BEREZANSKIY, Yu.M.; MITROPOL'SKIY, Yu.A., akademik, otv. red.; BEREZINETS, L.P., red.

[Expansion of self-adjoint operators in eigenfunctions] Razlozhenie po sobstvennym funktsiiam samosopriazhennykh operatorov. Kiev, Naukova dumka, 1965. 798 p. (MIRA 18:9)

1. Akademiya nauk Ukr.SSR (for Mitropol'skiy).

MITROPOL'SKIY, Yu.A., otv. red.; BEREZANSKIY, Yu.M., red.; BREUS, K.A., red.; ZMOROVICH, V.A., red.; LYASHKO, I.I., red.; MARCHENKO, V.A., red.; PARASYUK, O.S., red.; POLOZHIY, G.N., red.; FIL'CHAKOV, P.F., red.; KULAKOVSKAYA, N.S., red.

[Mathematical physics] Matematicheskaia fizika. Kiev, Naukova dumka, 1965. 156 p. (MIRA 18:8)

1. Akademiya nauk URSR, Kiev.

ILLEGIBLE

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204800027-6

ILLEGIBLE

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204800027-6

ILLEGIBLE

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204800027-6

ILLEGIBLE

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204800027-6

BEREZANSKIY, Yu.M. (Kiyev)

Existence of weak solutions to certain boundary value problems for mixed type equations. Ukr. mat. zhur. 15 no.4:347-364 '63.
(MIRA 17:4)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204800027-6

BEREZANSKIY, Yu.M.

Smoothness up to the domain boundary of a spectral function of a self-adjoint differential elliptic operator. Dokl. AN SSSR 152 no.3:511-514 S '63. (MIRA 16:12)

1. Institut matematiki AN UkrSSR. Predstavleno akademikom S.L. Sobolevym.

BEREZANSKIY, Yu.M.; KREYN, S.G.; ROYTBERG, Ya.A.

Theorem on homeomorphisms and a local increase in smoothness up to the boundary of solutions to elliptic equations. Dokl. AN SSSR 148 no.4:745-748 F '63. (MIRA 16:4)

1. Institut matematiki AN UkrSSR, Voronezhskiy gosudarstvennyy universitet i Stanislavskiy pedagogicheskiy institut Predstavleno akademikom I.G.Petrovskim.
(Hilbert space) (Differential equations)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204800027-6

BEREZANSKIY, Yu.M. (Kiyev); ROYTBERG, Ya.A. (Kiyev)

Smoothness of the resolvent of an elliptic operator up to the boundary of the nuclear region. Ukr. mat. zhur. 15 no.2:185-189 '63. (MIRA 16:9)

MITROPOL'SKIY Yu.A.,otv.red.; BEREZANSKIY, Yu.M., red.; KOROLYUK, V.S., red.; PARASYUK, O.S., red.; SOKOLOV, Yu.D., red.; FESHCHENKO, F.F., red.; FIL'CHAKOV, P.F., red.; BREUS, K.A., red.; MEL'NIK, T.S., red.; BEREZOVSKAYA, D.N., tekhn. red.

[Approximate methods of solution of differential equations] Priblizhennye metody resheniia differentsial'nykh uravnenii. Kiev, Izd-vo AN USSR, 1963. 153 p. (MIRA 17:3)

1. Akademiya nauk URSR, Kiev. Instytut matematyky.

BEREZANSKIY, Yu.M.

Spaces with a negative norm. Usp.mat.nauk 18 no.1:63-96 Ja-F '63. (MIRA 16:2)
(Hilbert space) (Operators (Mathematics))

BEREZANSKIY, Yu.M. (Kiyev); OROCHKO, Yu.B. (Kiyev)

Remarks concerning the growth of eigenfunctions of self-adjoint operators. Ukr.mat.zhur. 14 no.2:180-184 '62. (MIRA 15:11)
(Eigenfunctions) (Operators (Mathematics))

BEREZANSKIY, Yu.M.

Generalization of Bochner's multidimensional theorem. Dokl.AN SSSR 136 no.5:1011-1014 F '61. (MIRA 14:5)

1. Institut matematiki Akademii nauk USSR. Predstavleno akademikom S.L.Sobolevym.

(Hilbert space)

Energy Inequalities for Some Classes of Mixed Type Equations

80034
S/020/60/132/01/01/064

$\|(1+|x_2|)^2 L[v]\|_0 \geqslant c\|v\|_+$. This inequality is sufficient in order to prove the existence of the weak solution u of the considered aerodynamic boundary value problem with the secondary condition

$$\int_G |u|^2 \frac{dx}{(1+|x_2|)^{2+\epsilon}} < \infty .$$

There are 9 references : 5 Soviet and 4 American.

ASSOCIATION: Institut matematiki Akademii nauk Ukr SSR (Institute of Mathematics AS Ukr SSR)

PRESENTED: December 29, 1959, by S.L. Sobolev, Academician

SUBMITTED: December 25, 1959

Card 3/3

Energy Inequalities for Some Classes of Mixed Type Equations

80034
S/020/60/132/01/01/064

(2) $\| L[u] \|_0 \geqslant c \|u\|_+$, $\|L[v]\|_0 \geqslant c \|v\|_+$ $(u \in W_2^2(Rb),\ v \in W_2^2(Rb)^+, c>0)$,

where $\|f\|_0$ - norm in $L_2(G)$, $W_2^2(Rb)$ and $W_2^2(Rb)^+$ are the sets of the functions of $W_2^2(G)$ which satisfy certain boundary conditions (Rb) and $(Rb)^+$ respectively, while $\|u\|_+$ (and similarly $\|v\|_+$) are defined as follows :

$$\|u\|_+^2 = \int_G |u|^2\, dx + \int_{G_1} \sum_{j,k=1}^{2} a_{jk}(x) D_k u\, \overline{D_j u}\, dx + \int_{G_h} \left| \sqrt{-k}\, D_1 u - D_2 u \right|^2 dx$$

This result completes the earlier paper of the author (Ref. 1) since according to (Ref. 1) the existence of a weak solution of a boundary value problem for $L[u] = f$ is guaranteed by the second inequality (2) while the first inequality is sufficient for the uniqueness of a smooth solution.
Then it is asserted that the outflow of a supersonic jet out of an infinite tank leads to the Chaplygin equation in G, where G_1 is infinite. Therefore the above results cannot be extended directly to this case. The author introduces a weighted norm and instead of (2) he proves the inequality

Card 2/3

16.3500

80034
S/020/60/132/01/01/064

AUTHOR: Berezanskiy, Yu.M.

TITLE: Energy Inequalities for Some Classes of Mixed Type Equations 16

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 132, No. 1, pp. 9-12

TEXT: In a finite domain G of the (x_1, x_2)-plane which lies in the strip $-h \leq x_2 < H$, intersects the x_1 - axis and is bounded by a piecewise smooth curve Γ, the author considers the differential expression

$$(1) \quad L[u] = \sum_{j,k=1}^{3} D_j(a_{jk}(x) D_k u) + \sum_{j=1}^{2} a_j(x) D_j u + a(x) u \quad ,$$

where $D_j = \frac{d}{dx_j}$, $j = 1,2$. It is assumed that L is elliptic in $G_1 = G \cap \{x_2 > 0\}$ and hyperbolic in $G_n = G \cap \{x_2 < 0\}$ and that G_h has a certain special form. Furthermore the author gives numerous assumptions on the coefficients. He proves the energy inequalities

Card 1/3

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204800027-6

88300

S/041/60/012/004/001/011
C111/C222

On a Problem of Dirichlet Type for the Equation of Oscillations of a String

Let $u(\xi)$, $\xi \in G \cup \Gamma$, belong to the class K if there exists a $w(\xi)$, $\frac{\partial^2 w}{\partial \xi_1 \partial \xi_2} \in L_2$ continuous in $G \cup \Gamma$ so that u - w in every region $0_j \cup \gamma_j$ has the form $\varphi_1(\xi_1) + \psi_j(\xi_2)$, where φ_j and ψ_j are summable in the square.

Theorem 2 : Let $f \in L_2$. Then every weak solution $u(\xi)$ of (1) mentioned in theorem 1 belongs to the class K and vanishes on Γ.

There are 3 figures and 4 Soviet references.

SUBMITTED: May 17, 1960

Card 5/5

88300

S/041/60/012/004/001/011
C111/C222

On a Problem of Dirichlet Type for the Equation of Oscillations of a String

Theorem 1 : Let G be an admissible region the boundary of which contains no straight line segments $x_1 \pm x_2 = C$. For every f of the negative space $W_2^{-1} \supset L_2$, the boundary value problem (1) has a weak solution of L_2 (i.e. there exists an $u \in L_2$ so that for every $v \in W_2^2$, $v/_{\Gamma} = 0$ it holds:

$$(u, L[v])_{L_1} = (f,v) \quad . \tag{14}$$

Every smooth solution (i.e. of W_2^2) of (1) is unique. The solvability of (1) is stable with respect to the mentioned small variations of G.
Let ξ_1 be the straight line $x_1 = x_2$, and ξ_2 be the straight line $x_1 = -x_2$; let $\xi = (\xi_1 - \xi_2)$. Let G be fixed, let Γ contain no parts parallel to ξ_j. Let G be covered by a finite number of neighborhoods $O_j = O_j \cap G$ $(j = 1,\ldots N)$ with piecewise smooth boundaries γ_j , where every straight line being parallel to ξ_1 or ξ_2 intersects every γ_j in at most 2 points.

Card 4/ 5

On a Problem of Dirichlet Type for the Equation of Oscillations of a String

then for $u \in W_2^2$ vanishing on Γ there exists the energy inequality

(7) $$\| L[u] \|_{L_2} \geqslant C \| u \|_{W_2^1} \qquad (C > 0)$$

The author considers (1). Putting $A_k(x) = c_{k1}x_1 + c_{k2}x_2$, then (5) becomes positive definite if

(9) $$c_{22} - c_{11} > 0 \; , \; (c_{22} - c_{11})^2 - (c_{12} - c_{21})^2 > 0 \quad .$$

Now the author seeks functions $\phi(x)$ satisfying

(8) $$\sum_{k=1}^{n} A_k(x) D_k \phi = 0 \quad .$$

If a boundary of a bounded region G can be formed by a finite number of surfaces $\phi(x) = C$ then G has the properties mentioned above. To different c_{kj} satisfying (9) there correspond different admissible G .

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204800027-6

88300
S/041/60/012/004/001/011
C111/C222

On a Problem of Dirichlet Type for the Equation of Oscillations of a String

(2) $$L[u] = \sum_{j=1}^{n} a_j D_j^2 u \quad (D_j = \frac{\partial}{\partial x_j}, \quad j = 1, \ldots, n)$$

is considered, where a_j = const. It is stated: If there exist real continuously differentiable functions $A_1(x), \ldots, A_n(x)$ so that for every $x \in G \cup \Gamma$ the quadratic form

(5) $$\sum_{j=1}^{n} a_j \left(\sum_{k=1}^{n} D_k A_k - 2 D_j A_j \right) |\xi_j|^2 - 2 \mathrm{Re} \sum_{\substack{j,k=1 \\ j>k}}^{n} (a_j D_j A_k + a_k D_k A_j) \xi_j \overline{\xi_k}$$

is strongly positive definite, and on Γ it holds

(6) $$\left(\sum_{k=1}^{n} A_k \nu_k \right) \left(\sum_{j=1}^{n} a_j \nu_j^2 \right) \geqslant 0$$

Card 2/5

88300

S/041/60/012/004/001/011
C111/C222

16.3500

AUTHOR: Berezanskiy, Yu.M.

TITLE: On a Problem of Dirichlet Type for the Equation of Oscillations of a String

PERIODICAL: Ukrainskiy matematicheskiy zhurnal, 1960, Vol. 12, No. 4, pp. 363 - 372

TEXT: It is shown that there exist bounded regions G of the (x_1, x_2) plane in which the problem

$$(1) \qquad \frac{\partial^2 u}{\partial x_1^2} - \frac{\partial^2 u}{\partial x_2^2} = f \quad , \quad u|_{\Gamma} = 0$$

where Γ is the boundary of G, for an arbitrary f has a weak solution of $L_2 = L_2(G)$, where the solvability is stable with respect to small variations of G.

In the bounded region G of the n-dimensional space (with a piecewise smooth boundary Γ) at first the system

Card 1/5

Generalized Solutions of Boundary Value Problems SOV/20-126-6-1/67

He gives necessary and sufficient conditions so that this happens, and considers some related questions. Inequalities of the type S.N. Bernshteyn - O.A. Ladyzhenskaya play an important role. Two theorems are given.

There are 4 references, 1 of which is Soviet, 1 American, and 2 Swedish.

ASSOCIATION: Institut matematiki AN USSR (Mathematical Institute AS Ukr. SSR)

PRESENTED: March 14, 1959, by S.L. Sobolev, Academician

SUBMITTED: February 23, 1959

Card 2/2

16(1) 1

AUTHOR: Berezanskiy, Yu.M.

SOV/20-126-6-1/67

TITLE: Generalized Solutions of Boundary Value Problems

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 6, pp 1159-1162 (USSR)

ABSTRACT: Let $L[u]$ be a differential expression of order r with sufficiently smooth coefficients ; W_2^l $(l \geqslant 0)$ the Sobolev function space; W_2^{-l} the space of the generalized functions with negative norm. The author investigates the boundary value problem

$$L[u] = f$$

$$u \in W_2^r \quad \text{on the boundary,}$$

where $f \in W_2^{-r}$. The problem is called solvable, if there exists an approximating sequence u_n so that $L[u_n] \to f$ holds in the sense of the convergence in W_2^{-r}. The author genralizes his method from [Ref 1] and investigates when the defined solution will be an ordinary generalized function.

Card 1/2

BEREZANSKIY, Yu. M.

16(1) PHASE I BOOK EXPLOITATION SOV/2660

Vsesoyuznyy matematicheskiy s"yezd. 3rd, Moscow, 1956

Trudy. t. 4: Kratkoye soderzhaniye sektsionnykh dokladov. Doklady inostrannykh uchenykh (Transactions of the 3rd All-Union Mathematical Conference in Moscow. vol. 4: Summary of Sectional Reports. Reports of Foreign Scientists) Moscow, Izd-vo AN SSSR, 1959. 247 p. 2,2CC copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Matematicheskiy institut.

Tech. Ed.: G.N. Shevchanko; Editorial Board: A.A. Abramov, V.G. Boltyanskiy, A.M. Vasil'yev, B.V. Medvedev, A.D. Myshkis, S.M. Nikol'skiy (Resp. Ed.), A.G. Postnikov, Yu. V. Prokhorov, K.A. Rybnikov, P. L. Ul'yanov, V.A. Uspenskiy, N.G. Chetayev, G. Ye. Shilov, and A.I. Shirshov.

PURPOSE: This book is intended for mathematicians and physicists.

COVERAGE: The book is Volume IV of the Transactions of the Third All-Union Mathematical Conference, held in June and July 1956. The book is divided into two main parts. The first part contains summaries of the papers presented by Soviet scientists at the Conference that were not included in the first two volumes. The second part contains the text of reports submitted to the editor by non-Soviet scientists. In those cases when the non-Soviet scientist did not submit a copy of his paper to the editor, the title of the paper is cited and, if the paper was printed in a previous volume, reference is made to the appropriate volume. The papers, both Soviet and non-Soviet, cover various topics in number theory, algebra, differential and integral equations, function theory, functional analysis, probability theory, topology, mathematical problems of mechanics and physics, computational mathematics, mathematical logic and the foundations of mathematics, and the history of mathematics.

Card 11/34

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204800027-6

16(1)

AUTHOR: Berezanskiy, Yu.M. (Kiyev) SOV/39-47-2-1/6

TITLE: The Representation of Positive-Definite Kernels by Eigenfunctions of Differential Equations (Predstavleniye polozhitel'no opredelennykh yader cherez sobstvennyye funktsii differentsial'nykh uravneniy)

PERIODICAL: Matematicheskiy sbornik, 1959, Vol 47, Nr 2, pp 145-176 (USSR)

ABSTRACT: The paper contains a detailed representation of the results already announced in [Ref 9]. The author generalizes the results of A.Ya. Povzner [Ref 1] and M.G. Kreyn [Ref 5,6]. O.S. Parasyuk and M.M. Gekhtman called attention to the connection of the paper with the questions of quantum physics. N.I. Shlyakhova participated in obtaining some partial results of the paper. Altogether there are given 12 theorems and lemmata.
There are 13 references, 12 of which are Soviet, and 1 French.

SUBMITTED: June 17, 1957

Card 1/1

On the Operator Generated by an Ultrahyperbolic Differential Expression SOV/41-11-3-10/16

then even for the more complicated case

(3) $\mathbf{L}(u) = \mathbf{L}'(u) - \mathbf{L}''(u) + c(x)u$

it can be stated:

Theorem 2: L is selfadjoint in $L_2(G)$ if the coefficients and the boundary are sufficiently smooth.

Theorem 3 contains an assertion of uniqueness for the solution $u(x) = u(x',x'')$ of

(5) $$\mathbf{L}[u] = \mathbf{M}_{x'}[u] - \mathbf{M}_{x''}[u] = f(x),$$

which is considered in $G = G' \times G''$ of the $E_n = E_{n'} \times E_{n''}$, where $\mathbf{M}$ is a formally selfadjoint elliptic expression with sufficiently smooth real coefficients.

As an example the case

(8) $$\mathbf{L}[u] = -\frac{\partial^2 u}{\partial x_1^2} + \frac{\partial^2 u}{\partial x_2^2}$$

is considered in detail.

The author mentions S.A.Shlyak.

There are 12 references, 10 of which are Soviet, and 2 American.

SUBMITTED: March 20, 1959

Card 2/2

16(1) 8

AUTHOR: Berezanskiy, Yu.M.

SOV/41-11-3-10/16

TITLE: On the Operator Generated by an Ultrahyperbolic Differential Expression

PERIODICAL: Ukrainskiy matematicheskiy zhurnal, 1959, Vol 11, Nr 3, pp 315-321 (USSR)

ABSTRACT: In the bounded domain $G \subset E_n$ the boundary Γ of which consists of finitely many pieces of planes parallel to the coordinate surfaces, the author considers the ultrahyperbolic expression

(1) $$\mathbf{L}[u] = -\sum_{j=1}^{n'} \frac{\partial^2 u}{\partial x_j^2} + \sum_{j=n'+1}^{n} \frac{\partial^2 u}{\partial x_j^2} + c(x)u, \quad 0 \leqslant n' \leqslant n;$$

where $c(x)$ is a bounded real function. Let $\mathcal{L}u = \mathbf{L}[u]$ be put for functions $u(x)$ of the Sobolev space $W_2^1(G)$ which belong to W_2^2 inside of G, which vanish on Γ, and for which all $\frac{\partial^2 u}{\partial x_j^2} \in L_2(G)$. The operator L is defined as the closure of $\mathcal{L}$ in $L_2(G)$.

Theorem 1: L is selfadjoint in $L_2(G)$.

If the problem admits the separation of variables (i.e. $G = G' \times G''$),

Card 1/2

16(1)

AUTHOR: Berezanskiy, Yu.M. (Kiyev) SOV/41-11-1-2/12

TITLE: On the Development of Selfadjoint Operators in Terms of Eigenfunctions

PERIODICAL: Ukrainskiy matematicheskiy zhurnal, 1959, Vol 11, Nr 1, pp 16-24 (USSR)

ASTRACT: The article whose contents were reported in October 1957 at the Session of the Physico-Mathematical Section of the AS Ukr.SSR, contains no essentially new results. The author gives a very simple and general method for the series development of selfadjoint operators in terms of eigenfunctions, where the principal theorem of G.I.Kats [Ref 8,9] on which this method is based, is proved again. The author mentions I.M. Gel'fand and A.G.Kostyuchenko.
There are 16 references, 13 of which are Soviet, 1 Polish, and 2 American.

SUBMITTED: July 14, 1958

Card 1/1

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204800027-6

On Boundary Value Problems for General Partial Differential Operators SOV/20-122-6-1/49

2 American, 1 Hungarian, and 1 Roumanian.

ASSOCIATION: Institut matematiki AN USSR (Mathematical Institute, AS Ukrain.SSR)

PRESENTED: June 7, 1958, by S.L. Sobolev, Academician

SUBMITTED: June 6, 1958

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204800027-6

AUTHOR: Berezanskiy, Yu.M.

SOV/20-122-6-1/49

TITLE: On Boundary Value Problems for General Partial Differential Operators (O krayevykh zadachakh dlya obshchikh differentsial'nykh operatorov v chastnykh proizvodnykh)

PERIODICAL: Doklady Akademii nauk,SSSR,1958,Vol 122,Nr 6,pp959-962 (USSR)

ABSTRACT: The author considers the solvability of a boundary value problem for the equation $L[u] = f$, where

$$L[u] = \sum_{j,k=1}^{n} a_{jk}(x) \frac{\partial^2 u}{\partial x_j \partial x_k} + \sum_{j=1}^{n} a_j(x) \frac{\partial u}{\partial x_j} + a(x)u$$

He states that the boundary value problem possesses a generalized solution for every $f \in L_2$, if and only if the solution of the conjugate homogeneous equation vanishes for conjugate boundary conditions. The consideration is based on the notion of the negative norm which is introduced in a somewhat other way than in the paper of Lax [Ref 12]. Numerous examples are shortly mentioned. There are 16 references, 9 of which are Soviet, 3 Italian,

Card 1/2

BEREZANSKIY, Yu.M. (Kiyev)

Uniqueness theorem and inverse problem of spectral analysis for Schroedinger's equation. Trudy Mosk.mat. ob-va 7:3-62 '58.

(Functional analysis) (MIRA 11:8)

Decomposition of Self-adjoint Operators in Terms of Eigen- 39-1-7/8
functions.

By this roughly outlined scheme the author obtains at first the decomposition of a self-adjoint operator in the space of the functions which are summable in the square, in particular certain diagonal decompositions. The second paragraph is devoted to the application to differential operators (in general non-elliptic ones); as an example a Cauchy problem is considered. In the last paragraph the author investigates elliptic and ordinary differential equations. The estimation of indefinite integrals of the eigenfunctions of an elliptic operator among others yields that these integrals do not increase quicker than a certain power of $|x|$ (depending on the dimension of the space). A considerable part of the author's results is not new, the value of the paper lies more in the uniform treatment of the subject. The author's suppositions in general are somewhat more extensive than it would be necessary in the single problem (particularly for ordinary differential equations).
22 Soviet and 12 foreign references are quoted.

SUBMITTED: June 2, 1956

AVAILABLE: Library of Congress

Card 3/3

Decomposition of Self-adjoint Operators in Terms of Eigen-functions. 39-1-7/8

$\langle C\,\omega_y, \omega_x \rangle$ has a sense. Let D^* be inverse to I and D adjointed to D^* in the sense of the real L_2. D and D^* have differential character. It is $\langle C\delta_y, \delta_x \rangle = D_x^* D_y^* I_x I_y \langle C\delta_y \delta_x \rangle = D_x^* D_y^* \langle C I_y \delta_y, I_x \delta_x \rangle = D_x^* D_y^* \langle C\omega_y, \omega_x \rangle$. If this is substituted into the expression for $\langle C f, g \rangle$, then it follows

(1) $\langle C f, g \rangle = \iint \langle C\omega_y, \omega_x \rangle (Df)(y)\overline{(Dg)(x)}\,dxdy$

With the aid of this equation now the considered decompositions are obtained in the single cases. E.g. one considers the case of a straight line in L_2 and E_λ is the decomposition of the unit and

$$(f,g) = \int_{-\infty}^{\infty} d(E_\lambda f, g)$$ the Parceval equation, then it

follows by application of (1) to E_λ for one times continuously differentiable finite functions f, g:

Card 2/3

$$(f,g) = \int_{-\infty}^{\infty} d_\lambda \left\{ \iint \theta(x,y;\lambda) f'(y) g'(x)\,dxdy \right\},\quad \theta(x,y,\lambda) = (E_\lambda \omega_y, \omega_x).$$

BEREZANSKIY, Yu. M.

AUTHOR: BEREZANSKIY, Yu.M. (Kiyev)

39-1-7/8

TITLE: Decomposition of Self-adjoint Operators in Terms of Eigenfunctions (Razlozheniye po sobstvennym funktsiyam samosopryazhennykh operatorov).

PERIODICAL: Matematicheskiy Sbornik, 1957, Vol. 43, Nr 1, pp. 75-126 (USSR)

ABSTRACT: The author considers the decomposition of a self-adjoint operator (in particular of a differential operator) in a Hilbert space. Let $\mathfrak{H}$ be a Hilbert space of the functions $f(x)$, where x is a continuous variable, let $\langle f, g \rangle$ be the scalar product in $\mathfrak{H}$ and C a bounded operator in $\mathfrak{H}$. If f and g are decomposed with respect to the system of the delta functions δ_x: $f(\xi) = \int f(y)\delta_y(\xi)dy$, $g(\xi) = \int g(x)\delta_x(\xi)dx$, then it follows formally: $\langle C f, g \rangle = \langle \int f(y)C\delta_y dy, \int g(x)\delta_x dx \rangle = \iint \langle C\delta_y, \delta_x \rangle f(y)g(x)dxdy$. This equation would be exact, if $\delta_x, \delta_y \in \mathfrak{H}$. However, this is not so. In all practically occurring cases, however, one can act on the variable x in δ_x by a real operator I of integral type in such a way that $\omega_x(\xi) = I\delta(\xi)(x)$ belongs to $\mathfrak{H}$ for each x in ξ. Now the kernel

Card 1/3

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204800027-6

BEREZANSKIY, Yu. M.

SUBJECT USSR/MATHEMATICS/Algebra CARD 1/1 PG - 736
AUTHOR BEREZANSKI Ju.M., KREJN S.G.
TITLE Hypercomplex systems with an infinite basis.
PERIODICAL Uspechi mat.Nauk 12, 1, 147-152 (1957)
reviewed 5/1957

An ordinary hypercomplex system the elements of which are n-dimensional vectors x, can be understood as a ring of complex-valued functions $x(j) = x_j$ which are defined on a basis Q consisting of n points, where the ordinary addition and multiplication with a scalar and the composition

$$(x * y)(l) = \sum_{j,k=1}^{n} x(j)y(k)c_{jkl}$$

c_{jkl} - structural constants, are valid. The authors extend the notion of the commutative hypercomplex system to the case that Q is a locally compact metric space. The authors restrict themselves to positive structural constants. Then it is shown that by restricting to (in a certain sense) symmetric hypercomplex systems, to these systems the principal results of the harmonic analysis on commutative locally compact groups can be transferred. Numerous examples are given.

Doklady Akad.Nauk 110, 893-896 (1956) CARD 2/2 PG - 690

$$K(x,y) = \int_{-\infty}^{+\infty} \psi(x,y;\lambda)\, d\varsigma(\lambda),$$

where $\psi(x,y;\lambda)$ is a family of elementary positive definite kernels and $\varsigma(\lambda)$ is a non-decreasing function, it is necessary and sufficient that the expression $\overline{L}'$ is hermitean in the scalar product

$$\langle f,g\rangle = \iint_{GG} K(x,y) f(y) \overline{g(x)}\, dx\, dy,$$

i.e. that $\langle \overline{L}'f,g\rangle = \langle f,\overline{L}'g\rangle$ for all finite r times differentiable functions f,g. If $K(x,y)$ is r times continuously differentiable with respect to x and y, then $\overline{L}'$ is hermitean if $L_x[K(x,y)] = \overline{L}_y[K(x,y)]$ $(x,y \in G)$ holds and inversely.

INSTITUTION: Math.Inst.,Acad.Sci. USSR.

~~BEREZANSKIY, YU.M.~~ BEREZANSKIJ, JU.M.

SUBJECT USSR/MATHEMATICS/Functional analysis CARD 1/2 PG - 690
AUTHOR BEREZANSKIJ Ju.M.
TITLE A generalization of a theorem of Bochner to decompositions in terms of eigenfunctions of partial differential equations.
PERIODICAL Doklady Akad.Nauk 110, 893-896 (1956)
reviewed 4/1957

Let G be a finite or infinite domain of the n-dimensional space with a piece-wise smooth boundary. The function f(x) ($x \in G$) is called finite if it annihilates in the neighborhood of the boundary of G. Let be valid in G:

$$L[f] = Lx[f] = \sum_{0 \leq k_1 + .. k_n \leq r} a_{k_1 \dots k_n}(x) \frac{\partial^{k_1 + \dots + k_n}}{\partial x_1^{k_1} \dots \partial x_n^{k_n}} f .$$

Let the a(x) be complex, $\bar{L}$ arises from L if instead of the a(x) the conjugate-complex terms are taken, let L' be the expression being conjugated to L. A continuous, positive definite kernel $\psi(x,y;\lambda)$ is called elementary if it is r times continuously differentiable with respect to x and y and satisfies the equation $L_x[\psi] = \lambda\psi$ or $\bar{L}_y[\psi] = \lambda\psi$.

The principal result of the author is as follows:
In order that a continuous positive definite kernel K(x,y) ($x,y \in G$) admits the representation

Doklady Akad.Nauk 108, 379-382 (1956) CARD 2/2 PG - 507

has a square integrable solution $B(x)$ defined in the entire space. Applying Parseval's formula to the identity $(f,g) = (Bbf,g)$, $((Bf)(x) = \int B(x-y)f(y)dy)$, we get $(F,G) = \int(\int C(\lambda,y)f(y)dy)\cdot\overline{G(\lambda)}d\sigma(\lambda)$ where $f \in C^{\infty}$ vanishes outside a compact subset of S, $G = Ug$ and $C(\lambda,y) = U_x B(x-y)$. Because g is arbitrary, $(Uf)(\lambda) = F(\lambda) = \int C(\lambda,y)bf(y)\,dy$ is a distribution for a.a. λ. When S is the entire space (1) $\iint |C(\lambda,y)|^2 d\sigma(\lambda)\,dy/(1+|y|^{n+\varepsilon}) < \infty$ if $\varepsilon > 0$, which means that $\int|C(\lambda,y)|^2 dy/(1+|y|^{n+\varepsilon})$ is finite for a.a. λ. (The author gets the exponent $2n+1+\varepsilon$ because of another choice of b). The results are specialized to the case when A is the restriction of a differential operator A_0 (considered as a distribution) with sufficiently differentiable coefficients. When A_0 is elliptic, $b(D_y)C(\lambda,y)$ exists and is an ordinary eigenfunction of A_0 and (1) can be improved. Finally, explicit formulas are given when S is the entire space, $n = 2$ and $A_0 = \partial^2/\partial x_1^2 - \partial^2/\partial x_2^2$.

INSTITUTION: Math.Inst.Acad.Sci.

BEREZANSKIY, YU.M.

SUBJECT USSR/MATHEMATICS/Functional analysis CARD 1/2 PG - 507
AUTHOR BEREZANSKIJ Ju.M.
TITLE On eigenfunction expansions for general self-adjoined differential operators.
PERIODICAL Doklady Akad.Nauk 108, 379-382 (1956)
reviewed 1/1957

Let σ be a measure on the real line and $N(\lambda)$ a dimension function. The direct integral $L^2(\sigma,N)$ is by definition a Hilbert space consisting of the vector-valued functions $F(\lambda) = \{F_k(\lambda)\}_1^{N(\lambda)}$ with the scalar product $(F,G) = \int F(\lambda)\cdot\overline{G(\lambda)}d\sigma(\lambda)$, $(F(\lambda)\cdot\overline{G(\lambda)} = \sum F_k(\lambda)\ \overline{G_k(\lambda)}$). Let A be a self-adjoint operator on a separable Hilbert space H. The spectral theorem may be stated in the following form: there exists a direct integral $H^* = L^2(\sigma,N)$ and a unitary mapping U from H to H^* which diagonalizes A in the sense that UAU^{-1} is multiplication by λ. Now let H be all square integrable functions on an open subset S of real n-space. The author shows that for almost all λ, the components of $F(\lambda) = (Uf)(\lambda)$ are distributions considered as functions of f. Slightly modified, the proof runs as follows. Let b be the differential operator $(-\Delta)^k + 1$, $(2k > n)$. It

ILLEGIBLE

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204800027-6

BEREZANSKIY, Yuriy Makarovich.

Inst of Mathematics, Acad Sci UkSSR, Academic degree of Doctor of Physico-Mathematical Sciences, based on his defense, 25 June 1955, in the Joint Council of Institutes of Physics and of Mathematics, Acad Sci UkSSR, of his dissertation entitled: "Some problems of the spectral theory of equations in partial differences and partial derivatives."

Academic degree and/or title: Doctor of Sciences

SO: Decisions of VAK, List no. 5, 3 March 56, Byulleten' MVO SSSR, No. 2, Jan 57, Moscow, pp 17-20, Uncl. JPRS/NY-466

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204800027-6

Doklady Akad. Nauk 105, 197-200 (1955) CARD 2/2 PG - 174

with respect to the normal). Let $\vartheta(p,q;\lambda)$ be the corresponding spectral function. On the boundary Γ of G let exist a plane piece Σ, where $\sigma(p) = 0$. Then the function $\vartheta(p,q;\lambda)$ $(p,q \in \Sigma,\ -\infty < \lambda < +\infty)$, determines uniquely the coefficient c(p) in the class of the piecewise analytic coefficients and the boundary condition on the boundary part $\Gamma \setminus \Sigma$, i.e. the function $\sigma(p), p \in \Gamma \setminus \Sigma$. If G is the whole space, then c(p) is determined uniquely by the matrix

$$\Theta(p,q;\lambda) = \left\| \begin{matrix} \vartheta(p,q;\lambda) & \frac{\partial}{\partial n_p}\vartheta(p,q;\lambda) \\ \frac{\partial}{\partial n_q}\vartheta(p,q;\lambda) & \frac{\partial^2}{\partial n_p \partial n_q}\vartheta(p,q;\lambda) \end{matrix} \right\| .$$

This holds for all λ, $-\infty < \lambda < +\infty$ and points p and q which change on a two times continuously differentiable piece of a surface which joins a region where c(p) is known.
Then five further possible formulations of the considered inversion problem are given for the case $c(p) \geq 0$ and it is proved that they all are equivalent. The author uses results of Porzner (Mat.Sbornik, 32, (1953) No.1).

INSTITUTION: Mathematical Institute of the Academy of Sciences of the USSR.

BEREZANSKIY, Yu.M.

SUBJECT USSR/MATHEMATICS/Differential equations CARD 1/2 PG - 174
AUTHOR BEREZANSKIJ, Ju.M.
TITLE On the inversion problem of the spectral analysis for the Schrödinger equation.
PERIODICAL Doklady Akad. Nauk 105, 197-200 (1955)
reviewed 7/1956

Let be given the Schrödinger equation

(1) $$L[u] = -\Delta u + c(p)u = \lambda u$$

with a function c(p) being variable, two times differentiable in the three-dimensional region. The author asks for the possibility to determine the coefficient c(p) by the spectral characteristics of (1). The answer is given by an essential generalization of an earlier result of the author (Doklady Akad. Nauk 93, (1953) No.4); the following theorem is formulated: Let G be a finite or infinite region of the three-dimensional space which is bounded by analytic surfaces, where in every finite part of the space there is only a finite number of these surfaces. In G the author considers (1) with the boundary condition

$$\frac{\partial u}{\partial n} + \sigma(p)u = 0$$

($\sigma(p)$ a real, continuous function of a boundary point, $\frac{\partial u}{\partial n}$ is the derivative

BEREZANSKIY, YU. M.

BEREZANSKIY, YU. M.- " Certain Problems in the Spectral Theory of Equations with Partial Differences and Partial Derivatives." Acad. Sci. Ukraine SSR, Inst of Mathematics, Kiev, 1955 (Dissertations for the Degree of Candidate of Physicomathematical Sciences)

SO: Knizhnaya Letopis' No. 26, June 1955, Moscow

ILLEGIBLE

ILLEGIBLE

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204800027-6

BEREZANSKIY, Yu.M.; KOLMOGOROV, A.N., akademik.

Unique determination of the Schrödinger equation by its spectral function. DoKl.AN SSSR 93 no.4:591-594 D '53. (MLRA 6:11)

1. Akademiya nauk SSSR (for Kolmogorov). 2. Institut matematiki Akademii nauk Ukrainskoy SSR (for Berezanskiy).

(Geometry, Differential--Projective)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204800027-6

BEREZANSKIY, Yu. M.

USSR/Mathematics - Finite Differences 1 Nov 53

"Expansion in the Eigenfunctions of Partial-Differences Equations," Yu. M. Berezanskiy, Inst of Math, Acad Sci Uk SSR

DAN SSSR, Vol 93, No 1, pp 5-8

Shows that for a second-order difference operator in partial differences $L[u]=0$ one can find a formula with an infinite-dimension spectral matrix which is analogous to the "Fourier transformation" in the case of the ordinary difference operation

275T69

$\ell[u] = a_{j-1}u_{j-1}+c_ju_j+a_ju_{j+1}$ ($a_j>0$, Im $c_j=0$) (N. I. Akhiyezer, Usp Matem Nauk, 9, 1941). Presented by Acad A. N. Kolmogorov 4 Sep 53.

BEREZANSKIY, Yu. M.

USSR/Mathematics - Hypercomplex 21 Aug 53

"Hypercomplex Systems Constructed in Accordance with the Sturm-Liouville Equation on the Semiaxis," Yu. M. Berezanskiy, Inst of Math, Acad Sci Ukr SSR

DAN SSSR, Vol 91, No 6, pp 1245-1248

Studies rings of summable functions constructed from the Sturm-Liouville eq $y'' = q(t)y - \lambda y$ ($0 \leq t \leq \infty$) without any limitations on the order of smallness of $q(t)$ at infinity, but under the assumption that this function is of bounded variation on the semiaxis $(0, \infty)$. This problem was

275T73

first studied by A. Ya. Pvzner (Mat Sbor. 23 (65), No 1, 1948) for $q(t) = O(t^{-a-\varepsilon})$ ($a=2,3; \varepsilon > 0$) and later by Z. S. Agranovich (DAN 66, No 6, 1949) and V. A. Marchenko in his doctoral dissertation (Trudy Moskov Mat Ob-va, Vol 2, No 3, 1953). Cites N. Levinson, Duke Math J. 15, No 1, 1948. Presented by Acad A. N. Kolmogorov 27 Jun 53.

BEREZANSKIY, YU. M.

PA 241T79

USSR/Mathematics - Difference Equations Jan/Feb 53

"Generalized Almost-Periodic Functions and Sequences Connected With Differential and Difference Equations," Yu. M. Berezanskiy, Kiev

"Matemat Sbor" Vol 32 (74), No 1, pp 157-194

Derives a new method for demonstrating the Parseval eq for subject case. Discusses almost-periodic functions relative to displacement generated by Sturm-Liouville eq; operators of generalized displacement which are generated by orthogonal polynomials relative to a certain weight; and orthogonal polynomials "close" to Chebyshev polynomials. Submitted 29 Mar 52.

241T79

BEREZANSKIY, YU M

Functions

"Theory of almost periodic functions relative to the translati ns in hypercomplex systems"
Dokl. AN SSSR 85, no. 1,1952

ILLEGIBLE

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204800027-6

25x9

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204800027-6

$\tilde{P}_j(t)\,d\sigma(t)$. That is, one simply expands the function $X(t)$ in a series of the polynomials $\tilde{P}_j$. The inverse V of U is defined analogously. No general discussion is given for the existence of U or V. A complicated theorem is proved giving sufficient conditions that U and V be defined and continuous on the space $\Lambda(p(t)dt, u)$ and $\Lambda(p(t)h(t)dt, u)$. This theorem is applied to show that U and V are both continuous for $\Lambda((1-t^2)^{m/2-1}dt, \pi(m-1)/2)$ and $\Lambda(h(t)(1-t^2)^{m/2-1}dt, \pi(m-1)/2)$ (here $Q=[-1,1]$), provided that the function $h(t)$ has a bounded derivative of order $[1/2(m+5)]$, for $m>1$, and of order 2 for $m=1$. Some of the results of this paper have been announced earlier [Doklady Akad. Nauk SSSR (N.S.) 81, 329-332 (1951); these Rev. 13, 952].

E. Hewitt (Seattle, Wash.).

BEREZANSKIY, YU. M.

Mathematical Reviews
Vol. 14 No. 9
Oct. 1953
Analysis

Berezanskii, Yu. M. On certain normed rings constructed from orthogonal polynomials. Ukrain. Mat. Zurnal 3, 412-432 (1951). (Russian).

This paper deals with functions expansible in absolutely convergent series of orthogonal polynomials: Cebysev, Legendre, Jacobi, and others. A certain part of the discussion is case in a very general form, as follows. Let Q be a compact subset of $(-\infty, \infty)$ and let σ be a non-negative countably additive Borel measure on Q. Let $\{P_n(t)\}_{n=0}^{\infty}$ be the set of polynomials on Q orthonormalized with respect to σ (P_n has degree n). Let $0 < \mu_0 \leq \mu_1 \leq \mu_2 \leq \cdots \mu_n \leq$ be a sequence of numbers wuch that $|P_n(t)|\mu_n^{-1}$ is uniformly bounded for all n and all $t \in$ Q. Let $A(d\sigma, \mu)$ be the space of all complex functions $x(t)$ on Q such that $x(t) = \sum_{j=0}^{\infty} x_j P_j(t)$ and also $\|x\| = \sum_{j=0}^{\infty} |x_j| \mu_j < \infty$. With pointwise algebraic operations and the above norm, $A(d\sigma, \mu)$ is obviously a complex Banach space, and under certain conditions it is also a Banach algebra, with $\|xy\| \leq \|x\| \cdot \|y\|$. The space $A(d\sigma, \mu)$ is of course commutative and has a unit whenever it is a Banach algebra. A simple but not easily applied necessary and sufficient condition that

BEREZANSKIY, YU.M.

5-21-54
mf

Mathematical Reviews
Vol. 14 No. 10
Nov. 1953
Algebra

Berezanskii, Yu. M., and Krein, S. G. Hypercomplex systems with a compact basis. Ukrain. Mat. Zurnal 3, 184-204 (1951). (Russian).
Detailed exposition of results already announced [Doklady Akad. Nauk SSSR (N.S.) 72, 5-8, 237-240 (1950); these Rev. 12, 188, 189]. The authors have changed the term "continuous algebra" to the one given in the title.
I. Kaplansky (Chicago, Ill.).

ILLEGIBLE

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204800027-6

BEREZANSKIY, Yu. M.

PA 160T48

USSR/Mathematics - Group Theory
Algebras

11 May 50

"Certain Classes of Continuous Algebras," Yu. M. Berezanskiy, S. G. Kreyn, Inst of Math, Acad Sci USSR, 4 pp

"Dok Ak Nauk SSSR" Vol LXXII, No 2

Discusses special classes of continuous algebras, for which authors successfully prove a number of theorems that generalize corresponding theorems relative to a group ring of a compact commutative group. Submitted 7 Oct 49 by Acad A. N. Kolmogorov.

160T48

[redacted]

ILLEGIBLE

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204800027-6

BEREZANSKIY, Yu.M. (Kiyev); GORBACHUK, M.L. (Kiyev)

Continuation of positively defined functions of two variables.
Ukr. mat. zhur. 17 no.5:96-102 '65. (MIRA 18:12)

1. Submitted July 12, 1965.

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204800027-6

KUDRYASHEV, L.I., prof., doktor tekhn.nauk; DEVYATKIN, B.A., dotsent, kand.tekhn.nauk; BEREZANSKIY, V.Yu., kand.tekhn.nauk; GOLOVANOV, O.M., kand.tekhn.nauk

Improving boiler rating and steam quality at the boiler plant of the "Magnezit" works. Sbor. nauch. trud. Kuib. indus. inst. no.8:231-238 '59. (MIRA 14:7)

(Boilers)

KUDRYASHEV, L.I., prof., doktor tekhn.nauk; BEREZANSKIY, V.Yu., kand. tekhn.nauk

Effect of free convection on convective heat transfer in gaseous dispersive systems. Sbor. nauch. trud. Kuib. indus. inst. no.8: 189-196 '59. (MIRA 14:7)

(Heat--Convection) (Hydrodynamics)

KUDRYASHEV, L.I., prof., doktor tekhn.nauk; BEREZANSKIY, V.Yu., kand. tekhn.nauk

Effect of unsteady thermal conditions and flow rates on convective heat transfer in gaseous dispersive systems. Sbor. nauch. trud. Kuib indus. inst. no.8:185-188 '59. (MIRA 14:7)
(Heat--Convection) (Hydrodynamics)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204800027-6

BEREZANSKIY, V. Yu.

BEREZANSKIY, V. Yu. - "Coefficients of convective thermal exchange and resistance in gas-dispersion media." Kuybyshev, 1955. Min Higher Education USSR. Kuybyshev Industrial Inst imeni V. V. Kuybyshev. (Dissertations for degree of Candidate of Technical Sciences.)

SO: Knizhnaya letopis', No 48. 26 November 1955. Moscow.

BEREZANSKIY, S.A.

BEREZANSKIY, S.A., inzh.

Using suction gates in repairing reinforced concrete membrane of rock-fill dams. Gidr.stroi. 26 no.10:41-43 O '57. (MIRA 10:10)
(Dams)

BEREZANSKIY, M.Ya. [Berezans'kyi, M.IA.], kand.sel'skokhoz.nauk

Perennial grasses and legumes for field crop rotations in the forest-steppe region of the Western Ukraine. Nauch. trudy UASHN 9:30-47 '59. (MIRA 14:3)
(Ukraine, Western--Forage plants)

BEREZANSKIY, I.A.

Hypercompleteness of the topological sum of a denumerable set of straight lines. Usp. mat. nauk 20 no.2:167-173 Mr-Ap '65. (MIRA 18:5)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204800027-6

BEREZANSKAYA, Ye.S. (Moskva)

"Teaching decimal fractions before the common ones. Mat v shkole no.5:37-39 S-O '61. (MIRA 14:10)
(Moldavia--Fractions--Study and teaching)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204800027-6

BEREZANSKAYA, Ye.S.

Experience in conducting practical work in the course "Methodology of teaching mathematics" at the V.I.Lenin Moscow State Pedagogical Institute. Uch. zap. MGPI 151:221-224 '60. (MIRA 16:5)
(Mathematics--Study and teaching)

BEREZANSKAYA, Ye.S.; Margulis, A.Ya.

Aleksandr IAkovlevidh Khinchin; obituary. Mat.v shkole no.1: 77-79 Ja-F '60. (MIRA 13:5)
(Khinchin, Aleksandr IAkovlevich, 1894-1959)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204800027-6

BEREZANSKAYA, Ye.S.; GUREVICH, G.B.; DITSMAN, A.P. (Moskva); BUDANTSEV, P.A. (Orenburg); KUKOLEV, V.G. (Perm'); LYAPIN, S.Ye. (Leningrad); PRINTSEV, N.A. (Kursk)

Discussion of the new mathematics curricula. Mat. v shkole no.2:5-20 Mr-Ap '59. (MIRA 12:6)
(Mathematics--Study and teaching)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204800027-6

BEREZANSKAYA, Yelizaveta Savil'yevna; KOLMOGOROV, Nikolay Andreyevich; NAGIBIN, Fedor Fedorovich; CHERKASOV, Rostislav Semenovich; LEPESHKINA, N.I., red.; GOLOVKO, B.N., tekhn.red.; KORNEYEVA, V.I., tekhn.red.

[Collection of problems and exercises on geometry; textbook for secondary school teachers] Sbornik zadach i voprosov po geometrii; posobie dlia uchitelei srednei shkoly. Moskva, Gos. uchebno-pedagog.izd-vo M-va prosv.RSFSR, 1959. 207 p. (MIRA 13:10)

(Geometry--Problems, exercises, etc.)

BEREZANSKAYA, Ye.S., dotsent, kand. pedag. nauk

Graphic methods in the algebra course of grade 8. Uch. zap. MGPI 116:25-57 '58. (MIRA 12:9)
(Algebra--Graphic methods)

BEREZANSKAYA, Ye.S., dotsent, kand. pedag. nauk

Forty years of mathematics teachings in Soviet secondary schools. Uch. zap. MGPI 116:3-24 '58. (MIRA 12:9)
(Mathematics--Study and teaching)

BEREZANSKAYA, Ye. S.

REP'YEV, Vasiliy Vasil'yevich,; BRADIS, V.M., retsenzent,; BEREZANSKAYA, Ye.S., retsenzent,; LEPESHKINA, N.I., red.; NATANOV, M.I., tekhn. red.

[General methods of teaching mathematics; a manual for pedagogical institutes] Obshchaia metodika prepodavaniia matematiki; posobie dlia pedagogicheskikh institutov. Moskva, Gos. uchebno-pedagog. izd-vo M-va prosv. RSFSR, 1958. 222 p. (MIRA 11:12)
(Mathematics--Study and teaching)

BEREZANSKAYA, Ye.S. (Moskva); SHOR, Ya.A. (Moskva); PROCHUKHAYEV, V.G. (Moskva).

"Arithmetic textbook" by I.N. Shevchenko. Reviewed by E.S. Bere-zanskaia, IA. A. Shor, V.G. Prochukhaev. Mat. v shkole no.4:39-46 S-O '57 (MIRA 10:8)

(Arithmetic) (Shevchenko, I.N.)

ANDRONOV, I.K., professor; BEREZANSKAYA, Ye.S.; GLAGOLEV, N.S.; DEPMAN, I.Ya., professor; ZOLOTOVITSKIY, Ye.N.; IL'IN, A.Ye., dotsent; LYAPIN, S.Ye., MULYARCHIK, M.Z., uchitel'; PETRAKOV, I.S.; CHICHIGIN, V.G.

Aleksandr Nikolaevich Barsukov. Mat. v shkole no.1:72-74 Ja-F '57. (MLRA 10:2)

1. Moskovskiy oblastnoy pedagogicheskiy institut (for Andronov). 2. Zaveduyushchiy kafedroy metodiki matematiki Moskovskogo pedagogicheskogo instituta imeni V.I. Lenina (for Berezanskaya). 3. Metodist Shcherbakovskogo rayona goroda Moskvy (for Glagolev). 4. Leningradskiy pedagogicheskiy institut (for Depman). 5. Metodist Balashikhinskogo rayona Moskovskoy oblasti (for Zolotovitskiy). 6. Moskovskiy pedagogicheskiy institut imeni V.I. Lenina (for Il'in. 7. Zaveduyushchiy kafedroy metodiki matematiki Leningradskogo pedagogicheskogo instituta imeni A.I. Gertsena (for Lyapin). 8. Shkola No.29 goroda Moskvy (for Mulyarchik). 9. Zaveduyushchiy kabinetom matematiki Moskovskogooblastnogo instituta usovershenstvovaniya uchiteley (for Petrakov). 10. Zaveduyushchiy kafedroy metodiki matematiki Moskovskogo pedagogicheskogo instituta imeni V.P. Potemkina (for Chichigin).
(Barsukov, Aleksandr Nikolaevich, 1891-)

BEREZANSKAYA, Ye.S. (Moskva).

Irrational equations. Mat.v shkole no.1:45-49 Ja-F '57. (MLRA 10:2)
(Equations--Study and teaching)

BEREZANSKAYA, Ye.S. (Moskva)

State of the knowledge of algebra of eighth class students in a secondary school. Mat. v shkole no.6:50-60 N-D '55. (MLRA 9:2)
(Mathematics--Study and teaching)

BEREZANSKAYA, Ye.S. (Moskova)

State of the knowledge of algebra of students in the eighth class of secondary schools. Mat. v shkole no.2:60-68 Mr-Ap '55.
(Algebra--Study and teaching) (MLRA 8:6)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204800027-6

BEREZANSKAYA, Yelisaveta Savel'yevna; LEPESHKINA, N.I., redaktor; RYBIN, I.V., tekhnicheskiy redaktor.

[Methods of teaching arithmetic; manual for teachers] Metodika arifmetiki; posobie dlia uchitelei. Izd. 5-e, perer. Moskva, Gos. uchebno-pedagog. izd-vo Ministerstva prosveshcheniia RSFSR, 1955. 541 p. (MLRA 9:5)

(Arithmetic--Study and teaching)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204800027-6

BEREZANSKAYA, Yelizabeta Savel'yevna; NAGIBIN, Fedor Fedorovich; IMPESH-KINA, N.I., redaktor; RYBIN, I.V., tekhnicheskiy redaktor

[Collection of problems and exercises in algebra and trigonometry; for classes 8-10 of the secondary school] Sbornik voprosov i uprazhnenii po algebre i trigonometrii; dlia VIII-X klassov srednei shkoly. Izd. 2-e. Moskva, Gos. uchebno-pedagog. izd-vo Ministertva prosveshcheniia RSFSR, 1955. 159 p. (MIRA 8:7)

(Algebra--Problems, exercises, etc.)
(Trigonometry--Problems, exercises, etc.)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204800027-6

BEREZANOVSKAYA, L.

OPARIN, A.I.; BEREZANOVSKAYA, L., redaktor; MAN'KOVSKIY, B., tekhnicheskiy redaktor.

[Origin of life on earth] Vozniknovenie zhizni na zemle. Moskva, Gos. izd-vo kul'turno-prosv.lit-ry, 1954. 22 p. (Bibliotechka v pomoshch' lektoru, no.23) [Microfilm] (MIRA 10:4)
(Life--Origin)

BEREZANCHEVA, L. F., KORNUSHENKO, N. F. and KAGANOVA, S. S.

Effect of streptomycin on M. tuberculosis in the cerebrospinal fluid Probl. Tuberk, 1950, 2 (58-60) Tables 1. In 16 of 34 tb meningitis cases (25 children) a complete study of the CSF, of the tubercle bacilli obtained-morphologically and biologically (guinea-pigs) - was made. In 9 cases after the first course streptomycin the CSF was sterile. In 3 cases after the first course tb bacilli were present in the CSF but these did not infect the guinea-pig. After the second course they had disappeared. These 12 patients recovered. In 4 cases after the first course bacilli were found in the CSF and guinea-pigs became infected. Rucurrence of the meningitis occurred and was fatal in 2 cases. VAn der Molen - Terwolde (XV, 7, 8)

SO: Neurology & Psychiatry July-Dec. 1951 4.2

[illegible]EZAN, O.

Contributions to the culture of pines in Rumania. p. 594. REVISTA PADURILOR. (Asociatia Stiintifica a Inginerilor si Technicienilor din Romania si al Ministerului Agriculturii si Silviculturii) Bucuresti. Vol. 70, no. 12, Dec. 1955.

So. East European Accessions List Vol. 5, No. 8 August, 1956

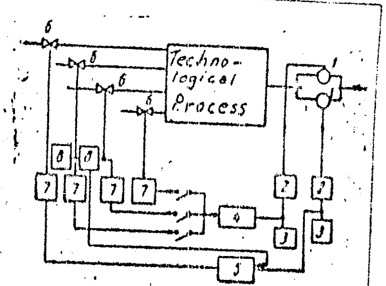
BEREZAN, O.

"Propagation of Ornamental Resinous Plants Along [illegible]", p. [illegible], (REVISTA PADURILOR, Vol. [illegible], No. 8, August 1954, Bucharest, Rumania)

SO: Monthly List of East European Accessions ([illegible]), LC, Vol. [illegible], No. [illegible], March 1955, Uncl.

ACC NR: AP6021434

Fig. 1. 1 - sensing elements; 2 - comparison units; 3 - polarized relay; 4 - control device; 5 - calculation-control device; 6 - regulating elements; 7 - slave mechanisms; 8 - position sensing elements



parameters simultaneously and on the regulated parameter characterizing the process efficiency are connected to the common control device through the contacts of three relays. Each of these relays operates as a function of the combination of the divergence signs of both regulated parameters from the given values. This operation is accomplished by polarized relays connected to the outputs of the comparison units. Orig. art. has: 1 figure.

SUB CODE: 09, 13/ SUBM DATE: 15Jun64

Card 2/2

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204800027-6

ACC NR: AP6021434 SOURCE CODE: UR/0413/66/000/011/0035/0035

INVENTOR: Bereza, V. Sh.

ORG: none

TITLE: A system for combined regulation of two parameters. Class 21, No. 182211 [announced by All-Union Scientific Research Institute of Synthetic Rubber im. Academician S. V. Lebedev (Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 11, 1966, 35

TOPIC TAGS: production engineering, quality control, automatic control system

ABSTRACT: This Author Certificate presents a system for combined regulation of two parameters. The system includes sensing elements for the parameters being regulated, comparison units, a control device, slave mechanisms, regulating elements, and position sensing elements of the regulating elements (see Fig. 1). The design optimizes the process of selecting the regulating action as a function of the character of the actuating disturbance in the process. The position sensing elements of the regulating elements (which act on both regulated parameters simultaneously) are connected to the input of the control device. The control device is connected to the slave mechanism which acts only on the regulated parameter characterizing the quality of the product sought. The slave mechanisms of the regulating elements acting on both regulated

Card 1/2 UDC: 621-503.2

ILLEGIBLE

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204800027-6

ILLEGIBLE

BEREZA, V. Sh. (Leningrad); BERLIN, M. R. (Leningrad)

Effect of standard control laws on the magnitude of the dispersion of the controlled parameter. Avtom. i telem. 23 no.11:1448-1450 N '62. (MIRA 15:10)

(Automatic control)

BEREZA, V.Sh., kand.tekhn.nauk

Electro-acoustic method of automatic load regulation of ball mills. Teploenergetika 9 no.2:70-72 F '62. (MIRA 15:2)

1. Trest "Sevzapmontazhavtomatika".
(Milling machinery) (Automatic control)

BEREZA, V.Sh., kand.tekhn.nauk

Problem concerning the adjustment of an electroacoustical controller of the grinding operation of a ball mill. Izv. vys. ucheb. zav.; energ. 4 no.11:87-94 N '61. (MIRA 14:12)
(Automatic control) (Milling machinery)

BEREZA, V.Sh. (Leningrad)

Investigation of a nonlinear automatic control system for grinding in a ball mill. Avtomatyka no.4:37-50 '60. (MIRA13:11)
(Automatic control) (Milling machinery)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000204800027-6

BEREZA, V.Sh. (Leningrad)

Statistical evaluation of the precision of automatic control of milling in a ball mill. Avtom.i telem. 20 no.2:150-160 F '59. (MIRA 12:3)

(Automatic control) (Milling machinery)

SOV/119-59-2-2/17

Electroacoustic Regulator for Feeding Ball Mills With Material to Be Crushed

The regulation obtained by the regulator is recorded by a polar recorder. 2 diagrams, one for manual control and one for automatic regulation show distinctly the advantage of the latter one.
The experience gained on 220 regulators in 56 cement-works shows that by means of these apparatus the output may be increased by at least 10-15%. The uniformity of the cement grain size is about two times better than in the case of manual control.
The relatively low prime costs of this automatic means and the results attainable with them are so decisive factors that it can be justly expected that these electroacoustic regulators will find large distribution in the industry.
There are 7 figures and 4 Soviet references.

Card 3/3

and transforms them into an emf. The amplifier transducer equipment amplifies this emf on the one hand and transforms it into a medium current on the other, being proportional to the oscillation frequency of the picked up noise.
At the output of this set a voltage is generated that is put on the potentiometer input which indicates and records the noise frequency. This frequency is a measure for feeding the mill with material. Simultaneously, the automatic potentiometer controls the electrical motors of the mill rollers, by means of a contact mechanism over the intermediate relay and the magnetostarters. In this way, a periodic feeding with material is achieved.
The scheme of the amplifier transducer set is given. It comprises the following elements: valves, type 6N8S and 6N9S, germanium diodes, type DG-Ts 13.
The difference between the regulators RZM-3 and RZM-4, RZM-5 consists only therein that the executing members are of different design according to their duty.
For picking up the noise, the electrodynamic microphone, type MD-35 is used that has a good characteristic within the range of 50-10000 cycles.

7(1)

SOV/119-59-2-2/17

AUTHOR: Bereza, V. Sh., Engineer

TITLE: Electroacoustic Regulator for Feeding Ball Mills With Material to Be Crushed (Elektroakusticheskiy regulyator zagruzki sharovykh mel'nits razmalyvayemym materialom)

PERIODICAL: Priborostroyeniye, 1959, Nr 2, pp 3-6 (USSR)

ABSTRACT: The factory "Reduktor" of the Leningrad sovnarkhoz produces an electroacoustic regulator that serves for proper feeding of the material to be crushed by putting into operation or stopping the feed disk. In the design office "Promstroyavtomatika", analogue regulators of the type RZM-3 were produced that permit, under certain conditions, a triple or dual regulation of the total mill supply without switching off the material infeed into the mill.

The regulator RZM-3 consists of a microphone equipment installed near the mill rollers, of an amplifier and transducer set, type UPB-1, and of an electric automatic potentiometer, type EPD-12, consisting of an intermediate relay, type MKU-48 and of ignition switches, type P-322. The electrodynamic microphone, type MD-35 picks up the noises of the working ball mill

Card 1/3