KHARAZISHVILI, K.V.

Injuriousness of Cicadetta montana Scop. to the woody plants in Georgia. Soob. AN Gruz. SSR 31 no.1:149-154 Jl '63. (MIRA 17:7)

SUPATASHVILI, Sh.M.; KHARAZISHVILI, K.V.

Study of gallflies (Hymenoptera, Cynipidae) in the oak forests of Georgia. Soob. AN Gruz. SSR 35 no.3:675-680 S '64.
(MIRA 17:11)

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Защ. 1937, 5. 6.

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Защ. 1937, 9. 10.

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Защ. 1939, 23.6.

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Защ. 1938, 17.5.

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Защ. 1940, 22.4.

729. Харазов Давид Фомич. Некоторые вопросы теории аналитических дифференциальных уравнений. 1942. 59 с.

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Защ. 1949, 23.6.

731. Цхадекон Мильтиад Исаакиевич. Основные граничные задачи теории установившихся упругих колебаний для областей с угловыми точками и для поверхностей с угловыми линиями. 1954. 75 с.

Защ. 1954, 29.6.

Dissertation for degree of

Candidate Mathematical Sciences

Def. at

Tbilisi State U.

KHARAZOV, D.F.

Some properties of eigenfunctions and resolvents of integral equations with rational kernels relative to the parameter. Soob. AN Gruz.SSR 8 no.4:205-210 '47. (MIRA 9:7)

1.Akademiya nauk Gruzinskoy SSR, Tbilisskiy matematicheskiy institut imeni A.M.Razmadze. Predstavleno deystvitel'nym chlenom Akademii I.N.Vekua.
(Integral equations) (Eigenfunctions)

KHARAZOV, D.F.

Linear integral equations whose kernel is the polynomial of the second degree relative to the parameter. Soob.AN Gruz.SSR 8 no.5: 275-281 '47. (MLRA 9:7)

1.Akademiya nauk Gruzinskoy SSR, Tbilisskiy matematicheskiy institut imeni A.M.Razmadze i Tbilisskiy gosudarstvennyy universitet imeni Stalina. Predstavleno deystvitel'nym chlenom Akademii I.N.Vekua.
(Integral equations)

Vol XIV No 2, Feb 1953 pp 121-232

Harazov, D. F. On the theory of linear integral equations with kernels polynomial in a parameter. Soobščeniya Akad. Nauk Gruzin. SSR. 9, 91–98 (1948). (Russian)

The author studies the equation

$$(1) \qquad u(x)-\int_a^b G(x, y; \lambda)u(y)dy = f(x),$$

where (2) $G=\sum_0^\infty \lambda^n G_n(x, y)$, the $G_n(x, y)$ are real and in $L_2(S)$ $[S=(a\leqq x, y\leqq b)]$, f is real and in $L_2(a, b)$. Hypothesis (G) consists of the conditions: (a) the G_n are orthogonal on S in the sense of the author's paper reviewed second above, referred to as (H); (b) $\int\int G_0(x, y)\phi(x)\phi(y)dxdy<1$ when $\|\phi\|=1$. The present work constitutes a continuation of (H). If G ε (G) and λ is not a c.v. (characteristic value), then the resolvent of G is meromorphic in λ and is of the form $R(x, y; \lambda)=\sum_0^\infty \lambda^n R_n(x, y; \lambda^n)$, where $R_n(x, y; \mu)$ is the resolvent of G_n. If $K(x, y)$ is symmetric and is in $L_2(S)$, its resolvent Γ is represented by a series [in terms of c.v.'s λ_r and orthonormalized c.f.'s (characteristic functions) ϕ_r], which converges a.e. (almost everywhere) on S to Γ and also converges in the mean square. If G ε (G), λ is not a c.v. of G and the G_n are symmetric, then the resolvent R of G is representable a.e. by a series in terms of G and of the c.v.'s $\lambda_j^{(n)}$ and the orthonormalized c.f.'s $u_j^{(n)}(x)$ of the G_n; this series also converges in the mean square; in this case every c.v. of G is a simple pole of R. If G ε (G), the G_n are symmetric and λ is not a c.v. of G, then the solution of (1) is given by $u(x)=f(x)+\sum_{k=0}^\infty \lambda^k u_k(x)$, where $u_0(x)=\sum_i(\lambda_i^{(k)}-\lambda^k)^{-1}f_i^{(k)}u_i^{(k)}(x)$, $f_i^{(k)}=\int_a^b f u_i^{(k)}dx$, convergence to $u(x)$ taking place a.e.; convergence is also in the mean square. There is also an analogue to the third theorem of Fredholm. *W. J. Trjitsinsky* (Urbana, Ill.).

Vol XII No 2, Feb 1953 pp 121-

Harazov, D. F. On linear integral equations with generalized Schmidt kernels. Akad. Nauk Gruzin. SSR. Trudy Tbiliss. Mat. Inst. Razmadze 16, 143–167 (1948). (Russian. Georgian summary)

The author studies the system

$$(1)\qquad u(x)=\int_a^b[K_0(x,y)+\lambda K_1(x,y)]v(y)dy,$$

$$v(x)=\int_a^b[K_0(y,x)+\lambda K_1(y,x)]u(y)dy,$$

where K_0, K_1 are real in $L_2(S)$, $S=E[x,y|a\leqq x,y\leqq b]$. For $K_0(x,y)\equiv 0$, (1) becomes (1_0), which is a system considered by E. Schmidt. One obtains

$$(2)\qquad u(x)=\int_a^b[\bar{G}_0(x,t)+\lambda\bar{G}_1+\lambda^2\bar{G}_2]u(t)dt,$$

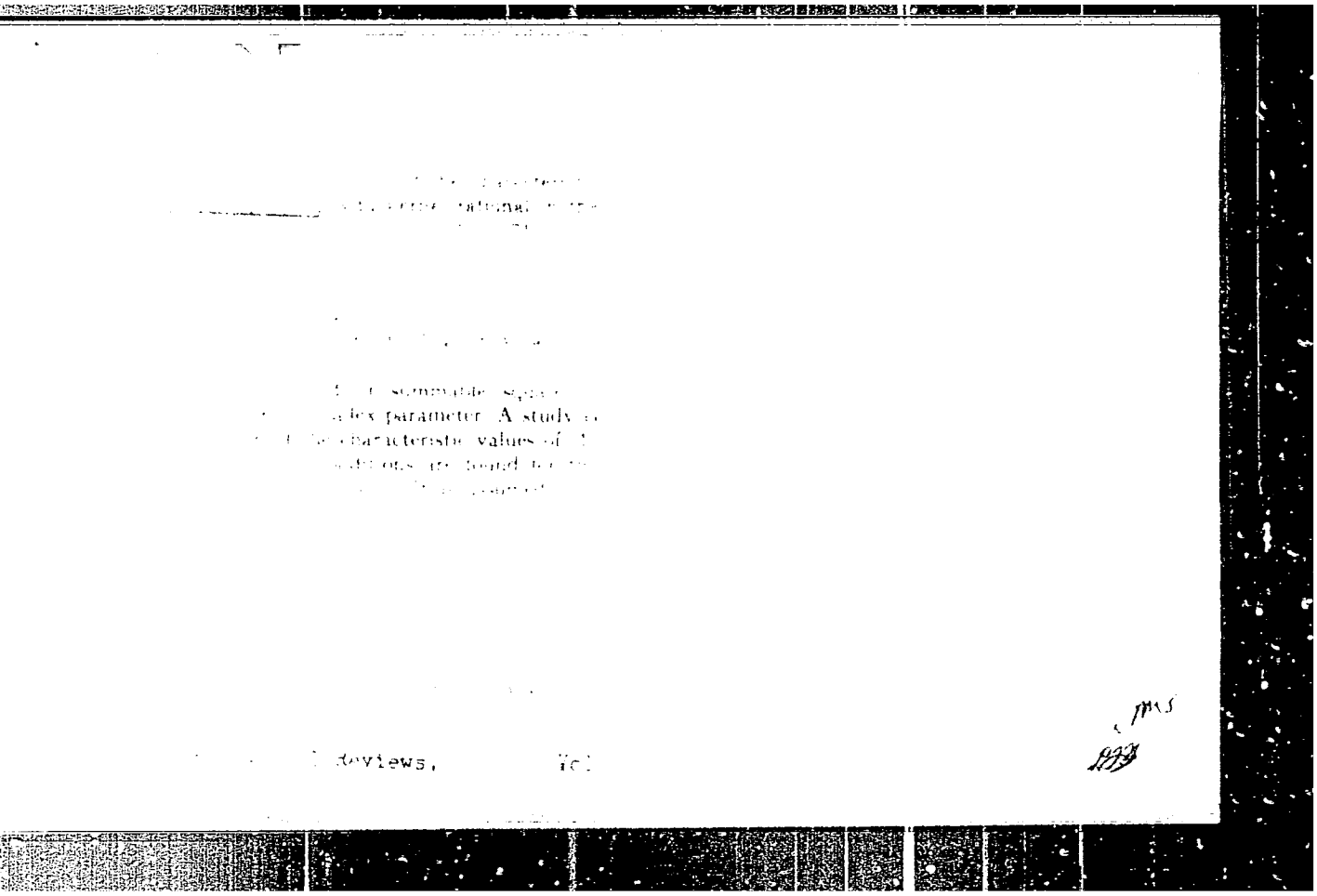
$$(3)\qquad v(x)=\int_a^b[\underline{G}_0(x,t)+\lambda\underline{G}_1+\lambda^2\underline{G}_2]v(t)dt,$$

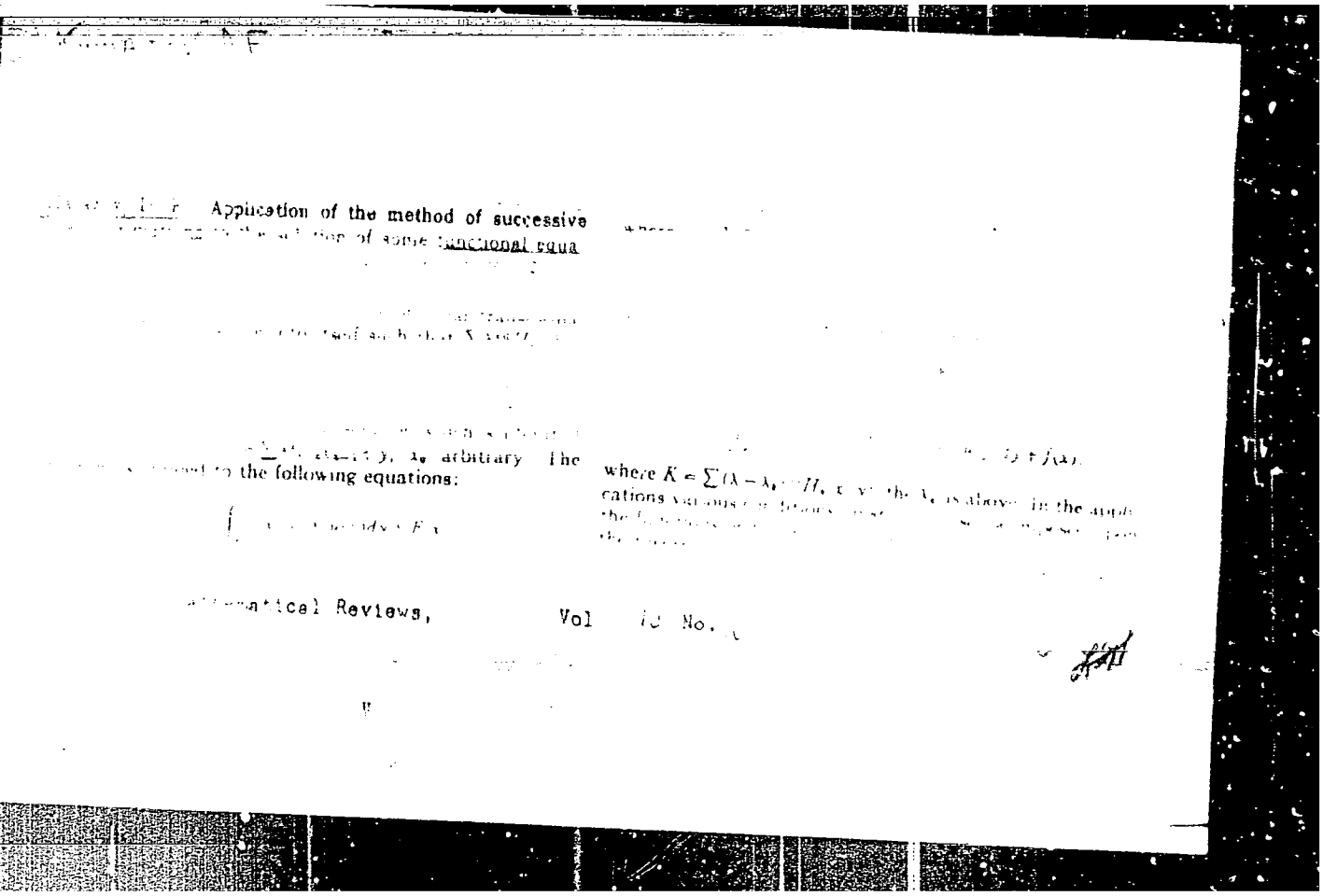
where the $\bar{G}_i$, $\underline{G}_i$ are symmetric and are in $L_2(S)$. The c.v.'s (characteristic values) of (2), (3) are identical. If λ^* is a c.v. of (2) and $\varphi^*(x)$ is a corresponding c.f. (characteristic function), then λ^* is a c.v. of (1) and $\varphi^*(x)$ and

$$\psi^*(x)=\int[K_0(t_1,x)+\lambda^*K_1(t_1,x)]\varphi^*(t_1)dt_1$$

satisfy (1) for $\lambda=\lambda^*$. If (4) $\int[\int K_0(x,y)\varphi(x)dx]^2dy<1$ when $\|\varphi\|=1$, then (1) has at least one c.v., all c.v.'s are real and have no finite limit points. If $K_0(x,y)$, $K_1(x,y)$ are orthogonal on S in the sense of Goursat and (4) holds, then (1) is equivalent to (1_0). The author proceeds to determine the c.v.'s and c.f.'s following the lines of Goursat [Cours d'analyse, t. III, 3ième ed., Gauthier-Villars, Paris, 1921] and Courant [Math. Ann. 89, 161–178 (1923)], employing sequences of degenerate kernels. In the course of such developments certain sequences $(\lambda_i^{(m)})$ of c.v.'s are obtained; conditions on these sequences are then found, under which an effective construction of the total spectrum of c.v.'s of (2) is possible.

W. J. Trjitzinsky (Urbana, Ill.).





Application of the method of successive

of some functional equa

λ_ν arbitrary. The

to the following equations:

where $K = \sum(\lambda - \lambda_\nu)$

cations

Mathematical Reviews, Vol No.

KHARAZOV, D.F.

Harazov, D. F. Application of integral equations with kernels depending upon a parameter to some boundary problems in the theory of differential equations. Akad. Nauk Gruzin. SSR. Trudy Mat. Inst. Razmadze 18, 265–306 (1951). (Russian. Georgian summary)

The author shows that a number of important self-adjoint ordinary differential and partial differential boundary problems (D) $\{L(u)=Q_m(x;\lambda)u-f(x)$ plus a boundary condition$\}$ are equivalent to an integral equation of the form

$$(1)\quad u(x)=\int_T G(x,y)Q_m(y;\lambda)u(y)dy-\int_T G(x,y)f(y)dy,$$

where $Q_m(y;\lambda)=r_1(y)\lambda+\cdots+r_m(y)\lambda^m$. Here $\phi(x)=\phi(x_1,x_2)$ in the case of a plane; double integration over a domain T is denoted by $\int_T$ and a quadruple integral over a domain T^2 of the 4-space $((x_1,x_2,y_1,y_2)=(x,y)\in T^2$ if $x\in T$ and $y\in T)$ by $\int\int_{T^2}$; T is a segment $[a,b]$ when (1) arises from an ordinary differential equation. Domains T are assumed to possess suitably regular boundaries; the coefficients involved are continuously differentiable up to a certain order (and some of them satisfy Hölder conditions) in the closure of T.

Here $G(x,y)$ is an appropriate Green's function. The conditions are such that the kernel is of integrable square in T^2; it is symmetric, positive-definite. The homogeneous problems (D) lead to $(1;f=0)$. The spectra of homogeneous problems (D) coincide with the spectra of the corresponding problems $(1;f=0)$, and the study of problems (D) is reduced to the study of characteristic functions of $(1;f=0)$ and the solutions of (1). This is a quite substantial piece of work, containing many results, which space does not permit to state here. It will suffice to say that the motif of the work is as indicated above; on the other hand, the hypotheses are such that the integral equation theory, brought into play, is essentially on the level of the classical Hilbert-Schmitt theory.

W. J. Trjitzinsky (Urbana, Ill.).

SO: MATHEMATICAL REVIEWS Vol XIV No 8, September 1953, pp 713-830

KHARAZOV, D.F.

Theory of linear equations in Banach spaces. Trudy Tbil.mat.inst. 19:163-171 '53. (MLRA 7:8)
(Spaces, Generalized) (Linear equations)

KHARAZOV, D.F.

Solution of boundary value problem for certain classes of elliptic equations with coefficients depending on the parameter. Trudy Tbil. mat.inst. 19:173-191 '53. (MLRA 7:8)
(Differential equations, Partial) (Integral equations)

KHARAZOV, D. F.

1/2

Harazov, D. F. On a class of linear equations with symmetrizable operators. Doklady Akad. Nauk SSSR (N.S.) 91, 1023–1026 (1953). (Russian)

The author considers equations of the form

(1) $$(E-\lambda A_1-\lambda^2 A_2)x=y,$$

where A_1 and A_2 are linear operators of finite norm in a complex Hilbert space and E is the identical operator; A_1 and A_2 are assumed symmetrizable, in the sense that there exists a positive definite operator H of finite norm such that $P_1=HA_1$ and $P_2=HA_2$ are Hermitian. He shows that, if A_2 has only positive characteristic values, then all the characteristic values of the associated homogeneous equation

(2) $$(E-\lambda A_1-\lambda^2 A_2)x=0$$

of (1) are real; and that if x_1 and x_2 are characteristic vectors of (2) belonging to distinct characteristic values λ_1 and λ_2, then they satisfy the orthogonality relation

$$(Hx_1, x_2)+\lambda_1\lambda_2(P_2x_1, x_2)=0.$$

HARAZOV, D. F.

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A full orthogonal system of characteristic vectors is constructed, and expansion theorems for $P_1 f$ and $P_2 f$, where f is an arbitrary vector, are given in terms of weak convergence. If λ is not a characteristic value of (2), the solution x of (1) can be obtained from the expansion

$$H(x-y)=\lambda\sum_{r=1}^{\infty}\frac{(y,Hx_r)}{\lambda_r-\lambda}Hx_r,$$

which is weakly convergent. Conditions are obtained for these expansions to be strongly convergent in various norms. *F. Smithies* (Cambridge, England).

Harazov, D. F. On the th
with polynomial

The author considers equations of the form

$$x - \sum_{k=1}^{m} \lambda^k A_k x = 0 \tag{1}$$

where the A_k are compact linear operators on a complex Hilbert space, symmetrizable in the sense
compact positive definite
the operators
are proved. If A_k
and if m is even A_k
value of (1). If
characteristic values
has no positive
have only positive
characteristic values

$$0 < \arg \lambda \leq \frac{\pi}{m-1} \qquad \frac{\pi}{m}$$

these ranges are best possible. Additional results are given for the special case $m = 2$.

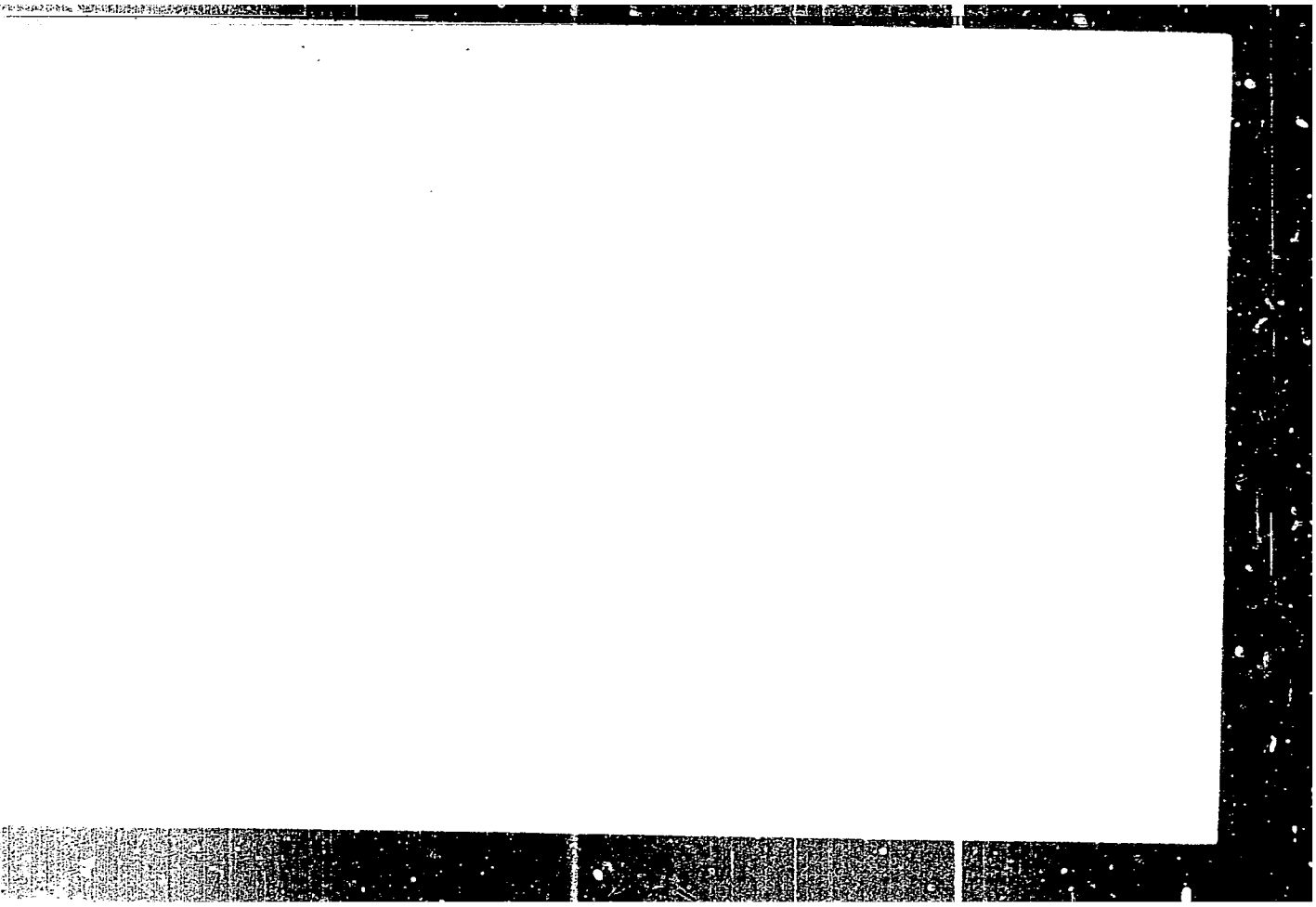
F. Smithies.

KHARAZOV, D.F.

Generalization of the Kantorowicz method for solutions of functional equations. Trudy Tbil.mat.inst. 20:279-296 '54. (Functional equations) (MLRA 8:8)

KHARAZOV, D.F.

Theory of polynomial parameter dependence of operators in Hilbert space. Trudy Tbil.mat.inst. 20:297-315 '54.
(Spaces, Generalized) (MLRA 8:8)



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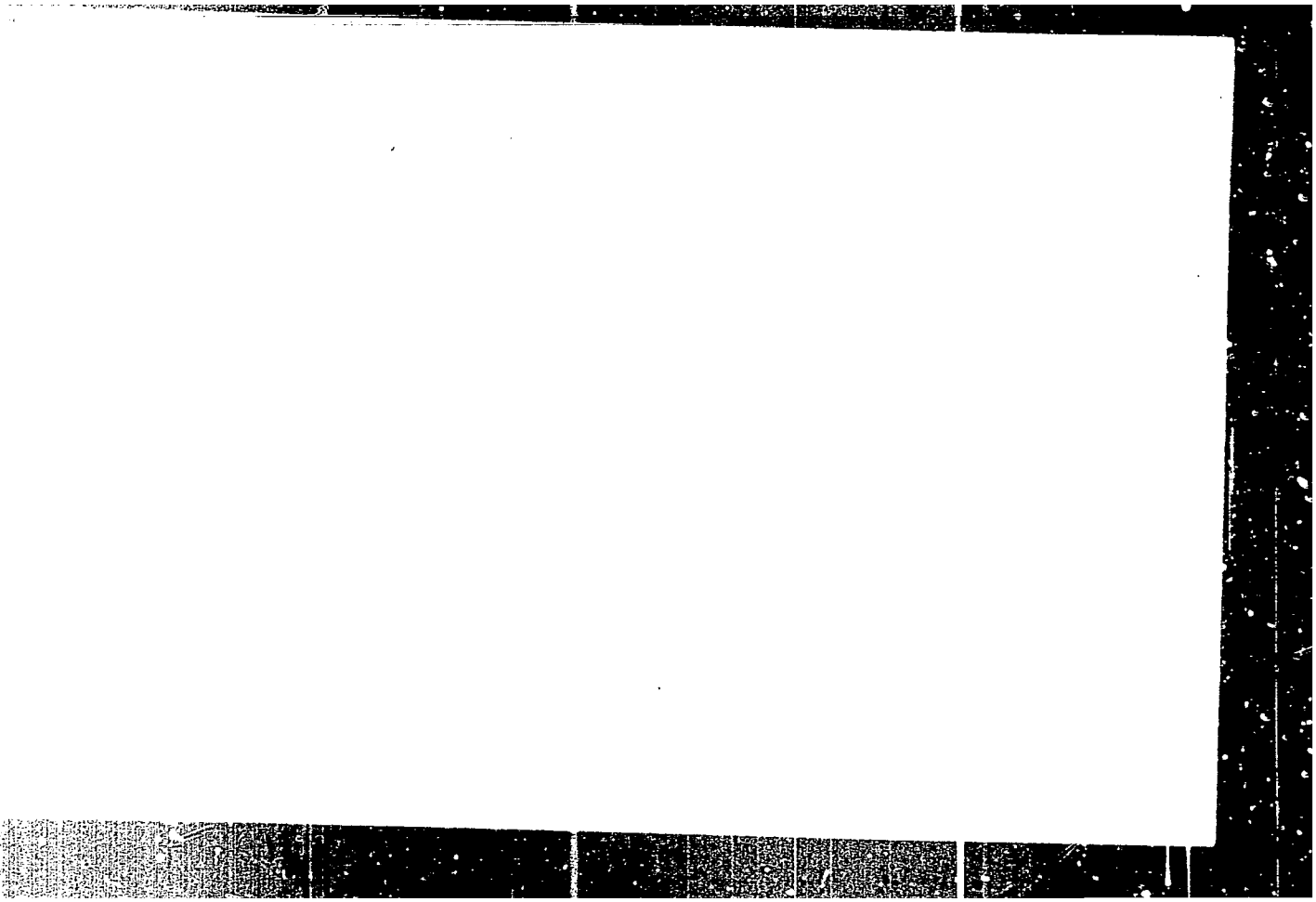

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USSR/Mathematics - Boundary value

Card 1/1 Pub. 22 - 6/52

Authors : Kharazov, D. F.

Title : About the boundary value problems in the theory of ordinary differential equations.

Periodical : Dok. AN SSSR 100/2, 217-220, Jan 11, 1955

Abstract : Proof is given for a series of theorems dealing with the boundary value problem of equations of the following type: $F(y) = G(y,\lambda) - f(x)$ The meaning of the symbols is given. Solutions for the equation are sought. Conditions under which the solutions may exist are analyzed. Three USSR references (1939-1953), one German reference (1940).

Institution: A. M. Ramadze Mathematical Institute of the Acad. of Scs. of the Grus. SSR, at Tbilisi

Presented by: Academician A. N. Kolmogorov, November 3, 1954

USSR/ Mathematics - Elliptical equations

Card 1/1 Pub. 22 - 5/54

Authors : Kharazov, D. F.

Title : Regarding the investigations of the boundary problems for elliptical differential equations

Periodical : Dok. AN SSSR 100/3, 421-424, Jan. 21, 1955

Abstract : Conditions for solutions of the boundary problems given in the form of elliptical differential equations, of the type, $A(u) + L(u,\lambda) = f(x,y)$, are analyzed. The analysis is done on the basis of the theory of symmetrized operations $(A(u) \pm L(u,\lambda))$. The theory is outlined in an earlier work of the author. Three references: 2 USSR and 1 French (1915-1953).

Institution : Acad. of Scs., Geor. SSR. Tbilisi A. M. Razmadze, Mechanical Institute

Presented by: Academician A. N. Kolmogorov, November 3, 1954

USSR/ Mathematics - Spectral functions

Card 1/1 Pub. 22 - 9/53

Authors : Kharazov, D. F.

Title : About the spectral expansions of certain linear operators

Periodical : Dok. AN SSSR 102/4, 693-696, Jun 1, 1955

Abstract : A Hilbertian space is considered and the expansion of spectral functions in it is studied. A proof of a series of theorems dealing with the convergence of these functions is presented. The results of the author's previous work were used for the proof. Four references 3 USSR, 1 English (1951-1954).

Institution : The Acad. of Sc. of Georg. SSR, A. M. Razmadze Mathematical Institute, Tbilisi

Presented by : Academician A. N. Kolmogorov, February 16, 1954

KHARAZOV, D. F.

Call Nr: AF 1108825

Transactions of the Third All-union Mathematical Congress (Cont.) Moscow, Jun-Jul '56, Trudy '56, V. 1, Sect. Rpts., Izdatel'stvo AN SSSR, Moscow, 1956, 237 pp.

Povolotskiy, A. I. (Leningrad). On the Structure of Spectrum of Nonlinear Equation. 118-119

Polyatskiy, V. T. (Odessa). Reduction of Quasiunitary Operators to Triangular Forms. 119-120

Mention is made of Livshits, M. S.

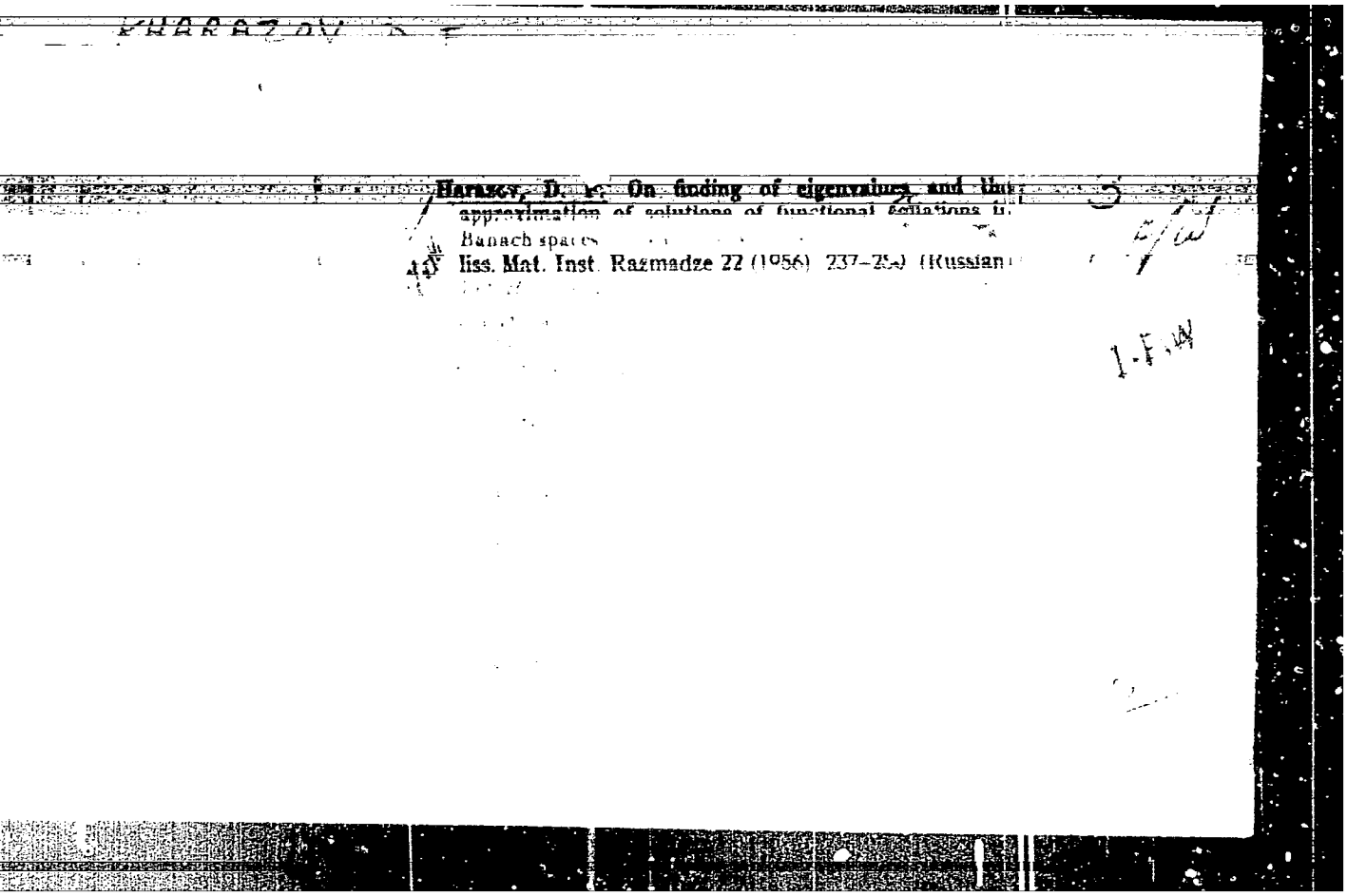
Sakhnovich, L. A. (Odessa). On the Reduction of Non-self-conjugate Operators to Diagonal Form. 120-122

Mention is made of Keldysh, M. V., Tamarkin, Ya. D. and Naymark, M. A.

There are 6 references, 5 of which are USSR, and 1 is English.

Kharazov, D. F. (Tbilisi). Linear Equations With Completely Continuous Operators, Which are Polynomially Dependent on Parameters. 122

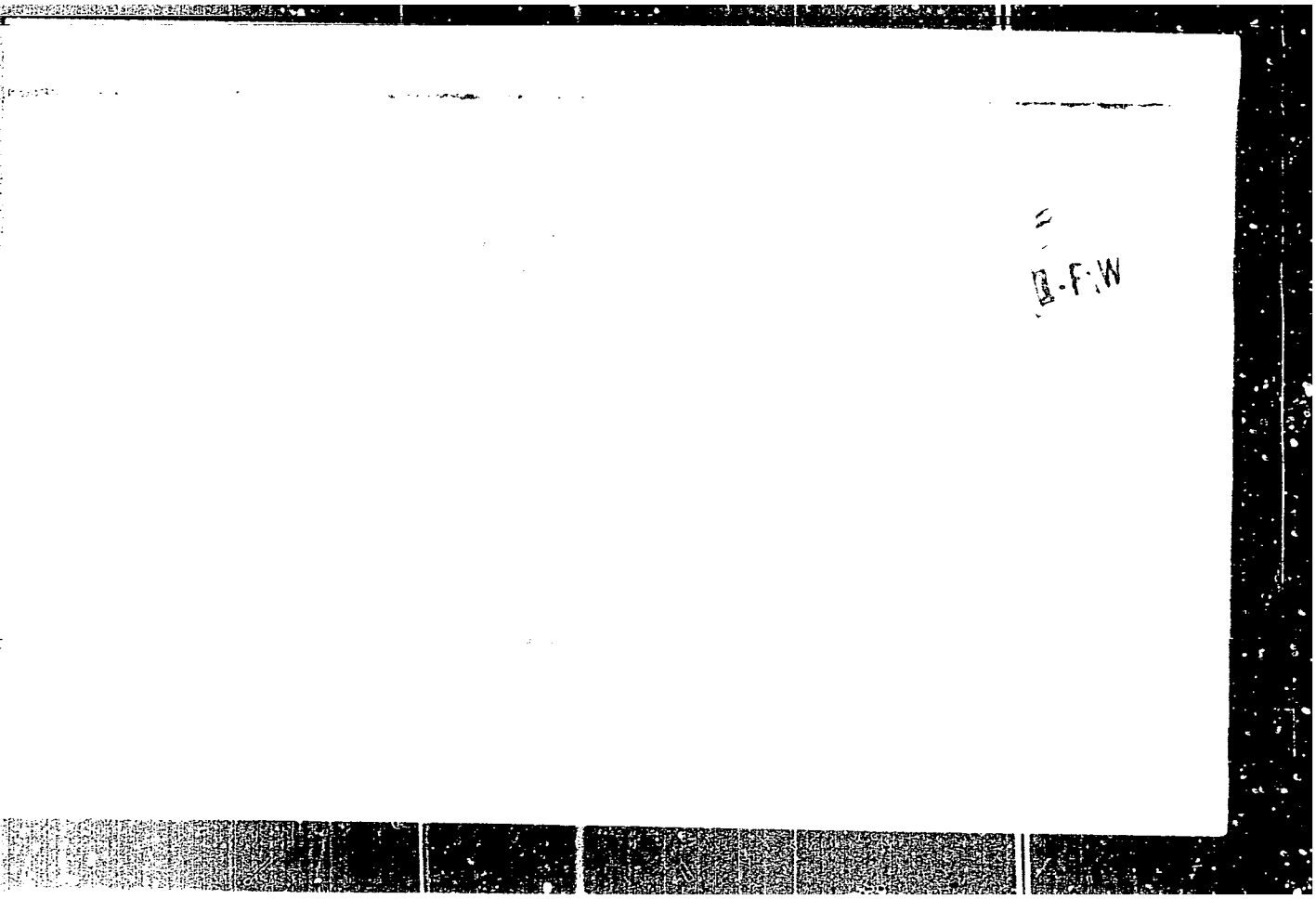
Card 38/80



KHARAZOV, D. V.

Harazov, D. V. On finding of eigenvalues and the approximation of solutions of functional equations in Banach spaces

Soobsc. Akad. Nauk Gruzin. SSR 22 (1956), 237–244. (Russian)



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KHARAZOV, D.F. KHARAZOV, D.F.

SUBJECT USSR/MATHEMATICS/Functional analysis CARD 1/2 PG - 633
AUTHOR CHARAZOV D.F.
TITLE On the spectral theory of completely continuous operators.
PERIODICAL Doklady Akad.Nauk 111, 544-546 (1956)
reviewed 3/1957

The author considers the equation

$$(E - \lambda A_1 - \lambda^2 A_2)x = y \qquad x \in X,\ y \in X,$$

where λ is a complex parameter, X is a Hilbert space, A_1 and A_2 are linear completely continuous operators which map X into themselves. Let besides exist a linear positive bounded operator H which maps X into itself and satisfies the condition

(1) $$(HA_i x, y) = (x, HA_i y) \qquad i=1,2 \qquad (HA_2 x, x) \geq 0$$

for arbitrary $x \in X$, $y \in X$. Then the equation

(2) $$(E - \lambda A_1 - \lambda^2 A_2)x = 0$$

has only real eigenvalues $\lambda_1, \lambda_2, \ldots, \lambda_n, \ldots$ and the sequence of the corresponding eigenelements can be chosen such that

(3) $$(Hx_i, x_k) + \lambda_i \lambda_k (HA_2 x_i, x_k) = \delta_{ik} \qquad (i,k=1,2,\ldots).$$

The following theorems are proved:
1. If the operators HA_1 and HA_2 are not simultaneously zero-operators, then

Doklady Akad.Nauk 111, 544-546 (1956) CARD 2/2 PG - 633

the equation (2) has the eigenvalues $|\lambda_1| \leq |\lambda_2| \leq \ldots \leq |\lambda_n| \leq \ldots$ (to which there correspond the eigenelements $x_1, x_2, \ldots, x_n$ which are normalized by (3)), which have the following extremal property: On the set of elements $x \in X$ and $y \in X$ which satisfy the condition

$$(Hx,x)+(HA_2 y, y) = 1 \qquad (Hx_k, x) + \lambda_k (HA_2 x_k, y) = 0 \qquad k=1,2,\ldots,n-1,$$

the absolute value of the functional $\Phi(x,y) = (HA_1 x, x) + (HA_2 x, y) + (y, HA_2 x)$ reaches its maximal amount

$$\max |\Phi(x,y)| = \frac{1}{|\lambda_n|} \qquad (n=1,2,\ldots)$$

for $x = x_n$, $y = \lambda_n x_n$. This set of eigenvalues scoops the spectrum of (2) and if it is infinite, then $\lim_{n \to \infty} |\lambda_n| = +\infty$.

2. If is no eigenvalue of (2), then the H-image of the single solution of

$$(E - \lambda A_1 - \lambda^2 A_2)x = y \qquad x \in X,\ y \in X$$

has the form

$$Hx = Hy + \lambda \sum_{k=1}^{\infty} \frac{(y, Hx_k)}{\lambda_k - \lambda} Hx_k$$

and the series at the right side converges in X with respect to the norm.

INSTITUTION: Math.Inst.Acad.Sci.grus.SSR, Tbilisi.

KHARAZOV, D.F.

Some properties of linear operators warranting the validity of Hilbert-Schmidt's theory. Usp.mat.nauk 12 no.4:201-207 Jl-Ag '57. (MIRA 10:10)
(Operators (Mathematics))

KHARAZOV, D.F.

Method of the fastest descent. Trudy Mat. inst. AN Gruz. SSR 24: 111-123 '57. (MIRA 11:3)
(Functional analysis) (Differential equations)

AUTHOR: Kharazov, D.F. (Tbilisi)

59-2-1/6

TITLE: Some Questions in the Theory of Linear Symmetrisable Operators. (Nekotorye voprosy teorii lineynykh simmetrizuyemykh operatorov)

PERIODICAL: Matematicheskiy Sbornik, 1957, Vol.42(84), No.2, pp. 129 - 178 (USSR)

ABSTRACT: A number of problems in mechanics lead to the study of boundary problems for differential equations with coefficients which depend on a parameter in a non-linear manner. It is shown that such problems lead to the investigation of linear equations with symmetrisable operators depending again on a parameter in a non-linear manner. Let X be a Hilbert space (separable and, in general, complex). The operator A transforming X into itself is called symmetrisable if there is a positive operator H transforming X into itself and such that P = HA is a self-conjugate (Hermitian operator). Linear equations of the form:

$$x - \lambda Ax = y, \quad x \in X, \quad y \in X \quad (\lambda \text{ - parameter})$$

with symmetrisable and fully-continuous operator A were studied by A. Zaanen [Ref.7] and W. Reid [Ref.8]. The results

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obtained were given in a monograph by A. Zaanen [Ref. 9]. In the present work are discussed linear equations of the form:

$$x - A_0x - \lambda A_1x - \lambda^2 A_2x = y, \quad x \in X, \quad y \in X, \qquad (1)$$

where A_0, A_1, A_2 are symmetrisable operators and λ is a complex parameter. For such equations, in the case when A_0 is a fully-continuous operator, and A_1, A_2 are operators with a finite, absolute norm satisfying certain conditions (see below), there is developed a spectral theory generalising the classical Hilbert-Schmidt theory. The equation:

$$x - \sum_{k=0}^{m} \lambda^k A x = 0, \quad x \in X$$

is studied where A_k ($k = 0, 1, 2, \ldots m$) and a set of their eigenvalues is also studied. In the second part of the article, the results are applied to the investigation of certain boundary problems and the theory of ordinary and partial differential

 equations. Consider eq. (1), where A_0 is a fully-continuous

Some Questions in the Theory of Linear Symmetrisable Operators.

linear operator and A_1, A_2 are linear operators with finite, absolute norm satisfying the conditions: 1) These operators are symmetrisable by a fully-continuous, strongly-positive operator H (in other words, $\Gamma_i = HA_i$ $(i = 0, 1, 2)$ are self-conjugate operators). 2) The operator A_2 can have only positive eigen-values. 3) The operator A_0 has no positive eigen-values $\leqslant 1$. It is shown that under these conditions, eq. (1) leads to a simpler equation in which $A_0 = 0$,

$$x - \lambda A_1 x - \lambda^2 A_2 x = y, \quad x \in X, \quad y \in X \qquad (2)$$

in which operators A_1 and A_2 with finite, absolute norm satisfy conditions 1) and 2). The case when condition 2) is not satisfied is also investigated.
There are 18 references, of which 11 are Slavic.

ASSOCIATION: Tbilisi Institute of Mathematics imeni A.M. Razmadze Academy of Sciences Gruzinskaya SSR. (Tiblisskiy Matemat-

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CHARAZOV, D.F.

SUBJECT USSR/MATHEMATICS/Functional analysis CARD 1/2 PG - 870
AUTHOR CHARAZOV D.F.
TITLE On a class of operators which depend non-linearly on a parameter.
PERIODICAL Doklady Akad Nauk 112, 819-822 (1957)
reviewed 6/1957

In the Hilbert space X let be defined the selfadjoint operators

$$H_i x = \sum_{k=1}^{\sigma_i} \frac{(x, \varphi_k^{(i)})\,\varphi_k^{(i)}}{\varkappa_k^{(i)}} \qquad i=1,2,\ldots.$$

Here the $\varkappa_k^{(i)}$ are real numbers, $\{\varphi_k^{(i)}\}$ an orthonormalized system of elements of X. Let the absolute norms $N(H_i)$ and traces $Sp(H_i)$ be uniformly bounded. Let $\{a_i\}$ be a sequence of real numbers, $\sum_{i=1}^{\infty} \frac{1}{|a_i|} < +\infty$, $\alpha_i \varkappa_k^{(i)} < 0$ $(i=1,2,\ldots;$ $k=1,\ldots,\sigma_i)$ and A_0 a linear, completely continuous, selfadjoint operator, where $(A_0 x, x) < (x,x)$ for all $x \in X$, $x \neq 0$. Let A_1 be a linear selfadjoint

Doklady Akad Nauk 112, RELEASE: 09/17/2001 CARD 2/2 CIA-RDP86-00513R000721810008 PG - 870

operator with a finite absolute norm. The author considers the equation

(1) $$A_\lambda x \equiv x - A_0 x - \lambda\left\{A_1 x + \lambda \sum_{i=1}^{\infty} \frac{1}{\lambda - a_i} H_i x\right\} = y \quad , \quad x \in X,\ y \in X$$

and the corresponding homogeneous equation (2). Several theorems on the spectrum and eigenvalues of (2) are given with partially sketched proofs, e.g.:

1. The set of eigenvalues of (2) cannot be condensed in a finite part of the λ-plane.
2. For every $f \in x$ we have

$$A_1 f = \sum \frac{(f, (E - A_0)\varphi_k)}{\lambda_k} (E - A_0)\varphi_k,$$

where the series converges with respect to the norm from the right side.

INSTITUTION: Math.Inst.,Tbilissi, (Acad.Sci.Grusin. SSR).

KHARAZOV, D.F.

Spectral theory of semilimited operators. Trudy Mat.inst. AN Gruz.SSR 26:152-170 '59. (MIRA 13:6)
(Operators (Mathematics))

KHARAZOV, D.F.

Spectral theory of linear, entirely continuous operators quadratically depending on parameters. Trudy Mat.inst.AN Gruz. 26:171-187 '59. (MIRA 13:6)
(Operators(Mathematics))

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S/042/60/015/004/015/017XX
C111/C222

16.4600

AUTHOR: Kharazov, D.F.

TITLE: Some Unbounded Symmetrizable Operators in Hilbert Spaces

PERIODICAL: Uspekhi matematicheskikh nauk, 1960, Vol.15, No.4, pp.177-184

TEXT: Let X be a complex Hilbert space and R a linear subset of X being dense in X. Let the linear operators H, A_1, A_2 defined on R and mapping R into itself, satisfy the conditions: 1) In general, H and A_1 are not bounded; 2) A_2 is bounded on R_2; 3) For all $x,y \in R$ it holds $(HA_ix,y) = (x,HA_iy)$ $(i=1,2)$; $(Hx,x) \geq \gamma_1(x,x)$, $\gamma_1 > 0$; $(HA_2x,x) \geq \gamma_2(x,x)$, $\gamma_2 > 0$;

4) There exists the operator $(I-\lambda A_1-\lambda^2 A_2)^{-1}$ (I - identical operator) and it is bounded on R for all λ with a probable exception of a discrete set of eigenvalues of finite multiplicity of the equation

(1^0) $\quad x-\lambda A_1 x-\lambda^2 A_2 x = 0,$

5) For regular λ-values it holds: $(I-\lambda A_1-\lambda^2 A_2)^{-1} X \subset R$ (or A_1 bounded).

Theorem 1: There exists at least one eigenvalue of (1^0); all eigenvalues

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Some Unbounded Symmetrizable Operators in Hilbert Spaces

of (1^0) are real; eigenelements x_i and x_k corresponding to different eigenvalues λ_i and λ_k, satisfy the condition $(Hx_i,x_k)+\lambda_i\lambda_k(HA_2x_i,x_k) = 0$.
Theorem 2: The set of eigenvalues of (1^0) $|\lambda_1|\leq|\lambda_2|\leq\ldots\leq|\lambda_n|\leq\ldots$ to which there correspond the eigenelements $x_1,x_2,\ldots,x_n$ normed by the conditions $(Hx_i,x_k)+\lambda_i\lambda_k(HA_2x_i,x_k) = \delta_{i,k}$, has the following extremal properties: On the set of the elements $x\in R$, $y\in R$, satisfying the conditions

$$(Hx,x)+(HA_2y,y) = 1,\ (Hx_k,x)+\lambda_k(HA_2x_k,y) = 0\quad (k=1,\ldots,n-1),$$

the absolute value of the functional $\phi(x,y) = (HA_1x+HA_2y,x)+(HA_2x,y)$ reaches its minimum $|\lambda n|^{-1}$ $(n=1,2,\ldots)$ on the element $x = x_n$, $y = \lambda_n x_n$.
Here the eigenvalues determined with this variation method include the whole set of eigenvalues of (1^0); every eigenelement of (1^0) is a finite linear combination of the found eigenelements.
Theorem 3: For arbitrary $x\in R$, $y\in R$ it holds

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$$A_1x = \sum_{k=1}^{\infty}\lambda_k^{-1}(x,Hx_k)x_k,\quad A_2y = \sum_{k=1}^{\infty}(y,HA_2x_k)x_k,$$

$$x = \sum_{k=1}^{\infty}(x,Hx_k)x_k,\quad 0 = \sum_{k=1}^{\infty}\lambda_k(y,HA_2x_k)x_k;$$

The series converge with respect to the norm in X.
Theorem 4: If λ is no eigenvalue of (1^0), then the single solution x of

(1) $\quad x-\lambda A_1x-\lambda^2A_2x = f,\quad x\in R,\ f\in R$

is representable as $x = f+\lambda\sum_{k=1}^{\infty}(\lambda_k-\lambda)^{-1}(f,Hx_k)x_k$, where the series converges with respect to the norm in X.
Theorem 5: The system of eigenelements of (1^0) is complete in X.
The theorems are also valid for somewhat more general equations.
The obtained theorems are applied for solving boundary value problems for the partial differential equation

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Some Unbounded Symmetrizable Operators in Hilbert Spaces

(7) $\Lambda(u)+\lambda L_1(u)+\lambda^2 L_2(u) = f(x,y)$,

where $\Lambda(u)$, $L_i(u)$ are linear, selfadjoint, with the orders $2n$, $2m_i$, $m_i \leq n-1$, $\Lambda(u)$ - elliptic, $f(x,y)$ continuous in the domain T with a simple boundary Γ. The boundary condition reads $U_i(u)\big|_{u\in\Gamma} = 0$, where $U_i(u)$ are linear differential operators of at most $(2n-1)^{st}$ order.
There are 5 Soviet references.

SUBMITTED: January 2, 1959

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29863
S/044/61/000/007/036/055
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11.3400 16,4100

AUTHOR: Kharazov, D.F.

TITLE: On the uniform convergence of series in terms of eigenfunctions of some differential operators

PERIODICAL: Referativnyy zhurnal Matematika, no. 7, 1961, 90, abstract 7 B 436. ("Soobshch. AN Gruz SSR", 1960, 24, No. 3, 257-264)

TEXT: The results of the author's preceding paper (R zh Mat, 1958, 3896) are formulated in a more precise form. He investigates spectral problems for differential operators if the eigennumbers quadratically in the differential expression:

$$F(u) = \lambda G_1(u) + \lambda^2 G_2(u) - f(x) \quad . \qquad (1)$$

Here $F(u)$ and $G_i(u)$ are selfadjoint differential expressions of the order not higher than $2n$ and $(2n - 2)$, respectively. Boundary conditions connect the derivatives up to the $(2n - 1)^{st}$ order at both ends. In the

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On the uniform convergence ...

preceding paper the author proved the existence of a countable set of eigenfunctions and the development of the solution of (1) in terms of these eigenfunctions

$$u(x) = -\int_a^b H(x,y)f(y)dy + \lambda \sum_{k=1}^{\infty} (\lambda_k - \lambda)^{-1} \left(\int_a^b f(t)u_k(t)dt\right) u_j(x)$$

4

where H(x,y) is the Green's function of the operator F for the same boundary conditions. In the present paper it is proved that this series converges uniformly. Analogous results are obtained for elliptic operators in partial derivatives.

[Abstracter's note: Complete translation.]

Card 2/2

S/044/62/000/010/025/042
B166/B102

AUTHOR: Kharazov, D. F.

TITLE: Approximate solution of linear equations in Banach spaces with a basis and Galerkin's method

PERIODICAL: Referativnyy zhurnal. Matematika, no. 10, 1962, 31, abstract 10V150 (Tr. Tbilissk. matem. in-ta. AN GruzSSR, v. 27, 1960, 253 - 263)

TEXT: A method of approximately solving linear operator equations in Banach spaces is set out, based on approximation by finite-dimensional operators. New evaluations of error are found, based on the scheme of L. V. Kantorovich's general approximation method. The finite-dimensional operator method under examination is shown to be identical with Galerkin's method of solving linear equations in Banach spaces with a basis. The rate at which Galerkin approximations converge to the accurate solution was studied. An error evaluation formula for the n-th approximation is derived. The results obtained are extended to linear operators analytically dependent on a parameter, and applications to studying the

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convergence of one approximate method of solving boundary value problems for elliptic differential equations are stated. Bibliography 7 titles.

[Abstracter's note: Complete translation.]

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S/044/62/000/011/033/034
A060/A000

AUTHOR: Kharazov, D.F.

TITLE: On the spectral theory of semibounded operators

PERIODICAL: Referativnyy zhurnal, Matematika, no. 11, 1962, 83, abstract 11B342 (Tr. Tbilissk. matem. in-ta. AN GruzSSR, 1959, v. 26, 153 - 170)

TEXT: Let H be a Hilbert space, X - a linear set dense in H, D_B - a linear set $D_B \supset X$, A and B - linear operators mapping X and D_B, respectively, onto H, with $A(X) \supset B(D_B)$. The author considers the equation $Ax = \lambda Bx$, $x \in X$, (1) where λ is a complex parameter. It is assumed that: 1) A and B are symmetric; 2) $(Ax, x) > 0$ if $x \neq 0$; 3) the spectrum of the operator $A^{-1}B$ contains no points except, perhaps, for eigenvalues of finite multiplicity, the set of which contains no limit points at a finite distance. The author notes that equations of the form (1), where A and B are differential operators have been previously investigated by K. Friedrichs and S.G. Mikhlin using the assumption that A and B are positive definite. With the above-mentioned assumptions the properties of eigenvalues of equation (1) are studied. If the operator A is positive definite,

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On the spectral theory of semibounded operators

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A060/A000

the conditions 1) and 3) are satisfied and the operator B^{-1} exists, then it is proven that for any $f \in X$

$$f = \sum_{k=1}^{\infty} (f, Ax_k)\, x_k ,$$

where the x_k are the characteristic elements of the equation $Ax = \lambda Bx$, and the series converges about the norm in H. It is further assumed that there exists a linear set X_A, $X \subset X_A \subset H$, for whose elements the second Banach norm is defined, a topologically nonequivalent norm in H. Under certain conditions the convergence of the spectral expansion about the norm in X_A is established. In conclusion the obtained results are applied to the study of certain differential, integro-differential, and integral equations.

V.G. Maz'ya

[Abstracter's note: Complete translation]

Card 2/2

KHARAZOV, D.F.; KHVEDELIDZE, B.V.

Some notes on the theory of singular integral equations with a Cauchy kernel. Soob. AN Gruz. SSR 28 no.2:129-135 F '62. (MIRA 15:3)

1. Akademiya nauk Gruzinskoy SSR Tbilisskiy matematicheskiy institut imeni A.M.Razmadze. Predstavleno akademikom N.P.Vekua.
(Integral equations)

KHARAZOV, D.F.

Approximate solution to linear equations in Banach space with a basis, and Galerkin's method. Trudy Mat. Inst. AN Gruz. SSR 27:253-263 '60. (MIRA 15:3)
(Banach spaces) (Linear equations)

KHARAZOV, D.F.

Comparison type theorems for eigenvalues of certain operators with discrete spectra. Trudy Mat. inst. AN Gruz. SSR 29:219-227 '63.
(MIRA 17:12)

KHARAZOV, D.F. (Tbilisi, SSSR)

Spectral problem of completely continuous operators analytically dependent on parameter in linear topological spaces. Acta math Szeged 23 no.1/2:38-45 '62.

1. Submitted January 4, 1961.

KHARAZOV, D.F.

Estimated eigenvalues of certain operators with discrete spectra.
Dif. urav. 1 no.8:1054-1069 Ag '65. (MIRA 18:9)

KHARAZOV, V.G.

Automatic device to distribute the mud mixture in the compartments of a self-propelled dredger. Trudy TSNIIMF 7 no. 32:78-84 '61.
(MIRA 14:5)

(Dredging machinery) (Automatic control)

BORISOVSKIY, Ye.S.; KHARBASH, A.Kh.

Lining of intermediate continuous casting arrangements. Metallurg 9 no.4:19-22 Ap '64. (MIRA 17:9)

1. Vsesoyuznyy institut ogneuporov.

BORISOVSKIY, Ye.S.; GIRSKIY, V.Ye.; PERMINOV, V.P.; KHARBASH, A.Kh.

Steel pouring nozzles with a proportioning insert for the continuous casting of steel. Ogneupory 31 no.1:31-36 '66. (MIRA 19:1)

1. Vsesoyuznyy institut ogneuporov.

KHARBEDIYA, Sh.

Eighteen years of engine performance without overhauling. Mor.flot 15 no.10:7-8 O'55. (MLRA 8:12)

1. Starshiy mekhanik teplokhoda "Griboyedov"
(Marine engines)

1. KHARCHENKO, A.; STACHEVSKIY, V.

2. USSR (600)

4. Agriculture - Study and Teaching

7. Method for carrying out excursions, A. Kharchenko, V. Stachevskiy, Dost.sel'khoz. no. 5, 1953.

9. Monthly List of Russian Accessions, Library of Congress, APRIL 1953. Unclassified.

KHARCHENKO, A.

Determining the drift angle. Grazhd.av. 17 no.5:15 My '60.
(MIRA 13:7)

1. Shturman podrazdeleniya Ukrainskogo territorial'nogo upravleniya.
(Navigation (Aeronautics))

KHARCHENKO, A.; BENDARSKIY, A., master zernosusheniya

They have adapted the ZSPZh-8 grain dryer for millet drying. Muk.-elev. prom. 29 no.11:29 N '63. (MIRA 17:2)

1. Glavnyy inzh. Zachat'yevskogo elevatora Donetskoy oblasti (for Kharchenko). 2. Zachat'yevskiy elevator Donetskoy oblasti (for Bendarskiy).

TELEGIN, V.G.; SIDOROV, V.A.; KHARCHENKO, A.A.; ZHARKOVA, D.K.; TREYBSHO, Ye.I.

Obtaining ditolyl ethane. Nefteper. i neftekhim. no.1: 34-39 '64. (MIRA 17:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimicheskikh protsessov, Leningrad.

KUKHAREVICH, N.Ye.; PALSHKOVA, M.P.; KHARCHENKO, A.A.; GAPOCHKA, I.K., otv. red.; NIKOLAYEVA, T.A., red.

[We prepare ourselves to listen to lectures] Gotovimsia slushat' lektsii. Moskva, No.2. 1963. 100 p. (MIRA 18:3)

1. Moscow. Universitet druzhby narodov. Kafedra russkogo yazyka.

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Thermodynamics of the process of alkylation of toluene with ethylene. Khim. prom. 40 no.8:574-577 Ag '64. (MIRA 18:4)

[illegible], V.G., SIDOROV, V.A., KHARCHENKO, A.A.

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KHARCHENKO, A.B.; SHUVALOV, A.[illegible]

[illegible]n ammonia evaporato[illegible]. Biul.tekh.-ekon.inform.Gos.nauch.-issl.inst. nauch.i tekh.inform. 17 no.7:49-53 Jl '64. (MIRA 17:10)

KHARCHENKO, A.B., inzh.; PESTOV, L.N., inzh.; BOKHANOV, V.A., inzh.; SIL'MAN, M.A., inzh.

New system of regulating the performance of piston air compressors. Khim. mash. 3 no.3:1-3 My-Je '59. (MIRA 12:12)
(Air compressors)

KHARCHENKO, A.B.,

NIKOLAYEV, V.B., inzh.; DMITRIYEV, P.T., inzh.; KAZENNOV, Yu.I., kand. tekhn.nauk; KHARCHENKO, A.B., inzh.

Welding the working channels of the reactor at the first atomic power plant. Svar.proizv.no.11:42-46 N '57 (MIRA 10:12)
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KHARCHENKO, A.B.; DAVYDOV, N.Yu.

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(MIRA 18:4)

KHARCHENKO, A.B., inzh.; SHUVALOV, A.I., inzh.

Ammonia plate tubing evaporator. Khol. tekh. 38 no. 1:17-20 Ja-F '61. (MIRA 14:4)

1. Moskovskiy zavod "Kompressor".
(Refrigeration and refrigerating machinery)

GLINORYBOV, Yakov Il'ich, inzh.; OKHRIMENKO, Veniamin Antonovich, inzh.; Prinimal uchastiye: TEODOROVICH, B.A., KHARCHENKO, A.F., otv. red.; KOROLEVA, T.I., red.izd-va; KOROVENKOVA, Z.A., tekhn.red.

[Ways of increasing the effectiveness of underground hydraulic coal mining] Puti povysheniia effektivnosti podzemnoi gidrodobychi uglia. Moskva, Ugletekhizdat, 1959. 205 p. (MIRA 12:8)

(Coal mines and mining) (Hydraulic mining)

1. KHARCHENKO, A. F.

2. USSR (600)

4. Agriculture - Study and Teaching

7. How excursions are organized. Dost. sel'khoz. no. 6, 1952

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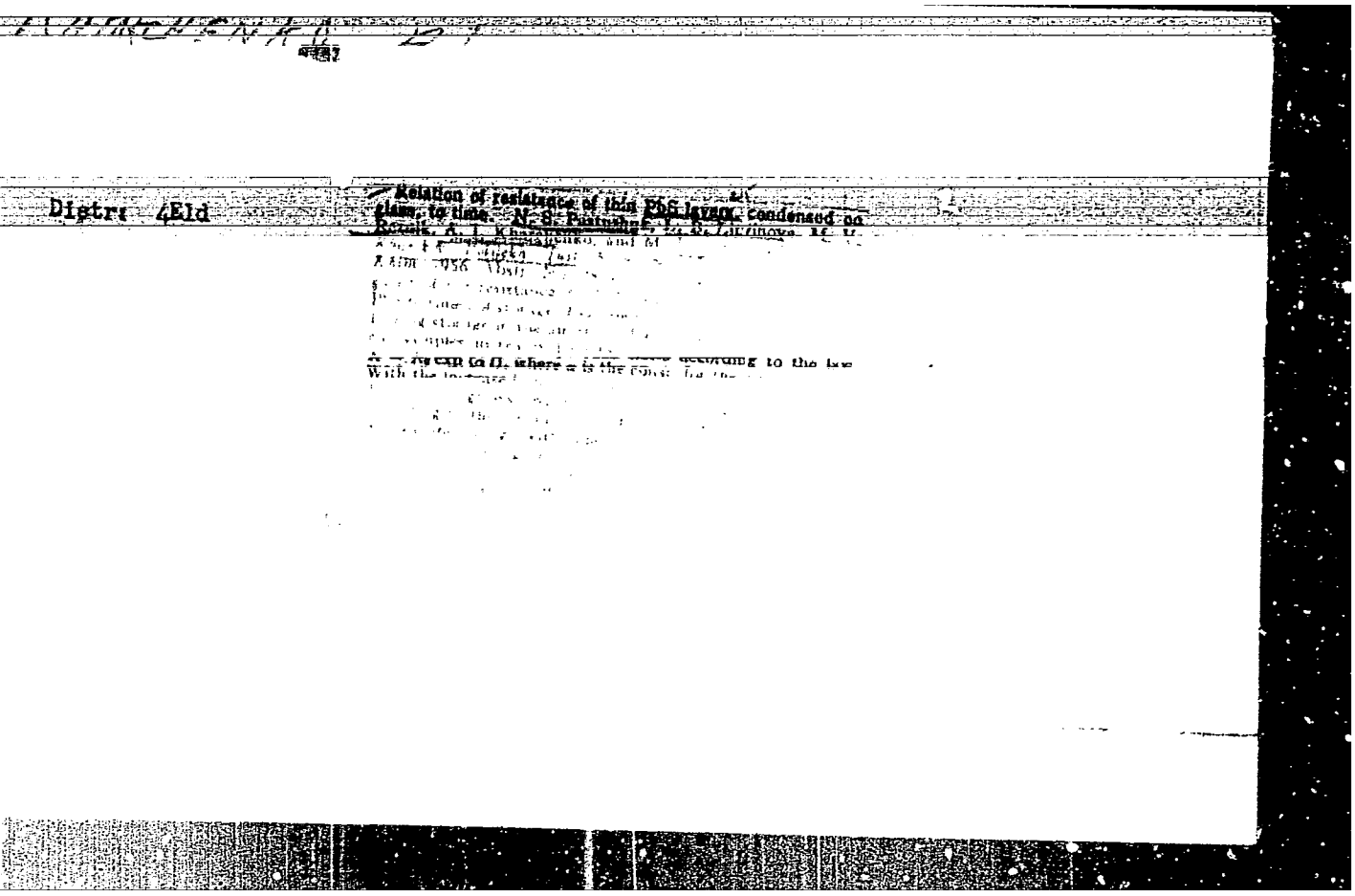

KOVAL', I.A., inzh.; GRODZIYEVSKIY, V.I., inzh.; DIDENKO, A.M., inzh.; SIMSON, A.E., kand. tekhn. nauk; KHARCHENKO, A.I., inzh.

Studying the working process of the SMD-18 diesel engine with turbocharger. Trakt. i sel'khozmash. no.8:5-8 Ag '64.

(MIRA 17:11)

1. Gosudarstvennoye spetsial'noye konstruktorskoye byuro po dvigatelyam (for Didenko). 2. Khar'kovskiy institut inzhenerov zheleznodorozhnogo transporta imeni S.M. Kirova (for Kharchenko).

KHARCHENKO, Aleksey Kondrat'yevich; FEYTEL'MAN, N.G., redaktor izdatel'stva; DODEVA, G.V., redaktor izdatel'stva; KOROVENKOVA, Z.A., tekhnicheskiy redaktor

[Labor productivity in the Soviet coal industry during the sixth five-year plan] Proizvoditel'nost' truda v ugol'noi promyshlennosti SSSR v shestoi piatiletke. Moskva, Ugletekhizdat, 1956. 99 p. (MLRA 10:4)
(Labor productivity) (Coal mines and mining)

KHARCHENKO, A.K., kandidat tekhnicheskikh nauk.

Increasing labor productivity is a most important task for the coal industry. Ugol' 31 no.7:31-35 Jl '56. (MLRA 9:9)

1.Vsesoyuznyy ugol'nyy institut.
(Coal mining machinery) (Mine management)

KHARCHENKO, A.K.

POLSTYANOY, G.N.; KHARCHENKO, A.K.

Transition to a shortened workday in coal mines. Ugol' 31 no.12:4-8 D '56. (MLRA 10:2)

(Donets Basin--Coal mines and mining)

KHARCHENKO, A.K.

GRAFOV, L.Ye., red.; GUBERMAN, I.D., red.; ZADEMIDKO, A.N., red.; ZASYAD'KO, A.F., red.; KRASNIKOVSKIY, G.V., red.; KUZ'MICH, A.S., red.; LALAYANTS, A.M., red.; MEL'NIKOV, L.G., red.; MINDELI, E.O., kand. tekhn.nauk; ONIKA, D.G., doktor tekhn.nauk, red.; PANOV, A.D., red.; POCHENKOV, K.I., red.; TERPIGOREV, A.M., akademik, red.; USKOV, A.A., red.; KHARCHENKO, A.K., red.; SHCHEDRIN, M.A., red.; BOYKO, A.A., red.; MELAMED, Z.M., kand.tekhn.red.; PERVUKHIN, A.G., red.; BARABANOV, F.A., red.; SOSNOV, G.A., red.; TSYPKIN, V.S., red.; ALADOVA, Ye.I., tekhn.red.

[Restoration of the coal industry in the Donets Basin] Vosstanovlenie ugol'noi promyshlennosti Donetskogo basseina. Moskva, Gos. nauchno-tekhn.izd-vo lit-ry po ugol'noi promyshl. Ugletekhizdat. Vol.1. 1957. 371 p. Vol.2. 1957. 782 p. (MIRA 11:4)
(Donets Basin--Coal mines and mining)

KHARCHENKO, A.K., kand.tekhn.nauk

Expansion of coal mining in the Chinese People's Republic. Ugol' 33 no.4:39-43 Ap '58. (MIRA 11:4)
(China--Coal mines and mining)

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(China--Coal mines and mining)

KUZ'MICH, A.S., otv.red.; KHARCHENKO, A.K., kand.tekhn.nauk, red.; ASTAKHOV, A.S., kand.ekonom.nauk, red.; KAMINSKIY, I.N., gornyy inzh., red.; SUROVA, V.A., red.izd-va; KONDRAT'YEVA, M.A., tekhn.red.

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1. Institut gornogo dela AN SSSR (for Kharchenko, Astakhov, Kaminskiy).
(Coal mines and mining)

ZVYAGIN, P.Z.; kand.tekhn.nauk; KAMINSKY, I.N., inzh.; POLYAKOV, N.V.; KHARCHENKO, A.K., kand.tekhn.nauk

For a further upswing of labor productivity in mines of the Rostovugol' Combine. Ugol' 35 no.11:13-17 N '60. (MIRA 13:12)

1. Glavnyy inzhener kombinata Rostovugol'.
(Donets Basin--Coal mines and mining--Labor productivity)

GOLOMOLZIN, Valerian Ivanovich; ZVYAGIN, P.Z., otv. red.; KHARCHENKO, A.K., otv. red.; SUROVA, V.A., red. izd-va; BOLDYREVA, Z.A., tekhn. red.; SHKLYAR, S.Ya., tekhn. red.

[Capacity and life of mines] Moshchnost' i sroki sluzhby shakht. Moskva, Gosgortekhizdat, 1961. 161 p. (MIRA 15:7)

(Coal mines and mining)

MEL'NIKOV, N.V.; KHARCHENKO, A.K.; KUZ'MICH, A.S.; OSTROVSKIY, S.B.; SUDOPLATOV, A.P.

Prospects of the expansion of coal mining in the U.S.S.R. Ugol' 36 no.7:61-62 Jl '61. (MIRA 15:2)
(Coal mines and mining)

KHARCHENKO, A.K., kand. tekhn. nauk; ZVYAGIN, P.Z., kand. tekhn. nauk, red.; OSVAL'D, E.Ya., red.izd-va; IL'INSKAYA, G.M., tekhn. red.; SABITOV, A., tekhn. red.

[Labor expended per unit of production in coal mining and ways of reducing it] Trudoemkost' dobychi uglia i puti ee snizheniia. Rabota vypolnena pod obshchim rukovodstvom A.K.Kharchenko. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po gornomu delu, 1962. 506 p. (MIRA 15:5)

1. Akademiya nauk SSSR. Institut gornogo dela.
(Mining engineering) (Work measurement)

KIARCHENKO, A.K., kand.tekhn.nauk; GARKAVI, S.M., kand.tekhn.nauk

Correct selection of over-all mechanization means and of mining parameters is the base of high labor productivity. Ugol' 37 no.7:35-38 Jl '62. (MIRA 15:7)

(Coal mines and mining—Labor productivity)

BARDIN, I.P , akademik, otv. red.[deceased]; BELYANCHIKOV, K.P., nauchnyy red.; YEROFEYEV, B.N., nauchnyy red.; ZVYAGIN, P.Z., nauchnyy red.; KOSHELEV, V V., nauchnyy red.: MELESHKIN, S.M., nauchnyy red.; MIRLIN, G.G., nauchnyy red.; MOSKAL'KOV, Ye.F., nauchnyy red.; POKROVSKIY, M.A., nauchnyy red.; SLEDZYUK, P.Ye., nauchnyy red.; FINKELSHTEYN, A.S., nauchnyy red.; KHARCHENKO, A.K., nauchnyy red.; SHEVYAKOV, L.D., akademik, nauchnyy red.; SHAPIRO, I.S., nauchnyy red.; SHIRYAYEV, P.A., nauchnyy red.; OKHRIMYUK, Ye.M., nauchnyy red.; YANSHIN, A.L., akademik, nauchnyy red.; MAKOVSKIY, G.M., red.izd-va; VOLKOVA, V.G.,tekhn. red.

[Oolitic iron ores of the Lisakovka deposit in Kustanay Province and means for their exploitation]Oolitovye zheleznye rudy Lisakovskogo mestorozhdeniia Kustanaiskoi oblasti i puti ikh ispol'zovaniia. Moskva, Izd-vo Akad. nauk SSSR, 1962. 234 p. (Zhelezorudnye mestorozhdeniia SSSR [no.1]) (MIRA 15:12)

1. Akademiya nauk SSSR. Institut gornogo dela.
(Kustanay Province—Iron ores)

KHARCHENKO, A.K.

Quantitative estimation of the effect of the most important factors of mining geology on labor productivity. Gor. i ekon. vop. razrab. ugol'. i rud. mest. no.1:371-385 '62. (MIRA 16:7)
(Coal mines and mining—Labor productivity)

KHARCHENKO, A. K., KRASNIKOVSKIY, G. V., KUZNETSOV, K. K., KLORIKYAN, S. KH., and KOZIN, Yu.

"Scientific and technical experience of USSR in the coal industry development of promoting oil industry"

report to be submitted for the United Nations Conference on the Application of Science and Technology for the Benefit of the Less Developed Areas - Geneva, Switzerland, 4-20 Feb 63.

BURSHTEYN, Grigoriy Yakovlevich, doktor ekon. nauk; LEVIN, G.I., kand. ekon.nauk, retsenzent; PERVUKHIN, A.G., retsenzent; PROBST, A.Ye., doktor ekon.nauk, retsenzent; KHARCHENKO, A.K., doktor tekhn. nauk, retsenzent; GOLUBYATNIKOVA, G.S., red.izd-va; BOLDYREVA, Z.A., tekhn. red.; MAKSIMOVA, V.V., tekhn. red.

[Capital assets of the coal industry] Osnovnye fondy ugol'noi promyshlennosti. Moskva, Gosgortekhizdat, 1963. 211 p. (MIRA 16:8)
(Coal mines and mining—Finance)

KHARCHENKO, A. K., doktor tekhn. nauk

Ways and methods of increasing labor productivity in the coal industry. Ugol' 38 no.4:1-6 Ap '63. (MIRA 16:4)

(Coal mines and mining—Labor productivity)

KHARCHENKO, Aleksey Kondrat'yevich, doktor tekhn. nauk; GARKAVI, S.M., otv. red.; OSVAL'D, E.Ya., red.izd-va; BOLDYREVA, Z.A., tekhn. red.; SABITOV, A., tekhn.red.

[Labor productivity in the coal industry and ways to increase it] Proizvoditel'nost' truda v ugol'noi promyshlennosti i puti ee povysheniia. Moskva, Izd-vo "Nedra," 1964. 349 p. (MIRA 17:1)

KHARCHENKO, A.K., doktor tekhn. nauk; GARKAVI, S.M., kand. tekhn. nauk

Maximum load on a longwall depending on the gas content of seams and the selection of an order of mining and a ventilation system of the mining areas. Ugol' 38 no.11:31-35 N '63. (MIRA 17:9)

1. Institut gornogo dela im. A.A. Skochinskogo.

KHARCHENKO, A.K., doktor tekhn. nauk, otv. red.; [illegible], Ye.I., inzh. otv. red.; ZVYAGIN, P.Z., prof., doktor tekhn. nauk, otv. red.

[New developments in the economics of coal and ore deposit mining] Novoe v ekonomike razrabotki ugol'nykh i rudnykh mestorozhdenii. Moskva, Nedra, 1965. 294 p.

(MIRA 18:4)

1. Moscow. Institut gornogo dela imeni A.A.Skochinskogo.

Translation from: Referativnny Zhurnal, Geografiya, 1957, Nr 1, 14-1-411
p. 40 (USSR)

AUTHOR: Kharchenko, A. M.

TITLE: Basic Characteristics of the Relief and Geological Formation of the Lower Reaches of the Tura River (Osnovnyye cherty rel'yefa i geologicheskogo stroyeniya nizov'ya reki Tury)

PERIODICAL: Uch. zap. Orlovsk. gos. ped. in-ta, 1956, Nr 10, pp. 235-253

ABSTRACT: The lower reaches of the Tura River are located in the northern part of the wooded steppe belt of the Western Siberian depression (Tyumenskaya oblast'). The horizontal position of the tertiary and quaternary beds forming the area contributes considerably to the level relief. The fact that neogenic clays are close to the

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LOZHNIKOV, Anatoliy Petrovich; KHARCHENKO, Anatoliy Mikhaylovich; POPOV, P.A., red.; LARIONOV, G.Ye., tekhn. red.

[Pulse devices using trochotrons] Impul'snye ustroistva na trokhotronakh. Moskva, Gosenergoizdat, 1963. 94 p. (Massovaia radiobiblioteka, no.495) (MIRA 17:3)

KHARCHENKO, A. M.

9(0)

SOV/112-59-1-1505

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1959, Nr 1, pp 209-210 (USSR)

AUTHOR: Zernov, D. V., Yelinson, M. I., and Kharchenko, A. M.

TITLE: Prospects for Developing New Types of Electronic Devices for Automatic and Telemechanic Equipment

PERIODICAL: Sessiya AS USSR po nauchn. probl. avtomatiz. proiz-va, 1956, Vol 3, M., AN SSSR, 1957, pp 59-81

ABSTRACT: Electronic devices are used in automatic and telemechanical systems for these purposes: (1) radiation primary elements (photoelectric devices), magnetic-field primary elements (magnetic-tape recorders), etc.; (2) amplifiers; (3) distributors (various pulse circuits that generate, convert, form, distribute, delay, count electric pulses, etc.); (4) converters of various types of signals; (5) multipliers and function tubes (used in computer-

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Prospects for Developing New Types of Electronic Devices for Automatic and Telemechanic . . .

type simulators); (6) storage devices for temporarily holding various signals available for subsequent readouts. In addition to conventional control-grid tubes, semiconductor devices, and various gas-discharge tubes, other electron devices are widely used: the devices acting as primary elements in transmission of movement, acceleration, pressure, magnetic field, etc., and special devices intended to replace a number of electron tubes; using a large number of tubes reduces reliability of a system as a whole. As a rule, the latter devices are of electron-beam type; a great flexibility of the electron beam, which under the influence of electric and magnetic fields changes its intensity and spatial position, is used. A detailed critical review of commercially-available photoelectric devices is given, and prospects of using them in various fields are indicated; an electron-beam device intended to reproduce signals from a magnetic tape is described. The circuit and characteristics of a device developed by IRE AN SSSR are presented, as well

Prospects for New Types of Electronic Devices for Automatic and Telemechanic . . .

as data on new high-transconductance tubes, grid-control secondary-emission tubes, beam-deflecting tubes, and electrometric tubes. A principal diagram is given of a simple 10-cavity ring trochotron developed by IRE AN SSSR; the trochotron develops output currents up to 10-12 ma and has output circuits independent of control and switching circuits. The trochotron can be used as a multichannel distributor for pulse counting, frequency division, modulating a single carrier by several audio channels, strobing and matrix circuits, coding, timing, etc. Information is submitted on a binary switch developed by IRE AN SSSR. A description is presented of electron-beam coding tubes and secondary-emission contact tubes which are characterized by low in[illegible]al resistance, about one kohm; the tubes can convert signals (DC into AC, change the type of modulation, help in noise elimination, or make reception more convenient, etc.); they can also serve for various types of switching, etc. Development of beam switching tubes with a small number of contacts in one envelope and multichannel tubes with a low input signal (10-100 microvolts and

lower) is promising. A few types of electron-beam multipliers and formatrons -- the devices whose output current is a specified function of the input -- i.e., function devices, are described. Data is also supplied on electron-beam storage tubes regularly produced in the USSR and on those described in foreign publications.

Ye.M.M.

11 июня

(с 18 до 22 часов)

Г. И. Рапопорт

[illegible] электронных пучков с [illegible] траекториями

С. Г. Афанасов

Об управлении частотой триодного генератора

А. Н. Чаков

[illegible] шумы [illegible] электронных ламп

М. С. Ардзов

Метод получения [illegible] характеристик [illegible] фаз в [illegible] электронных лампах

12 июня

(с 10 до 16 часов)

Е. В. Богданов,
В. Я. Кислов,
З. С. Чернов

Взаимодействие электронного потока с плазмой

36

Г. Д. Лобов

Генераторный детектор СВЧ колебаний

А. Н. Выставкин,
Н. Д. Залогин,
С. С. Шелмазанов

Волноводные умножители частоты на [illegible] электронных пучках

А. М. Харченко,
~~[illegible]~~
М. Н. [illegible],
Д. В. Зернов

Электронные контактные диоды и [illegible] схемы их применения

8. СЕКЦИЯ РАДИОИЗМЕРЕНИЙ

Руководитель Г. Д. Бурдун

9 июня

(с 10 до 16 часов)

А. Г. Сапогин

О возможностях повышения стабильности кварцевых генераторов для эталонов частоты

37

report submitted for the Centennial Meeting of the Scientific Technological Society of Radio Engineering and Electrical Communications im. A. S. Popov (VNORIE), Moscow, 8-12 June. 1959

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S/109/60/005/05/016/021
E140/E435

AUTHORS: Bykhovskaya, Ye.V., Kharchenko, A.M., Yelinson, M.I. and Zernov, D.V.

TITLE: Electron-Beam Switching Tubes

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol 5, Nr 5, pp 849-857 (USSR)

ABSTRACT: The theory of beam switching tubes is discussed and then certain types of single-contact and multi-contact tubes and their basic parameters are described. The single-contact tubes have low internal resistance in the conducting stage 1.5 to 2.5 kΩ and substantial operating currents up to 20 mA with high resistance (10^4 MΩ) in the open state. The multi-contact tubes have 5 to 10 contacts with resistances of 5 to 10 kΩ with operating currents up to 2 mA. High-voltage tubes permitting the switching of signals at potentials higher than 1 kV have also been developed. There are 15 figures and 3 references, 2 of which are German and 1 English.

SUBMITTED: February 7, 1959

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LOZHNIKOV, A.P.; KHARCHENKO, A.M.

Multiposition switchboards with annular trochotrons. Priborostroenie no.4: 11-13 Ap '63. (MIRA 16:4)
(Electronic apparatus and appliances)

L 1972-66

ACCESSION NR: AT5017379 UR/0000/64/000/000/0025/0030

AUTHOR: Kharchenko, A. M. (Moscow); Bykhovskaya, Ye. V. (Moscow)

TITLE: Electron contact tube

SOURCE: Konferentsiya po avtomaticheskomu kontrolyu, i metodam elektricheskikh izmereniy, 3d, Novosibirsk, 1961. Avtomaticheskiy kontrol' i metody elektricheskikh izmereniy; trudy konferentsii, t. 2: Tsifrovyye izmeritel'nyye pribory. Elektricheskiye izmereniya neelektricheskikh velichin. Ustroystva avtomaticheskogo kontrolya i upravleniya v promyshlennosti (Automatic control and electrical measuring techniques; transactions of the conference. v. 2: Digital measuring instruments. Electrical measurements of nonelectrical quantities. Devices for automatic control and regulation in industry). Novosibirsk, Redizdat Sib. otd. AN SSSR, 1964, 25-30

TOPIC TAGS: contact tube, switching tube

ABSTRACT: The development is reported of an electron contact tube which closes the circuit by means of a secondary-electron beam generated between an

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ACCESSION NR: AT5017379

emitter and a "suction" electrode. The emitter is excited by a primary-electron beam which can be either stopped or deflected. A single-contact tube, whose construction resembles a conventional pentode, has a turn-on resistance of 2.5 kohms at 5—6 ma and a turn-off resistance of 10^{10} ohms at a leakage current of 0.04 ma; its cutoff voltage is -15—20 v. A disk-beam tube may have a turn-on resistance of 1.25—1.5 kohms at 20—25 ma. A 6-contact tube with a turn-on resistance of 5—7 kohms is switched by a control voltage of 30—40 v; the corresponding values for a 10-contact tube are: 10 kohms and 20—25 v. Possible applications of the above tubes are briefly discussed. Orig. art. has: 3 figures.

ASSOCIATION: none

SUBMITTED: 11Nov64 ENCL: 00 SUB CODE: EC, IE

NO REF SOV: 001 OTHER: 002

Card 2/2

L 1969-66 GS

ACCESSION NR: AT5017385 UR/0000/64/000/000/0074/0078

AUTHOR: Kharchenko, A. M. (Moscow); Ovchinnikova, N. A. (Moscow) 33 B+1

TITLE: Electron-beam tube for encoding

SOURCE: Konferentsiya po avtomaticheskomu kontrolyu, i metodam elektricheskikh izmereniy, 3d, Novosibirsk, 1961. Avtomaticheskiy kontrol' i metody elektricheskikh izmereniy; trudy konferentsii, t. 2: Tsifrovyye izmeritel'nyye pribory. Elektricheskiye izmereniya neelektricheskikh velichin. Ustroystva avtomaticheskogo kontrolya i upravleniya v promyshlennosti (Automatic control and electrical measuring techniques; transactions of the conference, v. 2: Digital measuring instruments. Electrical measurements of nonelectrical quantities. Devices for automatic control and regulation in industry). Novosibirsk, Redizdat Sib. otd. AN SSSR, 1964, 74-78

TOPIC TAGS: electron beam tube

ABSTRACT: The development of a Soviet ribbon-beam tube for parallel coding (Gray code) is briefly reported; the corresponding USA tube (R. L. Carbrey,

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