy VI Vsesoyuznogo soveshchaniya po teorii veroyatnostey i matema-
ticheskoy statistike i kollokviuma po raspredeleniyam v beskonechno-
mernykh prostranstvakh (Transactions of the Sixth Conference on
Probability Theory and Mathematical Statistics and of the Symposium
on Distributions in Infinite-Dimensional Spaces held in Vilnius
5-10 September 1960)   Vilnius, Gospolitizdat LitSSR, 1962.
493 p.   2500 copies printed.

Sponsoring Agency: Akademiya nauk Litovskoy SSR. Vil'nyusskiy gosu-
darstvennyy universitet imeni V. Kapsukasa. Matematicheskiy
institut imeni V. A. Steklova, Akademiya nauk SSSR.

Editorial Board: N. N. Vorob'yev, B. V. Gnedenko, R. L. Dobrushin,
Ye. B. Dynkin, A. N. Kolmogorov, I. P. Kubilyus, Yu. V. Linnik,
Yu. V. Prokhorov, N. V. Smirnov, V. A. Statulyavichyus, and A. M.
Yaglom. Ed.: D. Melihene; Tech. Ed.: O. Pakerite.
Card 1/17

Transactions of the Sixth Conference (Cont.)   SOV/6371

PURPOSE: Dissemination of scientific information.

COVERAGE: Because of various editorial difficulties, not all papers
presented at the Conference could be included. The 86 papers
presented here are divided by subject matter into 6 sections (see
Table of Contents). The editors thank the members of the Mathe-
matical Section of the Institute of Physics and Mathematics of
the Lithuanian Academy of Sciences and the Department of Probabi-
lity Theory and Number Theory at Vil'nyus University, particularly
A. K. Aleshkyavichene, A. A. Mitalauskas, B. A. Ryauba, and R. V.
Uzhdavinis. References, cited in the text at the end of the in-
dividual reports, comprise 489 entries: 316 Soviet (a number of
which are translations), 2 Hungarian, 1 Polish, 139 English, 20
French, 10 German, and 1 Italian.

TABLE OF CONTENTS:

Card 2/17

Transactions of the Sixth Conference (Cont.)   SOV/6371

Card 6/17

NAGAYEV, S.V.

Central limit theorem for Markov processes with discrete
time. Izv. AN Uz. SSSR. Ser. fiz. mat.nauk o no.2:13-20
'6.'.   (MIRA 1':')

1. Institut matematiki imeni V.I.Romanovskogo AN UzSSR.
                         (Markov processes)

NAGAYEV, S.V.

Integral limit theorem for large deviations. Izv. AN Uz.
SSR. Ser. fiz.-mat. nauk 6 no.6:37-43 '62.   (MIRA 16:2)

1. Institut matematiki imeni V.I. Romanovskogo AN UzSSR.
        (Limit theorems (Probability theory))

NAGAYEV, S.V.

    Local limit theorems for large deviations. Vest. LGU 17 no.1:8C-8?
    '62.   (MIRA 15:1)
                    (Functions of complex variables)

NAGAYEV, S.V.

Integral limit theorem for large deviations. Dokl. AN SSSR
148 no.2:280 Ja '63.
(MIRA 16:2)

1. Institut matematiki im. V.I. Romanovskogo AN UzSSR. Pred-
stavleno akademikom A.N. Kolmogorovym.
        (Limit theorems (Probability theory))

NAGAYEV, S.V.

/ theorem in renewal theory. Teor. verolat. i mat. stat. no.1:
100-102   '64.   (MIRA 18:6)

NAGAYEV, S.V.

    Ergodic theorems for Markov processes with discrete time. Sib.mat.
zhur. 6 no.2:413-432 Mr-Ap '65.   (MIRA 18:5)

NAGAYEV, S.V. (Tashkent)

Some limit theorems for large deviations. Teor. veroiat. i ee
prim. 10 no.2:231-254 '65.   (MIRA 18:6)

NAGAYEV, Vl.

Routine trip. Sov.profsoiuzy 16 no.9:30-31 My '60.
(MIRA 13:7)

(Inland water transportation)

NAGAYEV, V.A., assistent

Determining the lower critical load of a cylindrical shell
subjected to external transverse loads. Izv.vys.ucheb.zav.;
mashinostr. no.6:46-53 '58.   (MIRA 12:8)

1. Moskovskiy aviatsionnyy institut.
              (Elastic plates and shells)

NAGAYEV, V. A., Cand Tech Sci (diss) -- "Investigation of the stability of closed

cylindrical membranes with external pressure".   Moscow, 1959. 8 pp (Min

Higher and Inter Spec Educ RSFSR, Moscow Order of Lenin Aviation Inst im Sergo

Ordzhonikidze), 160 copies (KL, No 10, 1960, 131)

L 12903-63   EWT(1)/EWP(q)/EWT(m)/BDS AFFTC/ASD JD

5-4

8/2942/63/000/001/0059/0076

ACCESSION NR: AT3003027

AUTHOR: Nagayev, V. A. (Candidate of technical sciences)

TITLE: On the stability of cylindrical shells under pure flexure beyond the proportional limit

SOURCE: Moscow. Aviatsionnyy institut. Voprosy prochnosti i ustoychivosti elementov tonkostennykh konstruktsiy, no. 1, 1963, 59-76

TOPIC TAGS: cylindrical-shell stability, cylindrical shell, pure flexure, plastic buckling, testing, shell, stability

ABSTRACT: An experimental qualitative investigation has been made of the buckling behavior of accurately machined annealed tabular steel specimens under pure flexure beyond the elastic limit. Twenty-eight specimens, machined by turning, were used; they had diameters of 156 and 157.5 mm and wall thicknesses of 1.4 to 2.0 mm. The specimens and their fixing and arrangement in the testing machine are described and shown in diagrams. The stresses were calculated from strains measured by wire-type strain gauges placed in axial and circumferential directions. The wave-forming process is described and discussed in detail and illustrated by photographs. The method of determining the buckling (critical) load is explained,

Card 1/2

L 12903-63
ACCESSION NR: AT3003027

and the load-strain relationship is shown in diagrams. The load under which wave formation is initiated was taken as the critical load. The instant of wave-formation initiation can be detected by the drop in the load which always accompanies it. The bending-stress distribution for various bending moments over the height of the specimen is shown in stress diagrams, and the spreading of the plastic zone as well as its effect on the buckling are discussed. The influence of geometric parameters of specimens on the critical bending moment was investigated, shown in a table, and compared with correspond-ing theoretical values calculated for an annular-cross-section beam. Fifteen other roughly machined specimens were tested in order to evaluate the effect of manufacturing irregularities. The experimental and theoretical results are shown in a table and a diagram. A general discussion of data obtained in relation to the buckling behavior of cylindrical shells is also included. Orig. art. has: 16 figures, 2 tables, and 6 formulas.

ASSOCIATION: none

SUBMITTED: 00   DATE ACQ: 27Jun63   ENCL: 00

SUB CODE: AP   NO REF SOV: 005
Card 2/2   OTHER: 000

L 44306-65   EWT(1)/EWA(j)/EWA(h)=2   JK

ACCESSION NR: AP5008028   S/0016/65/000/003/0150/0150

AUTHOR: Kolendovich, A. I.; Sergeyeva, L. I.; Nagayev, V. N.

TITLE: On epidemiology of rabies in Tselinogradskaya oblast

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 3, 1965, 150

TOPIC TAGS: animal, human, rabies, fox, animal vector, epidemiology

ABSTRACT: During 1959-1962 cases of rabies in wild and domesticated animals were reported in Tselinogradskaya oblast after many years of no incidence. Rabies in farm animals was often related to epizooty in red foxes. During this period 3 cases of rabies in humans were reported. The source of infection was traced to red foxes (Vulpes fulva) in 2 cases and to the corsac fox (Vulpes corsac) in the third case. Orig. art. has: None.

ASSOCIATION: Tselinogradskaya oblastnaya sanitarno-epidemiologicheskaya stantsiya (Tselinogradskaya Oblast Sanitation and Epidemiological Station)

Card 1/2

I. 44306-65

ACCESSION NR: AP5008028

SUBMITTED: 00   ENCL: 00   SUB CODE: LS

NR REF SOV: 000   OTHER: 000

Card 2/2

LIPKIN, M.Ye.; ARTYK .. M.B.; ...., Yu...; ...., .A. ; A.. .. .. . . ;
    SHILYAYEV, I.F.; .....; .A.; AUDREYEVA, A.. . ; ..   . . . :
    ABRAMOVA, S.J.; .... A. ..... YE. R ., ..A.; .... ., ...
    M.R.; DASHEVSKIY, ...; .. R.., Y.. .; ....   ..; . . ..
    L.I.; NAGAYEL..Ya.M.; ..... A, ...; ....; . A.; ... .
    ANISIMOVA, T...; OVALAMAN, ...; A. ... .

    Abstracts of articles re...ze: .. ..
    i immun. .. n .. ::14'.. ye ..,

BOGATYREVA, Ye.V.; NAGAYEV, V.V.

Inhibiting action of sodium cinnamate in neutral media. Zhur,-
prikl.khim. 35 no.3:550-553 Mr '62.   (MIRA 15:4)
     (Corrosion and anticorrosives) (Cinnamic acid)

NAGAYEV, Yu.A., nauchnyy sotrudnik

Using fertilizers in the central part of the Ural Mountain region.
Zemledelie 8 no.6:79-82 Je'60.   (MIRA 13:10)

1. Ural'skiy filial Akademii nauk SSSR.
   (Ural Mountain region--Field crops--Fertilizers and manures)

NAGAYEV, Yu. A.

Distribution of grain elevators in Chelyabinsk Province. Muk.-elev.
prom. 26 no.6:26-27 Je '60.   (MIRA 13:12)

1. Ural'skiy filial Akademii nauk SSSR.
        (Chelyabinsk Province—Grain elevators)

NAGAYEV, Yu.A.

Raw material source for the Troitsk Fat Combine. Masl.-zhir.
prom. 27 no.11:21 N '61.
(MIRA 15:1)

1. Ural'skiy filial AN SSSR.
(Troitsk—Oils and fats)

SLOBODIN, V.F.; IVANIUK. Yu.I.; KUZCVIEV, P.I.; NAGAYEV, "u. , LUPENAVA, .. ;
MESHCHANINOV,S.I.;BRYUNOV,Yu.A.; SYCHEV ,F.A.; KOSYAKOV,P.O.,
ed.; ZALOVA, L.N., red.izd-va; TAMKOVA, L.F., tekhn.red.

[Distribution and specialization of agriculture in Chelyabinsk
Province] Razmeshchenie i spetsializatsiia sel'skogo khoziaistva
Cheliabinskoi oblasti. Sverdlovsk, AN SSSR, 1963. 204 p.
                                                    (MIRA 16:12)
1. Akademiya nauk SSSR. Ural'skiy filial, Sverdlovsk. Otdel
ekonomicheskikh issledovaniy.
  (Chelyabinsk Province—Agriculture—Economic aspects)

NAGAYEVA, A.G.

Removal of iron in chemical analysis. V. P. Abramova, and A. G. Nagaeva. Akad. Nauk Kirgiz. S.S.R. 7, 19-21(1958).—Two methods are discussed for the removal of Fe in samples being analyzed; i.e., the extn. of FeCl₃ from a soln. in HCl with Et₂O satd. with HCl, and an electrolytic method. A new electrolytic cell is described in which the Pt electrode was replaced by a Pt spiral. The cathode is a Hg layer. The use of Pt allows a greater anode surface, thereby decreasing the time required for the electrolysis.

J. Rektat Leach

4E4j - 5 - 1

8(2)

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1959, Nr 3, p 162 (USSR)

SOV/112-59-3-5437

AUTHOR: Bleshinskiy, S. V., Abramova, V. F., and Nagayeva, A. G.

TITLE: Simple Voltage Stabilizer for Chemical Work
(Prostoy stabilizator napryazheniya dlya khimicheskikh rabot)

PERIODICAL: Tr. In-ta khimii AN KirgSSR, 1957, Nr 8, pp 171-173

ABSTRACT: A simple AC voltage stabilizer is described which is based on the
nonlinear characteristic of incandescent lamps. The lamps are connected in
the opposite arms of a bridge circuit. The unbalance voltage appearing on the
bridge diagonal when the supply voltage fluctuates is added to the voltage of a
transformer secondary. When the supply voltage changes by 15%, the output
stabilizer voltage changes by only 3%. One illustration. Bibliography: 3 items.

V. Ye. Kh.

Card 1/1

BLESHINSKIY, S.V.; BAGAYEVA, A.G.

Radiometric determination of zinc. Izv.AN Kir.SSR.Ser.est.i tekh.
nauk 2 no.3:51-53 '60.   (MIRA 13:9)
    (Zinc--Analysis)   (Zinc--Isotopes)

ABRAMOVA, V.F.; NAGAYEVA, A.G.; USUBAKUNOV, M.; BLESHINSKIY, S.V.

    Quantitative determination of indium. Izv. AN Kir. SSR. Ser.
    est. i tekh. nauk 2 no.11:67-77 '60.   (MIRA 14:10)
               (Indium—Analysis)

BLESHINSKIY, S.V.; KHARAKOZ, A.Ye.; LUKIN, I.N.; BABENKO, V.G.; CHALOVA,
      Ye.P.; Prinimali uchastiye: ABRAMOVA, V.F.; VINOGRADOV, V.P.;
      USUBAKUNOV, M.; GORBUNOV, V.D.; OSIPOVA, T.P.; NAGAYEVA, A.G.;
      MEDVEDEVA, V.A.; ALTYNNIKOVA, P.M.

      Fluosilicic method for separating rare-earth elements. Izv.
      AN Kir. SSR. Ser. est. i tekh. nauk 5 no.4:23-24 '63.
                                                (MIRA 16:10)

BLESHINSKIY, S.V.; KHARAKOZ, A.Ye.; ABRAMOVA, V.F.; VINOGRADOV, V.P.;
        BABENKO, V.T.; KACHKIMBAYEVA, S.A.; Prinimali uchastiye:
        USUBAKUNOV, M.; NAGAYEVA, A.G.; GORBUNOV, V.D.; MEDVEDEVA,
        V.A.; CHALOVA, Ye.P.; ALTYNNIKOVA, P.M.

        Method for separating rare-earth elements based on the thermal
        dissociation of sulfates. Izv. AN Kir. SSR. Ser. est. i tekh.
        nauk 5 no.4:25-26 '63.   (MIRA 16:10)

BLESHINSKIY, S.V.; NAGAYEVA, A.G.; ABRAMOVA, V.F.

Thiocyanatomercurate-radiometric method for determining zinc.
Izv. AN Kir. SSR. Ser. est. i tekh. nauk 5 no.4:27-33 '63.
(MIRA 16:10)

ACC NR: AT7001350   SOURCE CODE: UR/0000/66/c : 000/0096/0116

AUTHOR: Bloshinskiy, S. V.; Nagayeva, A. G.

ORG: none

TITLE: Rapid volumetric method of quantitative determination of uranium

SOURCE: AN KirgSSR. Institut neorganicheskoy i fizicheskoy khimii. Issledovaniya
po khimii redkikh i soputstvuyushchikh im elementov (Studies in chemistry of rare and
other accompanying elements). Frunze, Izd-vo Ilim, 1966, 96-116

TOPIC TAGS: uranium, volumetric analysis

ABSTRACT: The obje . . . the work was to develop a simple, indirect, volumetric
method for the qu. .itative determination of uranium in concentrates which does not
involve cumbersom operations of separation of interfering elements. It was found
that uranium, the form of an ammonium salt or vanadate reacts quantitatively with
hydrogen per ide to form the compound UO_4 which, when decomposed with acid, yields
hydrogen peroxide, which can be quantitatively backtitrated. Chromatographic analysis
of a mixture of peroxy compounds of U, V and NH_4 on strongly basic aluminum sulfate
salts produces zones in the following order: U, NH_4, V. At a sufficiently high ammo-
nium ion concentration, vanadium is not retained on the adsorbent. Since ammonium ion
does not displace uranium from the adsorbent, vanadium can be quantitatively washed
off the uranium. The behavior of molybdenum is similar to that of vanadium. When

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ACC NR: AT7001350

uranium ores are fused with sodium carbonate, and the melt is leached with ammonium bicarbonate solution, uranium passes into the soluble state quantitatively. This permits the separation of uranium from titanium, iron, and other elements. In the presence of ammonium sulfide, extraction with ammonium carbonate separates uranium from copper and zinc. A simple peroxide-permanganate method of quantitative determination of uranium is proposed in three variants: (1) determination of uranium in the absence and (2) presence of titanium, and (3) quantitative volumetric determination of uranium with separation of interfering elements. In all three cases, the method is simple and does not require the use of expensive reagents. Orig. art. has: 3 tables and 3 formulas.

SUB CODE: 07/ SUBM DATE: 15Apr66/ ORIG REF: 011/ OTH REF: 004

Card 2/2

ZHINKIN, D.Ya.; NAGAYEVA, A.P.; TARDOV, B.N.

New polysiloxane lacquer based on the cohydrolysis of ethylphenyl-
dichlorosilane and phenyltrichlorosilane. Lakokras.mat. i ikh prim.
no.4:17-20 '60.   (MIRA 13:10)
    (Lacquer and lacquering) (Siloxane) (Silane)

S/196/62/000/005/005/012
E194/E154

AUTHORS: Nagayeva, A.P., Zhinkin, D.Ya., and Borisov, M.F.

TITLE: Insulating varnish grade KM-17 (KM-17) and its
             application

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika,
             no.5, 1962, 10, abstract 5 B87. (Lakokrasochn.
             materialy i ikh primeneniye, no.5, 1961, 58-60).

TEXT: The characteristics of films of insulating varnish
grade KM-17 are given: it is a solution of polymethyl-phenyl-
siloxane polymer (50%) in toluol.   It is shown that this varnish
can be used for impregnating and coating oxidized aluminium
products operating in the temperature range of -60 to +350 °C and
also for binding and impregnating fibreglass insulation on
oxidized conductors operating at a temperature of 350 °C.   The
insulating properties of films deposited on a base of oxidized
foil at various temperatures are given in Table 1;   after thermal
ageing in Table 2;   at low temperatures in Table 3;   after
holding at a relative humidity of 95-98% in Table 4;   (ε and tan δ
were measured at 10^6 c/s).   The changes in the breakdown voltage

Card 1/2

Insulating varnish grade KM-17 ...

S/196/62/000/005/005/012
E194/E154

U during the process of ageing at 350 °C for wires 0.9 mm in diameter, made of various materials and covered with fibreglass insulation impregnated with varnish KM-17, are shown on the graph. The following notation is used on the graph: 1 - copper wire wound after ageing; 2 - same before ageing; 3 - oxidized aluminium wire wound after ageing; 4 - same before ageing. The great advantage of oxidized aluminium wires compared with copper will be noticed.   4 literature references.

Abstractor's note: Complete translation.

Card 2/6

KARASEV, K.I., kand. khim. nauk; SAVYZEVA, A.I., inzh.

Alkyd coatings industrial paints. Lakokras. material s i . . .
no.15:1-6 '62.

NAGAYEVA, E.

30196

Isslyedovatyel' zyemnykh glubin. (O trudakh akad. V. A. Obruchyeva) Oronyekh, 1948, No. 40, s. 15, s. por'r

SO. LETOPIS' NO. 34

ZHUZE, A.P.; KOROLEVA, G.S.; NAGAYEVA, G.A.

Diatoms in the surface layer of bottom sediments of the Indian
Ocean part of the Antarctic. Trudy Inst. okean. 61:19-92 '62.
(MIRA 16:9)

NAGAYEVA, L.

Tumorous formations in Syrian hamsters after the introduction of
rabbit papilloma virus. Izv.AN Latv.SSR no.7:109-114 '63.
(MIRA 17:4)

1. Institut mikrobiologii AN LatvSSR.

KUKAYN, R. [Kukaine, R.]; INDULEN, M. [Induléna, M.]; KANEL', I. [Kanele, I.];
KONDRASHOVA, M.; KALNINYA, B. [Kalnina, V.]; VOLRAT, A. [Volrate, A.];
FELDMAN, G. [Feldmane, G.]; NAGAYEVA, L.; PAVLOVA, M.; POPOVA, V.

Characteristics of the tuberculin tests in children inocculated
during early infancy with peroral BCG vaccine and live poliomyelitis
vaccine. Vestis Latv ak no.7:115-117 '62.

1. Institut mikrobiologii AN Latviyskoy SSR.

SHEYNBERG, S.I.,; KOZINA, M.G.,; NAGAYEVA, L.I.,; EFROS, G.A.

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